



9281 F14



Cornell University Library

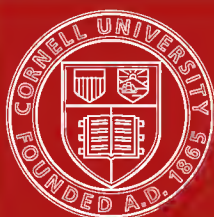
BOUGHT WITH THE INCOME
FROM THE
SAGE ENDOWMENT FUND
THE GIFT OF

Henry W. Sage
1891

A.71695

14/7/94

RETURN TO
ALBERT R. MANN LIBRARY
ITHACA, N. Y.



Cornell University Library

The original of this book is in
the Cornell University Library.

There are no known copyright restrictions in
the United States on the use of the text.

JOHNSON'S
GARDENER'S DICTIONARY.

JOHNSON'S

CORNELL
UNIVERSITY
LIBRARY

GARDENER'S DICTIONARY

A NEW EDITION THOROUGHLY REVISED
AND CONSIDERABLY ENLARGED

BY

C. H. WRIGHT, F.R.M.S.,

AND

D. DEWAR,

CURATOR OF THE GLASGOW BOTANIC GARDEN.

LONDON

GEORGE BELL & SONS, YORK ST., COVENT GARDEN
AND NEW YORK

1894

G

A. 71695

9281 F 14

CHISWICK PRESS: C. WHITTINGHAM AND CO., TOOKS COURT,
CHANCERY LANE.

PREFACE.

JOHNSON'S "Cottage Gardener's Dictionary" was first published in 1846, and immediately took the position as the leading work on the subject. During the forty-eight years that have elapsed since that date the book has been issued in several forms and at various prices. No thoroughly revised edition has, however, been published since 1863, though new supplements have twice been added.

In the present edition the whole of the matter has been carefully revised, and while the arrangement followed in previous editions has, in the main, been adhered to, several important alterations have been made. The limitation of genera laid down in Bentham and Hooker's "Genera Plantarum" has, in most cases, been taken as the standard; but some genera which are there united have here been retained as distinct, *e.g.*, *Azalea* is here kept up as sufficiently distinct from *Rhododendron* for horticultural purposes. Synonyms are quoted in the body of the work, instead of forming a separate list. The translation of a specific name was previously given whenever such name occurred, the result being that a name frequently used (*e.g.*, *angustifolius*) was translated several hundred times in the course of the work. This repeated translation has been abolished as unnecessary, and replaced by a list at the end of the work, giving those names most frequently met with and their meanings, proper and geographical names being omitted. Reference has been made to standard botanical and horticultural works, where reliable figures of the plants mentioned can be found, and in some cases to the

places where the species were originally described. A list of these works is placed at the end of this volume. The cultural directions have been rewritten or amended in accordance with the improved systems of culture now in vogue. Additional insects have been described and figures of some of them given.

The editors gratefully acknowledge assistance readily given upon various points by Messrs. J. G. Baker, F.R.S., N. E. Brown, A.L.S., B. Daydon Jackson, Sec. L.S., Maxwell T. Masters, M.D., F.R.S., G. Nicholson, A.L.S., and R. A. Rolfe, A.L.S.

C. H. WRIGHT.

D. DEWAR.

RICHMOND, SURREY,
April, 1894.

EXPLANATIONS.

It seems only necessary to observe that, to facilitate the proper pronunciation of the names, the vowel in the syllable on which the emphasis is to be laid is denoted by an accent placed after the vowel:—Thus, in ABÉLIA, the emphasis is laid upon the É; and in *floribu'nda* on the *bu*. The other particulars scarcely need any explanation. The specific name is followed by the height of the plant (where the figure or figures stand alone, either feet or the fraction of a foot being intended); the colour of the flower; the month when it begins to bloom; the native country; the year of introduction; and, in many cases, a reference to some standard work, in which a figure of the plant occurs, or in the case of some of the orchids (especially those described by the late Professor Reichenbach) to the original description. The abbreviated titles of such works referred to are fully explained at the end of this volume.

GARDENERS' DICTIONARY.

ABE

Abele Tree. The White Poplar. (*Populus alba*.)

Abelia. (After *Dr. Abel*, Physician to the embassy of Lord Amherst to China. Nat. ord., *Caprifoliaceæ*.)

Ornamental shrubs, suitable for cool green-houses. Hardy in southern counties in sheltered spots; may be turned out in summer in less favourable localities. Cuttings in summer, layers in spring.

- A. floribunda*. 3. Rosy-purple. March. Mexico. 1842. B. M. t. 4316.
- *rupestris*. 5. Pink and white. September. China. 1844. B. R. 1846, t. 8.
- *grandiflora*. A garden variety. Hardy. Rev. Hort. 1886, p. 488.
- *spathulata*. White. Japan. 1881. B. M. t. 6601.
- *triflora*. 5. Pale red. September. Hindostan. Pax. Fl. Gard. t. 91.
- *uniflora*. 3. China. B. M. t. 4694. Syn., *A. serrata*.

Abelmoschus. See **Hibiscus**.

Aberrant. Deviating from a typical form.

Abies. Spruce Fir. (From *abeo*, to rise; on account of the tall habit of the trees. Nat. ord., *Coniferae*.)

A genus of ornamental evergreen trees, mostly hardy. For culture see **PINUS**. Comparatively young plants ripen seed freely.

- A. Ajacensis*. Large tree. Siberia.
- *alba*. 50. May. N. Amer. 1700. Pin. Wob. t. 33.
- *na'na*. May.
- *Albertiana*. See *Tsuga Mertensiana*.
- *amabilis*. 180. April. New California. 1831. G. C. 1880, v. 14, p. 136.
- *aromatica*. 100. Oregon.
- *baborensis*. 40 to 60. Algeria. 1864. Syn., *A. numidica*.
- *balsamea*. 45. May. N. Amer. 1696. Pin. Wob. t. 37. Balm of Gilead.
- *hudsonica*. N. Amer. Syn., *A. Fraseri hudsonica*.
- *bifida*. Japan. 1861. This is merely a form of *A. firma*.
- *brachyphylla*. 120. Japan. 1879. G. C. 1879, v. 12, p. 556.
- *bracteata*. 120. California. 1853. V. M. C. p. 90.
- *Brunonia'na*. See *Tsuga Brunoniana*.
- *canadensis*. See *Tsuga canadensis*.
- *cephalonica*. 60. May. Mountains of Greece. 1824. Syn., *A. Reginae Amalicae*.
- *cili'cica*. 40 to 60. Asia Minor.

ABI

- A. concolor*. 80 to 150. California. 1851. J. L. S. 22, p. 178. Syns., *A. lasiocarpa* and *Parsonii*.
- *Douglasii*. See *Pseudotsuga Douglasii*.
- *dumosa*. See *Tsuga Brunoniana*.
- *Eichleri*. 100. Caucasus.
- *Engelmanni*, and var. *candidissima*. See *Picea Engelmanni*.
- *excelsa*. See *Picea excelsa*.
- *falcata*. 35. Oregon.
- *firma*. 100. Mountains of Japan. V. M. C., p. 95.
- 1861. Syns., *A. bifida* and *homolepis*.
- *Fortunei*. 30 to 40. China. 1850. Syn., *Keteleeria Fortunei*. G. C. 1884, v. 21, p. 348.
- *Fraseri*. 30. May. Pennsylvania. 1811.
- *hudsonica*. See *A. balsamea hudsonica*.
- *na'na*. Dwarf.
- *gracilis*. 170. May. New California. 1831. V. M. C., p. 97.
- *heterophylla*. See *Tsuga Mertensiana*.
- *homolepis*. See *A. firma*.
- *insularis*. See *Pinus*.
- *Jezensis*. 55. Japan.
- *Khitrov*. See *Picea Morinda*.
- *lasiocarpa*. See *A. concolor*.
- *magnifica*. See *A. nobilis robusta*.
- *Mariesii*. Japan. 1879. G. C. 1879, v. 12, p. 189.
- *Menziesii*. See *Picea Menziesii*.
- *merku'sii*. See *Pinus*.
- *Mertensiana*. See *Tsuga Mertensiana*.
- *microphylla*. 180. Oregon.
- *minuta*. See *Picea eremita*.
- *Morinda*. See *Picea Morinda*.
- *macronata*. 180. Oregon.
- *negra*. 60. May. N. Amer. 1700. Pin. Wob. t. 34.
- *nobilis*. 200 to 300. California. 1831. G. C. 1885, v. 24, p. 653.
- *robu'sta*. 200. California. 1851.
- *Nordmanniana*. 80. Crimea. 1848. B. M. t. 6992.
- *horizontalis*. Garden variety.
- *numidica*. See *A. baborensis*.
- *obovata*. See *Picea obovata*.
- *orientalis*. See *Picea orientalis*.
- *Parsonii*. See *A. concolor*.
- *Patto'ni*. Mt. Baker, Washington. G. C. 1881, v. 16, p. 822.
- *pectinata*. 80 to 100. Central Europe. 1603.
- *picca*, with vars. *Apollinis* and *lesicla'da*. See *Picea excelsa*.
- *pichta*. See *A. sibirica*.
- *Pindrow*. 100. May. Himalayas. 1837. G. C. 1836, v. 25, p. 689.
- *Pinsapo*. 65. Spain. 1838. G. C. 1885, v. 24, p. 465.
- *polita*. See *Picea polita*.
- *Reginae Amalicae*. See *A. cephalonica*.
- *religiosa*. 150. Mexico. 1839. B. M. t. 6753.

- A. 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*. See *Picea Schrenkiana*.
- *sibi'rica*. 50. May. Siberia. 1820. Syn., *A. pichta*.
- *Sitche'nsis*. See *Picea Menziesii*.
- *Smithia'na*. See *Picea Morinda*.
- *subalpi'na*. 60 to 100. High mountains of Colorado.
- *trigo'na*. See *Sequoia Rafinesquei*.
- *Tsu'ga*. See *Tsuga Sieboldii*.
- — *na'na*. See *Tsuga Sieboldii nana*.
- *Veit'chii*. 140. Japan. 1861. J. L. S. 18, t. 20.
- *Webbia'na*. 90. Himalayas. 1822. G. C. 1836, v. 25, pp. 683 and 788.
- *Williams'o'ni*. See *Tsuga Pattoniana*.

Ab'o'bra. (Its native name. Nat. ord., *Cucurbitaceæ*.)

Stove or greenhouse plant. Seeds sown in light soil in April. The tubers can be stored during winter.

A. viridifo'ra. Climbing perennial. Pale green. Brazil.

Abor'tion. An imperfect development. In fruit, this frequently occurs from a defect in the male or female organs. If from the first, it may be remedied by using pollen from other plants.

Abra'xas grossularia'ta. Magpie Moth. The caterpillar of this moth often infests the leaves of the gooseberry bush, as well as of the currant, sloe, and even the peach, in early summer. It is common during the evenings of July and August. Usually about one and a half-inch across the expanded fore-wings, which are very slightly yellowish-white, variously spotted with black, more or less like those in our drawing, for the marks are never uniform; and there is a band of pale orange across each of the fore-wings. The hind-wings are of the same colours, but without any orange colouring. The body is orange, spotted with black. The female deposits her eggs upon the leaf of a gooseberry or currant-tree in summer, and from these little looping caterpillars come forth in



September, and surviving the winter, begin to feed again upon the leaves as soon as these open in the spring. They are full-grown towards the end of May, and enter the chrysalis state between that time and the end of June. In this state they remain for about three weeks,

and then the perfect moth comes forth. The caterpillar is yellowish white, with an orange stripe, more or less complete, on each side, and with numerous black spots, the largest on the back. The chrysalis is yellow at first, but afterwards black, with orange circles round the pointed end. The caterpillar prefers the leaves of the gooseberry and red currant; but, after stripping these to their very stalks, it will feed upon those of the sloe, peach, and almond. The best method of getting rid of this insect is to gather up the fallen leaves, together with a little of the surface soil, from beneath the bushes in winter, and burn them, by which means the caterpillars (then in a dormant state) are destroyed. A ring of ashes and tar placed round each gooseberry stem, at a short distance from it, in spring, will prevent caterpillars reaching it to feed upon the young leaves.

A'bricock. An old mode of spelling Apricot.

Abro'ma. (From *a*, not, *broma*, food; on account of its deleterious qualities. Nat. ord., *Sterculiaceæ*.)

Stove evergreen trees. Seeds in March in heat; or cuttings of half-ripe wood, April, in strong heat, under a bell-glass.

- A. angu'sta*. 10. Purple. August. E. Ind. 1770. B. R. t. 518.
- *fastuo'sa*. 10. Purple. June to October. N. S. Wales. 1800. Jacq. Vind. vol. 3, t. 1.
- *latifo'lia*. B. M. t. 6546.
- *sinuo'sa*. Madagascar. 1884.

Abro'nia. (From *abros*, delicate; its involucre being so. Nat. ord., *Nyctagineæ*. Allied to *Mirabilis*.)

Half-hardy perennial trailers. Young cuttings in spring in sandy soil. Seeds in spring in hot-bed, or in autumn in cold frame, and planted out in May.

- A. fra'grans*. 1. White. Rocky Mountains. 1865. Night blooming. B. M. t. 5544.
- *latifo'lia*. 1½. Yellow. August. N. W. America. B. M. t. 6546. Syn., *A. arenaria*.
- *melli'fera*. ½. Orange. July. California. 1828. B. M. t. 2879.
- *pulche'ra*. ½. Pink. July. California. 1848.
- *ro'sea*. ½. Rose. California. 1847.
- *umbellata*. ½. Pink. April and May. California. 1823.

A'brus. Wild Liquorice. (From *abros*, delicate; the leaves being soft and delicate. Nat. ord., *Leguminosæ*.)

Deciduous stove climber. Cuttings in sand under a glass. Seeds in heat. The seeds are used for rosaries, also as weights, called *Retti*, whence (according to some authorities) comes the word *carat*. It is also a reputed weather plant.

- A. precato'rius*. 12. Pale purple, or varying from rose to white. Native of India, now cultivated in the W. Indies and other tropical countries.

Abu'ta. (Native name. Nat. ord., *Melastomaceæ.*)

Stove evergreen climber. Mixture of loam and peat. Cuttings in sand in heat.

A. rufescens. 10. Grey outside, purple inside. March. Cayenne. 1820.

Abu'tilon. (Arabic name for a plant like a Mallow. Nat. ord., *Malvaceæ.*)

Greenhouse evergreen shrubs. Cuttings of young wood, spring and autumn, in sand, under a close frame or a glass. Light turfy loam, peat, and sand.

A. aurantiacum. Orange. Brazil.
— *Bedfordianum.* 15. Yellow and red. November. Brazil. 1838. B. M. t. 3892.

— *braziliense.* G. C. 1882, vol. 18, p. 498.

— *Darwinii.* 4. Orange-red, veins blood-red. April. S. Brazil. 1871. B. M. t. 5917. There are many handsome varieties of this.

— *esculentum.* Yellow. Brazil. 1880.

— *floribundum.* Orange-red. Rev. Hort. 1881, p. 350.

— *graveolens.* 6. Orange and red. E. Ind. 1842. Stove.

— *insigne.* White and carmine. January. New Grenada. Pax. Fl. Gard. vol. 1, p. 93, f. 65.

— *integerrimum.* 14. Yellow. May. New Grenada. Stove. B. M. t. 4360.

— *megapota micum.* 3. Yellow, with scarlet calyx. Spring. Rio Grande. 1864. Syn., *A. veillarimum.*

— *pæoniiflorum.* Pink. January. Brazil. 1845. B. M. t. 4170.

— *pulchellum.* 8. White. May. N. S. Wales. 1821.

— *rufinerve.* Pale yellow. August. Rio Janeiro. 1845.

— *striatum.* 10. Orange and red stripes. Continually blooming. Brazil. 1837. B. M. t. 3840. In Hampshire and south of England, large old plants flower freely turned out under a south wall, being there all but hardy.

— *Thomsoni.* Leaves green, mottled with yellow and cream-white. 1868. Rev. Hort. 1885, p. 324.

— *venosum.* Orange and red stripes. July. B. M. t. 4463.

— *vitiflorum.* 6. White. July. Chili. 1837. This is more hardy than the other species. B. M. t. 4227.

Abbyssinian Primrose. *Primula Boveana.*

Acacallis. (Derivation uncertain. Nat. ord., *Orchidaceæ.*)

For cultivation, see AGANISIA.

A. cyanea. 1. Light blue; lip blue with pale veins. Brazil. Syn., *Aganisia cyanea.* Lindenia, t. 110.

Acacia. (From *akazo*, to sharpen, on account of the prickliness of the species first noticed. Nat. ord., *Leguminosæ.*)

This genus is composed almost exclusively of greenhouse or stove shrubs and trees, variable in habit and leaves. Sandy loam and turfy peat; cuttings of the shoots taken off at a joint, in sand and peat, under a glass, in bottom-heat. Seeds; this is the best mode of propagating them. Sow in a slight hotbed in February or March; soak the seeds in warm water for several hours before sowing. Although the Acacias are all more or less beautiful, yet most of them are so seldom seen in cultivation, that

we have omitted great numbers. Those marked thus * are most desirable.

STOVE SPECIES.

- A. acanthocarpa.* See *Mimosa acanthocarpa.*
— *acapulcensis.* See *Lysoloma acapulcensis.*
— *arabica.* 12. White. July. Egypt. 1596. Syn., *A. vera.* Gum Arabic.
— *Bancroftiana.* See *Cesalpinia bijuga.*
— *brachyacantha.* See *Mimosa acanthocarpa.*
— *burmannia* 20. 6. Ceylon. 1818.
— *cæsia.* 20. Yellow. E. Ind. 1773. Syn., *A. Intsia.*
— *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 principles, useful for tanning. Bent. and Tr. t. 95.
— *centrophylla.* 20. White. Jamaica. 1818.
— *ceratonia.* See *Mimosa ceratonia.*
— *chrysostachys.* See *Piptadenia chrysostachys.*
— *concinna.* 20. White. E. Ind. 1823.
— *Concordiana.* 12. E. Ind. 1818.
— *copallina.* 20. 1825.
— *cornigera.* See *A. spadicigera.*
— *coranilloflora.* 10. N. Amer. 1817.
— *diptera.* See *Prosopis juliflora.*
— *dumosa.* See *A. latrosum.*
— *eburmea.* 5. Yellow. E. Ind. 1792.
— *edulis.* See *Prosopis edulis.*
— *farnesiana.* 20. S. Amer. 1824. Syn., *A. leptophylla.*
— *ferruginea.* E. Ind. 1818.
— *filicina.* 20. Mexico. 1825.
— *formosa.* See *Calliandra formosa.*
— *frondosa.* See *Leucaena glauca.*
— *fruticosa.* See *Piptadenia laza.*
— *giraffæ.* 40. Cape of Good Hope. 1816. Camel-thorn.
— *grata.* See *Piptadenia macrocarpa.*
— *guayaquilensis.* 10. Guayaquil. 1818.
— *guianensis.* See *Stryphnodendron guianense.*
— *hæmatoxylon.* 20. Yellow, white. Cape of Good Hope. 1816.
— *heteromalla.* Yellow. June. Australia. 1818.
— *Intsia.* See *A. cæsia.*
— **Jacarandæa.* 20. Yellow, white. S. Amer. 1825.
— *kalkora.* 45. E. Ind. 1818.
— *kermesina.* Purple.
— *latisiliqua.* See *Lysoloma latisiliqua.*
— *latrosum.* 20. E. Ind. 1818. Syn., *A. dumosa.*
— *laurifolia.* 4. Yellow. May. Tanna. 1775.
— *lebbeek.* See *Albizia lebbeek.*
— *lentisifolia.* 20. Mexico. 1824.
— *leprosa.* Yellow. Australia. 1817. B. R. t. 1441.
— *tenuifolia.* 1833.
— *leptophylla.* See *A. farnesiana.*
— *leucophæa.* 12. Pale yellow. E. Ind. 1812. Bedd. Fl. Syl. t. 43.
— *longiflora.* 1884.
— *luccida.* 40. E. Ind. 1820.
— *macranthodes.* 20. Jamaica. 1820.
— *marginatum.* 10. Yellow. E. Ind. 1820.
— *microphylla.* See *Piptadenia peregrina.*
— *nudiflora.* 30. White. 1823. Syn., *A. Rohriana.*
— *odoratissima.* Syn., *Albizia odoratissima.*
— *oligophylla.* 4. Yellow. 1817.
— *pilo* 30. White. Jamaica. 1800.
— *pinna* 20. See *A. tamarindifolia.*
— *plumosa.* 20. Yellow. A climber. B. M. t. 3366.
— *portoricensis.* See *Calliandra portoricensis.*
— *præmorsa.* 6. Yellow. 1818.
— *pulcherrima.* Syn., *Stryphnodendron floribundum.*
— *quadrangularis.* Syn., *Calliandra tetragona.*
— *riparia.* 10. W. Ind. 1820. A climber. Syn., *A. sarmentosa.*

- A. Rohria*'na. See *A. nudiflora*.
 — *Roscii*. 40. 1822.
 — *sarmentos*'sa. See *A. riparia*.
 — *scandens*. See *Parkia scandens*.
 — *semicorda*'ta. 40. E. Ind. 1820.
 — *Senega*'l. 30. White. W. Africa. 1823. Bent. and Tr. t. 94.
 — *Serissa*. 20. E. Ind. 1822.
 — **spacidi*'gera. 15. Pale yellow. S. Amer. 1692. Syn., *A. cornigera*.
 — *specio*'sa. See *Albizzia lebeck*.
 — *spi*'ni. 15. Red, yellow. Guadeloupe.
 — *stipula*'ta. See *Albizzia stipulata*.
 — *su*'ma. 10. E. Ind. 1820. Syn., *A. Wallichiana*.
 — *tamarindi*'folia. 4. White. W. Ind. 1774. Jacq. H. Schomb. t. 396. Syn., *A. pinata*.
 — *tomento*'sa. 20. E. Ind. 1816.
 — *trich*'des. See *Leucena trichodes*.
 — *va*'ga. 40. White. Brazil. 1818.
 — *veni*'sta. See *Calliandra portoricensis*.
 — *vera*. See *A. arabica*.
 — *vir*'scens. 20. S. Amer. 1829.
 — *Wallichia*'na. See *A. Suma*.

GREENHOUSE SPECIES.

- A. abietif*'na. See *A. limifolia*.
 — **aff*'nis. 5. Yellow. May. Australia. 1822. Green Wattle Mimosa.
 — *ala*'ta. 6. Yellow. May. Australia. 1803. B. R. t. 396.
 — *ame*'na. 3. Yellow. May. Australia. 1820.
 — *angula*'ta. See *A. discolor*.
 — *angustifo*'lia. See *A. longifolia*, var. *floribunda*.
 — *argyrophyl*'la. See *A. brachybotrya*.
 — **arma*'ta. 10. Yellow. May. Australia. 1803. B. M. t. 1653. Syns., *A. hybrida* and *A. tristis*.
 — *a*'spera. 4. Yellow. May. Australia. 1824. Syns., *A. Ausfeldii* and *A. densifolia*.
 — *bifo*'ra. 3. Yellow. May. Australia. 1803.
 — *binerva*'ta. 8. Yellow. May. Australia. 1824.
 — *brachybot*'rya. 8. Yellow. April. Swan River. B. M. t. 4384. Syn., *A. argyrophylla*.
 — *brevisfo*'lia. 3. Yellow. May. Australia. 1820. Perhaps the same as *A. lunata*.
 — *bre*'vipes. See *A. Melanoxydon*.
 — *buzif*'olia. 4. Yellow. April. Australia. 1824. Ic. Pl. t. 164.
 — *calamifo*'lia. Yellow. May. Australia. 1823. B. R. t. 839.
 — *canalicula*'ta. Yellow. May. Australia. 1824.
 — *calastrifo*'lia. A variety of *A. myrtifolia*.
 — *cilia*'ta. See *A. strigosa*.
 — *cinera*'scens. See *A. glaucescens*.
 — *cochlea*'ris. 4. Yellow. May. Australia. 1818. Pax. Fl. Gard. 2, p. 57, f. 164.
 — *conf*'erta. Yellow. April. Australia. 1824.
 — *coria*'cea. 5. Yellow. May. Australia. 1825.
 — *crassica*'rpa. 6. Yellow. April. Australia. 1824.
 — *cultra*'ta. 15. Yellow. April. Australia. 1820. Ic. Pl. t. 170. Syn., *A. cultriformis*.
 — *cune*'ta. Yellow. April. Swan River. 1837.
 — *cuspid*'ta. See *A. diffus*'sa.
 — *cyanophyl*'la. Yellow. April. Swan River. 1838.
 — *Cyclo*'ps. 4. Yellow. May. Australia. 1824.
 — *cycno*'rum. See *A. obscura*.
 — *Daviesia*'folia. 6. Yellow. June. Australia. 1817.
 — **dealba*'ta. 10. Yellow. May. Australia. 1823. B. C. t. 1923. Silver Wattle.
 — **deci*'piens *praemo*'rsa. 3. Yellow. May. Australia. 1830.
 — **decu*'rrens. 6. Yellow. June. N. S. Wales. 1790. B. R. t. 371.
 — *densif*'olia. See *A. aspera*.
 — *denti*'fera. Yellow. April. Swan River. 1839. Maund Bot. 4, t. 179.
 — *depe*'ndens. See *A. longifolia*, var. *mucronata*.
 — *det*'tinens. 3. Yellow. May. Australia. 1823.
 — *A. diffu*'sa. Yellow. May. Tasmania. B. R. t. 634. Syn., *A. cuspidata*.
 — **Dillwynia*'fo'lia. 3. Yellow. May. Australia. 1823.
 — *di*'ptera *erio*'ptera. Yellow. September. Swan River. 1840. B. M. t. 3939.
 — *di*'scolor. 10. Yellow. May. N. S. Wales. 1784. Syn., *A. angulata*.
 — *divarica*'ta. See *Lysoloma Schiedeana*.
 — **dolabrifo*'rmis. 6. Yellow. June. Australia. 1814.
 — *Drummo*'ndii. 10. Yellow. April. Swan River.
 — *echi*'nula. See *A. juniperina*.
 — *elonga*'ta. 6. Yellow. May. Australia. 1824. B. M. t. 3337.
 — *emargina*'ta. See *A. stricta*.
 — *erica*'rpa. Pale yellow. April. Australia. 1845.
 — *erioda*'da. Yellow. June. Australia. 1849.
 — *Esterha*'zia. 4. Yellow. May. Australia. 1824.
 — **falca*'ta. 6. Yellow. May. N. S. Wales. 1790. B. C. t. 1115.
 — *falcifo*'rmis. See *A. penninervis*, var. *falciformis*.
 — *floribu*'nda. See *A. longifolia*, var. *floribunda*.
 — *glau*'ca. See *Leucena glauca*.
 — *glauce*'scens. 5. Yellow. May. N. S. Wales. Syns., *A. cinerascens* and *A. homomalla*.
 — *gra*'ndis. See *A. pulchella*, var. *grandis*.
 — *grave*'olens. See *A. verniciflua*.
 — *gummi*'fera. 30. Guinea. 1823.
 — *hastru*'la. 4. Yellow. May. Australia. 1824. B. M. t. 3341.
 — *heteraca*'ntha. 15. Cape of Good Hope. 1816.
 — *heterophyl*'la. 5. Yellow. May. Australia. 1824.
 — *hispidi*'ssima. See *A. pulchella* var. *hispidissima*.
 — **holoseri*'cea. Yellow. April. Australia. 1820. Syns., *A. leucophylla* and *A. neurocarpa*. Ic. Pl. t. 168.
 — *homoma*'lla. See *A. glaucescens*.
 — **Huege*'lii. Pale yellow. February. Australia. 1846.
 — *humif*'sa. Australia. 1820.
 — *hy*'brida. See *A. armata*.
 — *interme*'dia. See *A. longifolia*, var. *floribunda*.
 — *inter*'tata. See *A. longifolia*.
 — **juniperi*'na. 6. Yellow. N. S. Wales. B. C. t. 398. Syn., *A. echinula*.
 — *Lambertia*'na. See *Calliandra Lambertiana*.
 — *lani*'gera. 6. Yellow. April. Australia. 1824. B. M. t. 2922.
 — *Lau*'si. N. S. Wales.
 — *leptoca*'rpa. 6. Yellow. April. Australia. 1821.
 — *leptoneu*'ra. 6. Yellow. April. Swan River. B. M. t. 4350.
 — *leucophyl*'la. See *A. holosericea*.
 — *ligula*'ta. See *A. salicina*.
 — *linea*'ris. 3. Yellow. May. N. S. Wales. 1820. B. C. t. 595. Syn., *A. longissima*.
 — *limif*'olia. 4. Yellow. May. N. S. Wales. 1790. Syns., *A. abietina* and *A. discolor*.
 — *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*.
 — **Sop*'horae. 10. Yellow. May. Tasmania. 1805. Syn., *A. Sophora*.
 — *longi*'ssima. See *A. linearis*.
 — *luna*'ta. 2. Yellow. April. N. S. Wales. Syn., *A. olea*'folia.
 — *Mei*'nerii. Yellow. May. S. W. Australia.
 — *melano*'xydon. 6. Yellow. N. S. Wales. B. M. t. 1659. Syn., *A. brevipes*.
 — *mo*'l'lis. See *Albizzia Julibrissin*.

- A. myrtifolia*. 3. May. N. S. Wales. 1789. B. M. t. 302.
 — *celastrifolia*. 6. Yellow. May. Swan River. 1842.
 — *Nénu*. See *Albizzia Julibrissin*.
 — *ni'gricans*. 6. Yellow. April. King George's Sound. B. M. t. 2188.
 — *obscu'ra*. 2½. Yellow. Swan River. 1852. Syn., *A. cynororum*.
 — *oleosifolia*. See *A. lunata*.
 — *oxycedrus*. 10. Yellow. May. N. S. Wales. B. M. t. 2928.
 — *pennine'ris falcifórmis*. 6. Yellow. May. Australia. 1818. Syn., *A. falciformis*.
 — *pentadé'nia*. 10. Yellow. May. N. S. Wales. B. R. t. 1521.
 — *platyphylla*. 10. Yellow. June. Australia. 1820.
 — *pulche'lla gra'ndis*. Golden yellow. March. Australia. 1846. Syn., *A. grandis*.
 — *hispidi'ssima*. 3. Yellow. Swan River. 1800. B. M. t. 4688. Syn., *A. hispidissima*.
 — *Ricea'na*. Yellow. May. Tasmania. Maund Bot. t. 135.
 — *Richards'ni*. 10. Yellow. June. Australia. 1822.
 — *ruscifolia*. See *A. verticillata latifolia*.
 — *salici'na*. Yellow. March. N. S. Wales. 1818. Syn., *A. ligulata*.
 — *serica'ta*. Yellow. April. Australia. 1820.
 — *S'i'msi*. Yellow. April. Australia. 1819.
 — *S'iphora*. See *A. longifolia*, var. *S'iphora*.
 — **spectabi'lis*. Yellow. April. N. S. Wales. 1837. B. R. 1843. t. 46.
 — *squam'a'ta*. Yellow. April. Australia. 1836. Ic. Pl. t. 367.
 — *stenophylla*. Yellow. March. N. S. Wales. 1818.
 — *stric'ta*. 2. Yellow. March. N. S. Wales. 1790. B. M. t. 1121. Syn., *A. emarginata*.
 — *strigo'sa*. 4. Yellow. W. Australia. Syn., *A. ciliata*.
 — *strombuli'fera*. See *Prosopis strombulifera*.
 — *suave'olens*. 4. Yellow. April. N. S. Wales. 1790. B. C. t. 730.
 — *subula'ta*. 4. Yellow. May. Australia. 1824.
 — *sulca'ta*. 2. Yellow. July. Australia. 1803. B. R. t. 928.
 — **taxifolia*. 4. Yellow. May. Australia. 1823.
 — *trapezo'i'des*. 4. Yellow. April. Australia. 1840.
 — *trinerv'a'ta*. 6. Yellow. April. Australia. 1820.
 — *tristi's*. See *A. armata*.
 — *umbella'ta*. Yellow. April. Australia. 1819.
 — *uncina'ta*. See *A. undulatifolia*.
 — *uncinophylla*. 7. Yellow. April. Swan River.
 — *undulatifolia*. 4. Yellow. May. Australia. 1824. B. M. t. 3394. Syn., *A. uncinata*.
 — *urophylla*. Pale yellow. April. Swan River. 1836. B. M. t. 4573.
 — *vernici'flua*. 6. Yellow. April. Australia. 1818. B. M. t. 3266. Syns., *A. graveolens* and *A. virgata*.
 — **verticilla'ta*. 10. Yellow. April. Tasmania. 1780. B. C. t. 535.
 — *angu'sta*. 10. Yellow. April. Australia. 1780.
 — **latifolia*. 10. Yellow. April. Australia. 1780. Syn., *A. ruscifolia*. B. M. t. 3195.
 — *vesti'ta*. 6. Yellow. June. Australia. 1820. B. R. t. 698.
 — *vimina'lis*. Yellow. April. Australia. 1820.
 — *virga'ta*. See *A. vernici'flua*.
 — *viridira'mis*. See *Xerocladia Zeyheri*.
 — *visci'dula*. Extra-tropical E. Australia. Gfl. t. 1109.
 — *vomerifórmis*. Yellow. April. Australia. 1818.

ACÆ'na. (From *akaina*, a thorn; on account of the slender spines on the

calyx. Nat. ord., *Rosaceæ*. Allied to *Poterium*.)

Hardy perennial sub-shrubs, with pinnate or pinnatifid leaves, and heads of inconspicuous flowers. Suitable for rock-work. Divisions, seeds.

- A. microphylla*. ½. Green. Summer. New Zealand. Syn., *A. Novæ Zelandiæ*. A very beautiful plant, furnished with bunches of crimson spines.
 — *ovalifolia*. ¾. Green. Summer. Chili. 1868.
 — *pinnati'fida*. 1. Green, stamens purple. May. Chili. 1828. B. R. t. 1271.
 — *pulche'lla*. Leaves bronzy.
 — *sanguis'rbæ*. New Zealand.

Aca'lypha. (From *akalepe*, a nettle. Nat. ord., *Euphorbiaceæ*.)

Stove, ornamental-leaved shrubs, with inconspicuous flowers. Cuttings in sandy soil under glass in spring.

- A. Macfesa'na*. Leaves red, blotched with bronzy-crimson. 1877. Rev. Hort. 1882, p. 288.
 — *macrophylla*. Leaves bluish-green and crimson. 1876.
 — *mus'ica*. Leaves bronzy-green, variegated with orange and coppery-red. Polynesia. 1877.
 — *obova'ta*. Leaves green or bronzy, with cream or crimson margins. S. Sea Islands. 1884.
 — *to'rt'a*. 1 to 2. Leaves contorted, olive-green. Samoa.
 — *Wilke'ta'na*. Leaves stained coppery and red. New Hebrides. 1866. Syn., *A. tricolor*.
 — *marginata*. Leaves large, olive-brown, margined with rosy-carmine. Fiji Island. 1875.

Aca'mpe. (From *akampes*, inflexible; in allusion to their very brittle, inflexible flowers. Nat. ord., *Orchidææ*; Tribe, *Vandææ*, Sub-tribe, *Sarcantheææ*. Allied to *Saccolabium*.)

Epiphytal orchids, requiring stove temperature. For cultivation, see ORCHIDS.

- A. denta'ta*. Whitish-yellow, blotched with brown. Sikkim, Moulmein. 1873.
 — *multifló'ra*. Yellow, crimson. China. Syn., *Vanda multiflora*.
 — *papillo'sa*. Yellow, spotted red, lip whitish. August. India. Syn., *Saccolabium papillosum*. B. R. t. 1552.

Acanthephi'ppium. (From *acantha*, a thorn, and *ippion*, a horse; but why, is not apparent. Nat. ord., *Orchidææ*.)

Sandy peat in a rough state; propagation by pseudo-bulbs as soon as growth commences. See ORCHIDS.

- A. bi'color*. Yellow and red. June. Ceylon. 1833. B. R. t. 1730.
 — *Curti'sii*. Light rose, yellow, white, purple. Malay Archipelago.
 — *java'nicum*. Crimson, rose. August. Java. 1844. B. M. t. 4492.
 — *strid'tum*. White-striped. June, Nepal.
 — *sythet'ense*. White. June. Sylhet. 1837.

Acantho'dium. See *Blepharis*.

Acantholi'mon. (Derivation not stated, and uncertain, probably meaning prickly *Statice*. Nat. ord., *Plumbaginææ*. Allied to *Statice*.)

Hardy evergreen perennials of dwarf tufted habit, with narrow prickly-pointed leaves. Re-

quire a dry soil. Cuttings in autumn, layers in spring, seeds.

- A. acerosum*. Armenia. Syn., *Statice acerosa*.
— *gluma'ceum*. $\frac{1}{2}$. Pink. Asia Minor. 1851.
Fl. Ser. t. 677. Syn., *Statice Ararati*.
— *venustum*. $\frac{1}{2}$. Pink. Cilicia. 1873. Rev.
Hort. 1866, p. 451.

Acanthomínta. (From *akantha*, a thorn, *minthe*, mint. Nat. ord., *Labiatae*.)

Half-hardy border annual. Seeds sown in frame in spring.

- A. ilicifolia*. Purple, yellow, white. July. California. 1883. B. M. t. 6750.

Acanthone'ma. (From *akantha*, a spine, and *nema*, a filament; the filaments of the two lower stamens are produced into a spine-like process behind the anther. Nat. ord., *Gesneraceae*. Allied to *Streptocarpus*.)

Stove perennial herb, with the habit of *STREPTOCARPUS*. Seeds. Rich sandy loam, with a little peat. Shade and moisture.

- A. strigosum*. $\frac{1}{2}$. Deep purple, with whitish tube. Fernando Po. 1862. B. M. t. 5339.

Acanthopanax.

- A. variegatum*. 1884.

Acanthophœnix. (From *akantha*, a spine, and *phœnix*, the Date Palm. Nat. ord., *Palmaceae*. Allied to *Areca*.)

Palms, with thorny stems. For cultivation, see *ARECA*.

- A. erinita*. Seychelles. 1868. Fl. Ser. t. 1706.
— *rubra*. Madagascar. 1861. Syns., *Calamus dealbatus* and *C. Verschaffeltii*.

Acanthorhiza. (From *akantha*, a spine, and *rhiza*, a root; the stem is furnished with ascending spiny rootlets. Nat. ord., *Palmaceae*.)

Stove Palms. For cultivation, see *THRINAX*.

- A. aculeata*. Mexico. 1864. Syn., *Chamaerops stauracantha*. Kerch. Palm. t. 24.
— *Wallisii*. Tropical America. 1879. Gfl. t. 977, f. 2.
— *Warszewiczii*. Chiriqui. Gfl. t. 860, f. 3.

Acanthostachys. See *Ananas*.

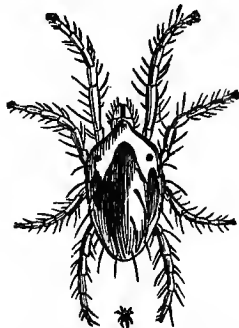
Acanthus. Bear's Breech. (From *akantha*, a spine; some being prickly. Nat. ord., *Acanthaceae*.)

Herbaceous ornamental-leaved perennials. Seeds, and root division in autumn or spring; light, rich garden-soil. The hardy species are very effective as isolated tufts on lawns.

- A. capensis* and *carduifolius*. See *Blepharis*.
— *Ca'roti-Alexandri*. 1- $\frac{1}{2}$. White, rosy. Greece. 1886.
— *hispanicus*. 2. White. August. Spain. 1700.
— *longifolius*. $\frac{3}{4}$ to 5. Purple-rose. Dalmatia. 1899. Stove species.
— *molle*. 3. White. August. Italy. 1548. The leaves of this are said to have given rise to the Corinthian style of architecture. Sibth. Fl. Gr. t. 610.
— *montanus*. Rose. W. Africa. 1865. B. M. t. 5516. Stove species.
— *niger*. 3. White. August. Portugal. 1759.
— *spinosissimus*. 3. White. August. South of Europe. 1629.
— *epinosus*. 3. White. August. Italy. 1629.

A'carus. The Mite. Those most frequent in our gardens are the following:

A. tellarius. The Red Spider. This is one of the gardener's greatest pests,



though so small as to be scarcely visible to the naked eye; yet when a plant is much infested by it, it has the appearance of being scorched. Colour sometimes yellowish, at others brown, but oftener a dull red; on each side of its back is a blackish spot. In November it may be found under the bark of the lime-tree; but at all times it is to be found in greenhouses and hothouses that have been kept too hot and dry. In the summer-time it may be found, occasionally in myriads, upon the under sides of the leaves of kidney-beans and limes. Even the apple, pear, and plum suffer much from its ravages, as well as various in-door plants. The injury their occasion by sucking chiefly the elaborated sap, and by their webs embarrassing the breathing of the plant through the pores of its leaves, is told by the brown colour which these assume. To destroy these insects in the greenhouse, or hothouse, or cucumber-frame—for they attack this plant also—there is no plan so effectual as heating the hot-water pipes of the houses, or having hot-water plates, filled with boiling water, placed in the frames, sprinkling upon them flowers of sulphur, which begin to vaporize at a heat of 170 deg., and then shutting up the houses or frames. The vapour of sulphur is fatal to these insects where the air is thoroughly impregnated with it; and the work of destroying them is completed by syringing the infested plants with water, containing rather frequently the operation. This last is the most practical remedy to plants in our borders, unless they can be covered over so that the fumes of the sulphur may be con-

finer whilst the sulphur is volatilized over a hot-water plate. Potted plants may be submitted to the vapour of sulphur in a similar way; but in every instance be cautious that the sulphur does not burn, or you will kill your plants. The vapour of spirit of turpentine is said to be as effectual as sulphur. On walls, the best plan is to beat up soft soap in warm water, three ounces to the gallon; and to add as much finely-dissolved clay as will make the whole a thick paint. To this add three or four handfuls of sulphur, and keep the mixture well stirred whilst applying it. Let it be daubed on every open space of walling the brush can reach; and, if colour is an object, the glaring yellow can be readily subdued by adding plenty of soot, which by some is considered a necessary ingredient. A similar mixture may be daubed over the stems of ordinary fruit-trees, choosing in this, as well as in the former, the beginning of April for the operation. Most good gardeners mix a considerable quantity of sulphur with the lime-wash which is applied to hot-house walls.

A. holosericeus is another species, distinguishable by an unscinted eye chiefly by their scarlet colour. To destroy them there is no plan equal to subjecting them to the vapour of sulphur.

A. hortensis. The Garden Mite. Thorax ochreous, abdomen white; has been found upon the roots of the cucumber, upon which it is said to prey. We believe it to be the same *Acarus* often so abundant upon the root of cabbages affected with the Ambury.

A. geniculatus is a minute, brownish-red, shining mite, congregating, during spring, in prodigious numbers upon the bark of the plum and other fruit trees, near the base of the small branches, and looking like a gummy exudation. They all injure the plants they infest by sucking their juices; and, where the fumes of sulphur cannot be applied, as to the stems of trees, and to the soil, we recommend an application of spirit of turpentine, or gas ammoniacal liquor.

Acclima'tiza'tion is rendering a plant capable of yielding the production desired from it, in a climate differing from that in which it is a native. In our climate it is usually required to enable a plant to endure lower temperatures than those to which it has been accustomed; and this, though most are intractable, is more easy than inducing the natives of colder regions to live in our latitudes. When a new plant

arrives from a tropical country it is desirable to use every precaution to avoid its loss; but so soon as it has been propagated from, and the danger of such loss is removed, from that moment ought experiments to commence, to ascertain whether its acclimatization is attainable. This should be done, because the nearer such a desirable point can be attained the cheaper will be its cultivation, and, consequently, the greater will be the number of those who will be able to derive pleasure from its growth. Hence it is very desirable that an extended series of experiments should be instituted, to ascertain decisively whether many of our present greenhouse and stove plants would not endure exposure to our winters if but slightly, or not at all protected. It may be laid down as a rule, that all Japan plants will do so in the southern-coast counties of England; but it remains unascertained to what degree of northern latitude in our islands this general power of endurance extends. Experiment, and experiment only, ought to be relied upon; for we know that the larch was once kept in a greenhouse; and such South American plants as *Tropæolum pentaphyllum* and *Gesnera Douglasii* have been found to survive our winters in our garden-borders; the first in Scotland and Suffolk, and the second in Herefordshire. Many tropical plants, of various orders, have been found to succeed with much less heat during the day, and more especially during the night, than gardeners of a previous century believed to be necessary. Many other plants have passed from the tropics to our parterres, and even to those of higher northern latitudes. The horse chestnut was originally a native of the tropics; but it now endures uninjured the stern climate of Sweden. *Aucuba japonica* and *Pæonia Moutan* have passed from stove to greenhouse, and thence to the open air. Every year renders us acquainted with instances of plants being acclimatized. There is no doubt that all the conifers of Mexico, which flourish there at an elevation of more than 8,000 feet above the sea's level, will survive our winters in the open air. Among these are *Pinus Llaveana*, *P. Teocote*, *P. patula*, *P. Hartwegii*, *Cupressus thurifera*, *Juniperus floccida*, and some others. We have kept *Plumbago Larpentæ* in an open border at Winchester during the severe winter of 1849-50; and we now know that it is quite hardy. In this instance—and the course should be pur-

sued in all other cases—we selected a light soil, thoroughly well drained; and we began early to introduce the plant to our climate by bedding it out in May. As to all plants of shrubby or tree character, there can be little doubt that a proper solidification of the wood—by gardeners termed *ripening*—is the true basis of acclimatization. The way to effect this is by encouraging a somewhat early and free growth, and an early and decided rest. Light, shallow soils, thoroughly drained, necessarily accomplish this, by promoting an earlier root-action, and by exposing the roots more to the influences of the atmosphere, whereby the very droughts of summer become beneficial, by checking luxuriance, and bringing on the resting period betimes. In annual plants, it must be confessed that scarcely so much progress has been made as in those of a woody character. It is not quite plain that our kidney-beans, cucumbers, capsicums, tomatoes, etc., are any hardier than they were a century ago. Such facts, however, should by no means deter those who possess opportunities from trying every new plant as above suggested.

A'cer. The Maple. (*Acer*, hard, or sharp; because the wood was used for lances. Nat. ord., *Sapindaceæ*.)

Nearly all hardy deciduous trees and shrubs, with trivial flowers. Propagated by seeds soon as soon as ripe; layers in autumn, and grafting or budding on the common maple. Cuttings will strike in open ground if inserted in spring or autumn. Sandy loam.

- A. austriacum*. See *A. campestre*, var. *austriacum*.
 — *barbatum*. 15. Green and yellow. April. N. Amer. 1812. Timber.
 — *campestre*. 25. Green and yellow. May. Britain.
 — *austriacum*. 30. Green and yellow. June. Austria. 1812.
 — *colticum*. 25. Green and yellow. April. France.
 — *hebecarpum*. 25. Green and yellow. June. Britain.
 — *lævigatum*. 30. Green and yellow. June.
 — *naumum*. 6. Green and yellow. June.
 — *tauricum*. Leaves larger and less divided.
 — *variegatum*. 25. Green and yellow. May. Britain. Must be grafted or budded.
 — *circinatum*. 30. Green and yellow. April. North West America. 1827.
 — *creticum*. 6. May. Levant. 1752.
 — *dasycarpum*. Green and yellow. April. N. Amer. 1725. Timber. Syns., *A. eriocarpon*, *A. glaucum*.
 — *pulverulentum*. Leaves spotted white; young shoots tipped with red.
 — *digitatum*. Japan. 1864.
 — *dissectum*. Leaves cut into narrow segments, bronzy-red. Japan. 1864.
 — *Douglasii*. See *A. glabrum*.
 — *eriocarpon*. See *A. dasycarpum*.
 — *Ginna'la*. Leaf-stalks and midribs deeply coloured. Sometimes regarded as a variety of *A. tartaricum*.

- A. glabrum*. 15 to 30. Greenish-yellow. June. N. W. America. Syns., *A. Douglasii* and *A. tripartitum*.
 — *glabrum*. See *A. dasycarpum*.
 — *Heidreichii*. Gf. t. 1185.
 — *heterophyllum*. Green and yellow. May. Levant, 1759. Evergreen. Syn., *A. sempervivens*.
 — *ibericum*. 40. Green. Asiatic. Georgia. Yellow. 1826.
 — *insigne*. B. M. t. 6697.
 — *japonicum*. Japan.
 — *vitifolium*. Japan. 1874. Syn., *A. japonicum compactum* of gardens.

There are several other varieties, such as *Federici*, *Gulielmi*, *jucundum*, *polymorphum*, *principis*, *sanguineum*: var. *argenteum* is a garden name for *A. rufinerve albo-limbatum*.

- A. laurifolium*. See *A. oblongum*.
 — *lobatum*. 20. Green. Siberia. 1820.
 — *lobellii*. Five-lobed, slightly heart-shaped.
 — *macrophyllum*. 25. Green. May. N. Amer. 1812.
 — *marmoratum*. Leaves with pale yellow variegation. Japan. 1872.
 — *Micels*. Japan. 1864.
 — *monspessulatum*. 8. Green and yellow. May. France. 1739.
 — *montanum*. 25. Green and yellow. N. Amer. 1750.
 — *Negundo*. See *Negundo fraxinifolium*.
 — *niigrum*. 40. Green and yellow. April. N. Amer. 1812. Timber.
 — *oblongum*. 20. Green and white. Nepal. 1824.
 — *obtusatum*. 40. Green and yellow. May. Hungary. 1825. This is the *neapolitanum* of the Italians, and the *hybridum* of London nurseries.
 — *obtusifolium*. 4. Green and yellow. May. Crete.
 — *opalifolium*. 20. Green and yellow. May. France. 1823.
 — *opulatus*. 50. Green and yellow. May. Italy. 1752.
 — *ornatum*. Leaves dull red, mixed with coppery-red, afterwards greenish-red. Japan. 1867.
 — *palmatum*. 10. Green. Japan. 1820.
 — *atropurpureum*. Japan.
 — *erispum*. Japan. 1871.
 — *dissectum*. 30. Red. May. Japan. 1845.
 — *roseo-pictum*. 1886. Garden variety.
 — *ornatum*. Leaves brownish-red, with yellowish-green midribs. Japan. 1871.
 — *palmatifidum*. Leaves deeply palmately cut; light green. 1875.
 — *reticulatum*. Leaves emerald-green, with dark-green veins. Japan. 1865.
 — *roseo-marginatum*. Leaves light-green, edged rose. Japan. 1875.
 — *sanguineum*. Leaves deep reddish-crimson. 1874.
 — *septemlobum*. Purplish. Spring. Japan. 1864.
 — *pennsylvanicum*. 20. Green and yellow. May. N. Amer. 1755. A variety of this, *striatum*, must be increased by grafting or budding.
 — *pictum*. Temperate Asia. 1879. Syn., *A. colchicum rubrum*.
 — *platanoides* and *persico-platanus*: of these there are numerous garden varieties in cultivation. The best of the former are *aureo-variegatum*, *integrilobum*, *Schwedleri*, *undulatum*, and *variegatum*; of the later *albo-variegatum*, *flavo-variegatum*, and *longifolium*.
 — *platanoides*. 50. Green and yellow. June. Europe. 1683. Timber.
 — *laciniatum*. 30. Green and yellow. June. Europe. 1683. Must be grafted or budded. Timber.

- A. platanoides* Lobeli. 50. Green and yellow. May. Naples.
- *variegatum*. 30. Green and yellow. June. Europe. 1883. Must be grafted or budded.
- *psuedo-platanus*. 50. Green and yellow. April. Britain.
- *purpureum*. Purple. May. 1828.
- *subobovatum*. 50. Green and yellow. May.
- *variegatum*. 50. Green and yellow. April. Britain. Must be grafted or budded.
- *rubrum*. There are two varieties, one with leaves variegated with white, and the other with yellow. 20. Red. April. N. Amer. 1666.
- *rufinerve albo-limbatum*. Green. May. Japan. 1869.
- *saccharinum*. 40. Yellow. April. N. Amer. 1735. Timber. Sugar is made from its sap.
- *negrum*. 40. April. N. Amer. 1812.
- *sempervirens*. See *A. heterophyllum*.
- *Semenovi*. Turkestan. 1879.
- *septemlobum*. Japan. 1864.
- *bicolor*. Leaves variegated with bronzed and rose. Japan. 1874.
- *elegans*. Leaves tipped with red when young. Japan. 1874.
- *marginalatum*. Leaves green, with pale reticulated edges. Japan. 1874.
- *Sieboldianum*.
- *tartaricum*. 20. Green and yellow. May. Tartary. 1759. Timber.
- *Van Volaei*. Greenish. Leaves silvery beneath. Caucasus. 1877.
- *velutinum*.

A'ceras. (From *a*, without, and *keras*, a horn; the lip has no spur. Nat. ord., *Orchidaceæ*. Allied to *Orchis*.)

A. anthropophora, the Green Man-Orchid, is an interesting terrestrial orchid, not uncommon on the chalk in the South of England, and will not thrive in any other soil under cultivation, shade.

A. secundiflora. 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*.)

All hardy herbaceous plants, except *A. cægyptiaca*, which is a greenhouse evergreen shrub. This is propagated by cuttings, and the others by root division, cuttings, and seed. Common soil.

- A. abrotanifolia*. 2. Yellow. July. Levant. 1739.
- *acuminata*. 2. White. August. 1830.
- *cægyptiaca*. 1. Pale yellow. August. Levant. 1640.
- *ageratifolia*. $\frac{1}{2}$. White. May. Greece. 1874.
- *ageratum*. 2. Yellow. September. South of Europe. 1570.
- *albida*. 1. Pale yellow. July. 1819.
- *alpina*. 6 inches. White. September. Siberia. 1781.
- *asplenifolia*. $1\frac{1}{2}$. Pink. July. N. Amer. 1808.
- *atra*. White. August. Austria. 1596.
- *au'rea*. 1. Yellow. July. Levant. 1739.
- *auriculata*. 1. Yellow. July. Asia Minor. 1827.
- *chamæmelifolia*. 9 inches. White. July. France. 1825.
- *coarctata*. 4. Yellow. August. South of Europe. 1816.
- *compacta*. 1. Pale yellow. July. 1808.
- *cre'tica*. 1. White. July. Candia. 1739.
- *cristata*. 6 inches. White. July. Italy. 1784.
- *decolorans*. 1. White, yellow. July. 1798.

- A. decumbens*. 6 inches. Yellow. July. Kamtschatka. 1816.
- *Eupatori'um*. 4. Yellow. July. Caspian shore. 1808. One of the best, continuing long in flower. Syn., *A. filipendula*.
- *falcat'a*. 6 inches. Pale yellow. July. Levant. 1739.
- *filipe'ndula*. G. C. 1881, vol. 16, p. 429. See *A. Eupatori'um*.
- *glomerata*. 1. Yellow. July. Caucasus. 1818.
- *grandiflora*. 1. White. July. Caucasus. 1818.
- *holosericea*. $1\frac{1}{2}$. White. August. Parnassus. 1817.
- *impatiens*. 2. White. August. Siberia. 1759.
- *lana'ta*. 1. White. July. 1804.
- *leptophylla*. Pale yellow. July. Tauria. 1816.
- *macrophylla*. 3. White. July. Italy. 1710.
- *millefolium*. 2. White. August. Britain. Found sometimes with reddish flowers.
- *mongolica*. $1\frac{1}{2}$. White. July. Siberia. 1818.
- *moschata*. 2. White. June. Italy. 1775.
- *myriophylla*. $1\frac{1}{2}$. White. August. 1798.
- *na'na*. 6 inches. White. July. Italy. 1759.
- *no'bitis*. 2. White. Germany. 1640.
- *ochroleuca*. $1\frac{1}{2}$. Pale yellow. August. 1804.
- *odora'ta*. 6 inches. White. July. Spain. 1729.
- *pectinata*. $1\frac{1}{2}$. Pale yellow. August. Hungary. 1801. Thought by some to be the same as *ochroleuca*.
- *ptarmica floreple'no*. 1. White. August.
- *pubescens*. 1. Light yellow. August. Levant. 1739.
- *punctata*. 1. Straw. July. Naples. 1820.
- *recurvifolia*. $1\frac{1}{2}$. White. July. Pyrenees. 1820.
- *rupe'stris*. $\frac{1}{2}$. White. South Italy. 1887. B. M. t. 6905.
- *santolin'a*. 1. Pale yellow. July. Levant. 1759.
- *santolinoides*. 1. White. July. Spain.
- *setacea*. 1. White. July. Hungary. 1805.
- *spectiosa*. $1\frac{1}{2}$. White. August. 1804.
- *squarrosa*. 1. White. July. 1755.
- *tav'rica*. 1. Pale yellow. July. Tauria. 1818.
- *tenuifolia*. 1. Yellow. July. Switzerland. 1658.
- *tomentosa*. 2. Yellow. July. Britain.
- *vermicularis*. $1\frac{1}{2}$. 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., *Gesneraceæ*.)

These are all beautiful, and are stove herbaceous perennials, unless otherwise distinguished in the following list. When done flowering, and the tops die down, allow the tubers to remain in the pots, laid on their sides, where frost and wet cannot reach them, until the latter part of January; then begin to place in a gentle heat; where a steady, moist heat can be maintained. Shade in hot days. Place the pots upon others, inverted, and keep the bottom of the pit moist, closing up early in the afternoon, and giving air, in clear weather, about eight in the morning. This beautiful genus is becoming overloaded with varieties.

- A. amabilis*. White. Mexico.
- *argyrostigma*. White and rose. June. Grenada. This is a hardy herbaceous plant. Not worth growing.
- *atrosanguinea*. $1\frac{1}{2}$. Crimson. August.
- *ca'ndida*. $1\frac{1}{2}$. July. White. Guatemala. 1848.
- *chontale'nsis*. See *Episcia*.
- *coct'nea*. Scarlet. August. Jamaica. 1778. A variety, *major*, is good.
- *cupreata*. Scarlet. July. New Grenada. 1847.
- *Esche'rii*. Purple, crimson. June. Gardens. 1849.

- A. floribunda elegans*. Purple, crimson. October. Gardens. 1848.
 — *formosa*. Rose. September.
 — *glaziniestora*. Buff-spotted. December. Mexico. 1848.
 — *grandiflora*. Pale crimson. October. Mexico. 1842. This is a greenhouse herbaceous plant. A variety of this, *Skinnerii*, is a stove-plant. Guatemala. Shaded scarlet. 1847.
 — *heterophylla*. Scarlet. Van Houtte. July.
 — *hirsuta*. 2½. Rose. September. Guatemala. 1844.
 — *intermedia*. 1. Scarlet. August. Gardens. 1847.
 — *Jauveguisei*. 1. White. Carmine eye, striped. October. Mexico. 1848.
 — *Jayii*. Violet purple. June. Gardens. 1848.
 — *Kleei*. ¾. August. Pink and purple. Guatemala. 1848.
 — *Liepmanni*. 1½. Pale crimson. July.
 — *lilacina*. Lilac. 1880. Syn., *Encodonia lilacinella*.
 — *longiflora*. This is a greenhouse herbaceous plant. Violet. August. Guatemala. 1841. A stove variety, *major*, is good.
 — *alba*. White. October. Guatemala. 1849. Same as *A. Jauveguisei*?
 — *latifolia*. Lilac. Guatemala.
 — *major*. Violet. Guatemala.
 — *magnifica*. 2. Scarlet. New Grenada.
 — *margarita*. White. Central America.
 — *misera*. 1. White and purple. July. Guatemala. 1848.
 — *Mountfordii*. Scarlet. August. Garden. 1847.
 — *multiflora*. 1. Lilac. October. Brazil. 1843.
 — *nagekioides* and *na'na multiflora*, are garden hybrids of 1870.
 — *ocellata*. 1½. Red. July. Panama. 1847.
 — *patens*. 1. Violet. June. Mexico. 1846.
 A small variety of this is not worth growing.
 — *pedunculata*. 2. Scarlet, yellow. June. Guatemala. 1840.
 — *picta*. 1½. Scarlet, yellow. June. Mexico. 1844.
 — *pyropaea*. 1. Crimson. May. Mexico. 1848.
 — *rosea*. 1. Pink. June. Guatemala. 1841.
 — *Skinneri*. 2. Rose. July. 1847.
 — *splendens*. Violet. Guatemala.
 — *Tyrianthina*. 1½. Violet-blue. August. Mexico. 1849.
 — *venusta*. 1½. Purple. July. Hybrid. 1848.
 — *Verschaffeltii*. White. Garden hybrid.
- Achyranthes Verschaffeltii.**
 See *Iresine Herbstii*.
- Acinetia.** (From *akineta*, immovable; the lip being jointless. Nat. ord., *Orchidaceae*.)
 Allied to *Peristeria*. Intermediate or cool house orchids, cultivated in baskets lightly filled with sphagnum and fibrous peat. The flowers grow through the bottom of the baskets.
 — *A. roei*. Yellow. Central America. 1866.
 — *Barkei*. 2. Yellow. May. Mexico. 1837. Pax. Mag., vol. 14, p. 145. Syn., *Peristeria Barkei*.
 — *deusa*. 1½. Golden yellow, speckled red. October. Central America. 1889. B. M. t. 7143.
 — *Hrubyana*. White, purple. New Grenada, 1882.
 — *Humboldtii*. 2. Chocolate and crimson. May. Venezuela. 1841. Syns., B. R. 1843. t. 18, *Peristeria Humboldtii*, and *Angulad superba*.
 — *straminea*. Straw, dotted. Columbia. 1872.
 — *sulcata*. Columbia? 1879.
 — *Wrightii*. See *Laccena spectabilis*.

Acio'tis. (*Akis*, a point, and *ous*, an ear; from shape of petals. Nat. ord., *Melastomaceae*.)

Stove evergreen plants, allied to *Osbeckia*, but may be grown in a warm pit or frame until the spring, and then put into a greenhouse. Cuttings in sand, under a bell-glass; equal parts rich loam and peat.

A. aquatica. 9 inches. White and red. June. S. Amer. 1793. Pots stood in shallow pans of water.

— *discolor*. 1. White and red. June. Trinidad. 1816.

Aciphylla. (From *ake*, a point, and *phyllon*, a leaf; in allusion to the sharply pointed leaf segments. Nat. ord., *Umbelliferae*. Allied to *Angelica*.)

Hardy herbaceous perennials suitable for rock-work; remarkable for their rigid leaves, which are pinnate, and sharp-pointed. There are several species, all equally ornamental, but only three have yet been introduced; all are natives of New Zealand. Seeds. Light soil.

A. Colensoi. 6. White. New Zealand. 1875.

— *Lya'li*. New Zealand. 1889.

— *squarrosa*. 6. White. New Zealand. G. C. 1884, vol. 22, p. 328. The Bayonet Plant.

A'cis. See *Leucoium*.

Acisanthera. (*Akis*, a point; *anthera*, an anther; having pointed anthers. Nat. ord., *Melastomaceae*.)

An evergreen stove-shrub; allied to *Cuphea*; cultivated like *Aciotis*.

A. quadrata. 3. Jamaica. 1804.

Acmadenia. (*Acme*, a point; *aden*, a gland; the anthers having glands. Nat. ord., *Rutaceae*.)

Greenhouse evergreen shrub; allied to *Diosma*. Cuttings of young wood two inches long, planted in sand, under a bell-glass; turfy loam and sand.

A. tetragona. 2. White. June. Cape of Good Hope. 1798. Syn., *Adenandra tetragona*.

Acme'na. See *Eugenia*. *A. floribunda* is most conspicuous from its bright purple berries. *A. ovata* was introduced in 1882.

Acmospo'rium trice'phalum.
 A fungus parasitic on *Cryptomeria japonica*, which see.

Acoka'nthera. (From *akoke*, a mucron, and *anthera*, an anther; the anthers are mucronate. Nat. ord., *Apocynaceae*. Allied to *Carissa*.)

Greenhouse shrubs. Seeds, cuttings in bottom-heat. Any rich, light soil, with top dressings of manure, or occasional watering with manure water. The members of this genus are all very poisonous; a decoction of the bark was used by the Bushmen of South Africa for poisoning their arrows.

A. lycioides. 5. White. Summer. S. Africa. 1824.

— *spectabilis*. 10. White. Spring. Natal. 1872. Syn., *Toxicophlæa spectabilis*. B. M. t. 6359.

— *venenata*. 6. White. S. Africa. 1787. Syn., *Toxicophlæa Thunbergii*. Gfl. 940.

Aconiopteris. (From *akonao*, sharp, and *pteris*, a fern; alluding to the junction of the veins. Nat. ord., *Filices*—*Polypodiaceae*.)

Stove fern. Spores and division of roots.

A. sub-diaphana. 1. St. Helena.

Aconitum. (Being plentiful near *Acona*. Nat. ord., *Ranunculaceae*.)

All hardy herbaceous plants. Many are very beautiful, and will do well in plantations, even if a little shaded by the trees. Division of the roots and seeds; common garden-soil.

TUBEROUS ROOTED.

- A. acuminatum*. 3. Blue. July. Switzerland. 1819.
— acutum. 4. Blue. June. South of Europe. 1821.
— albidum. 3. White. June. Europe. 1824.
— amœnum. 4. Blue. June. South of Europe.
— ampliflorum. 4. Blue. June. Austria. 1823.
— angustifolium. 4. Blue. June. Europe. 1824.
— Bernhardiaenum. 4. Blue. June. Europe. 1824.
— biflorum. $\frac{1}{2}$. Pale blue. June. Siberia. 1817.
— Braueri. 4. Blue. July. Switzerland. 1821.
— calybotryon. 4. Blue. June. South of Europe.
— Caennarum. 3. Purple. August. Austria. 1752.
— cernuum. 3. Blue. July. Switzerland. 1800.
— flexicaule. 3. Blue. July. Switzerland. 1819.
— pauciflorum. 3. Blue. July. Switzerland. 1821.
— ramosum. 3. Blue. July.
— Clusii. 3. Blue. July. Switzerland. 1819.
— commutatum. 3. Blue. June. South of Europe. 1823.
— delphinifolium. $\frac{1}{2}$. Blue. June. N. Amer. 1804.
— elatum. 4. Blue. June. Europe. 1822.
— e-minens. 4. Blue. June. Europe. 1800.
— erioste mon. 4. Blue. June. Europe. 1821.
— erista-chyon. 4. Blue. June. Europe. 1824.
— exaltatum. 6. Blue. June. Siberia. 1819.
— flaccidum. 5. Blue. July. Siberia. 1822.
— Florkeenum. 3. Blue. July. Siberia. 1822.
— bicolor. 3. Blue, white. June. Switzerland. 1801.
— formosum. 4. Blue. June. South of Europe. 1824.
— Frueki. 3. Blue. June. Switzerland. 1825.
— galbotinum. 4. Blue. June. Hungary. 1822.
— gibbiflorum. 4. Blue. July. Caucasus. 1818.
— Gmelini. 4. Blue. July. Siberia. 1821.
— gracile. 2. Blue. July. Switzerland. 1821.
— Hallei. 4. Blue. June. South of Europe. 1821.
— bicolor. 4. Blue. June. Switzerland. 1820.
— hamastrum. 4. Pale blue. July. Italy. 1810.
— hebe-gynum. 3. Purple. July. Switzerland. 1819.
— multifidum. 3. Purple. July. Switzerland. 1819.
— heterophyllum. Greenish-yellow, violet. Himalayas. 1874. Unlike most members of this genus, its roots are not poisonous, being used as a tonic in India, where it is called *Atees*.
— hiensis. 4. Blue. June. South of Europe. 1823.
— Hoepfii. 4. Blue. June. Carinthia. 1823.
— illini. 4. Blue. July. 1821.
— intermedium. 5. Blue. July. 1820.
— inuatum. 4. Blue. July. Europe. 1822.
— japonicum. 6. Flesh. August. Japan. 1790.
— caeruleum. 4. Blue. July. Japan. 1700.

- A. Kœleaenum*. 4. Blue. June. South of Europe. 1820.
— pygmaeum. 2. Blue. June. South of Europe. 1822.
— Kohleri. 4. Blue. June. Europe. 1824.
— laciniatum. 3. Blue. July. Switzerland. 1820.
— latum. 4. Blue. June. South of Europe. 1820.
— laxum. 4. Blue. June. South of Europe. 1820.
— leucanthum. 3. White. June. 1823.
— macimum. 6. Blue. July. Kamschatka. 1823.
— meloetinum. 4. Blue. June. 1821.
— Meyeri. 3. Blue. June. Switzerland. 1825.
— molle. 5. Blue. July. 1820.
— napehrus. 4. Blue. June. Europe. 1596.
 Of this there are numerous varieties, of such as: *bicolor*, *grandifolium*, *pyramidale*, *pyrenaicum*, *rubrum*, and *uncinatum*.
— albus. 4. White. June. Switzerland. 1819.
— rubellus. 4. Blue. June. Switzerland. 1819.
— nastum. 3. Purple. July. Siberia. 1818.
— neomontanum. 3. Blue. July. Europe. 1799.
— neubergerense. 4. Blue. June. South of Europe. 1822.
— nitidum. 3. Blue. June. Switzerland. 1825.
— oligocarpum. 4. Blue. July. Europe. 1823.
— Ottoniaenum. 4. Blue. June. Europe. 1824.
— paniculatum. 3. Pale blue. July. France. 1815.
— plicatum. 3. Blue. June. Switzerland. 1825.
— productum. 1. Blue. July. Siberia. 1821.
— pubescens. 4. Blue. June. Europe. 1824.
— recurvatum. 4. Blue. June. 1824.
— rhynchosanthum. 4. Purplish-blue. July. Switzerland. 1821.
— bicolor. 4. Whitish-blue. July. Switzerland. 1819.
— rigidum. 3. Blue. June. Switzerland. 1825.
— grandiflorum. 3. Blue. June. 1826.
— rostratum. 3. Blue. July. Switzerland. 1810.
— pilosiusculum. 3. Purple. July. Carpathian mountains. 1800.
— Schleicheri. 2. Blue. June. Switzerland. 1821.
— semigaleatum. 1. Blue. July. Siberia. 1818.
— speciosum. 3. Blue. July. 1823.
— Sprengelii. 4. Blue. June. Europe. 1824.
— squarrosum. 4. Blue. August. Siberia. 1822.
— strictum. 4. Blue. June. Siberia. 1824.
— tauricum. 4. Blue. June. Tauria. 1752.
— tortuosum. 6. Purplish-blue. June. 1812.
— toxicum. 3. Blue. June. Switzerland. 1825.
— umbrosum. 3. Blue. July. Switzerland. 1825.
— uncinatum. 2. Blue. July. N. Amer. 1768.
— Michauxiaenum. 2. Blue. July. N. Amer. 1800.
— variegatum. 5. Purplish-white. July. South of Europe. 1597.
— albiflorum. 4. White. July. Switzerland. 1819.
— bicolor. 4. Whitish-blue. July. Switzerland. 1821.
— caeruleum. 4. Blue. July. Switzerland. 1819.
— venustum. 3. Blue. June. Switzerland. 1823.
— virgatum. 4. Blue. June. South of Europe. 1822.
— vohlbile. 6. Blue. July. Siberia. 1799.
— Willdenovii. 3. Blue. June. Europe. 1823.
— zoöetinum. 3. Blue. June. Switzerland. 1825.

FIBROUS ROOTED.

- A. alatum*. 4. White. July. Levant. 1752.
— Anthora. $\frac{1}{2}$. Pale yellow. July. Pyrenees. 1596.

- A. Anthoroideum*. 1½. Pale yellow. July. Jura. 1821.
 — *australe*. 2½. Purple. July. Denmark. 1821.
 — *autumnale*. 1½. Lilac, white. November. N. China. 1846.
 — *barbatum*. 2. Pale yellow. June. Siberia. 1807.
 — *carpathicum*. 2½. Purple. July. Carpathian mountains. 1810.
 — *chineuse*. 4. Blue. September. China. 1833.
 — *cynotonum*. 3. Pale yellow. July. France. 1820.
 — *Decandollii*. 1½. Pale yellow. July. Siberia. 1823.
 — *decorum*. 4. Blue. June. Pyrenees. 1824.
 — *eulophum*. 1½. Pale yellow. June. Caucasus. 1821.
 — *grandiflorum*. 1½. Pale yellow. July. Jura. 1821.
 — *hispidum*. 2. Pale yellow. June. Siberia. 1823.
 — *Jacquini*. 1½. Pale yellow. June. Austria. 1800.
 — *Lamarckii*. 2. Pale yellow. July. Pyrenees. 1817.
 — *laxiflorum*. 3. Pale yellow. July. Switzerland. 1823.
 — *lupicidum*. 2. Pale yellow. July. Europe. 1821.
 — *lycotomum*. 3. Purple. July. Alps. Europe. 1806.
 — *macrophyllum*. 2. Pale yellow. July.
 — *moldavicum*. 5. Purplish. August. Moldavia. 1830.
 — *nemorosum*. 2. Pale yellow. July. Caucasus. 1823.
 — *Nuttallii*. 5. Pale blue. August. N. Amer. 1829.
 — *ochranthum*. 4. Yellow. August. Russia. 1834.
 — *ochroleucum*. 3. Light yellow. July. Caucasus. 1794.
 — *ovatum*. 2½. Purple, green. June. Cashmere. 1839.
 — *Pallasii*. 2. Pale yellow. July. Siberia. 1821.
 — *pyrenaicum*. 4. Yellow. June. Pyrenees. 1739.
 — *retum*. 3. Pale yellow. July. Europe. 1824.
 — *rubicundum*. 2½. Purple. July. Siberia. 1819.
 — *septentrionale*. 4. Blue. July. North of Europe. 1800.
 — *Stoerkianaum*. 4. Blue. August. Austria. 1824.
 — *theriophonum*. 2½. Pale yellow. June. Europe. 1824.
 — *tragetonum*. 2½. Pale yellow. July. Switzerland. 1822.
 — *versicolor*. Blue and white. August. Siberia. 1820. About the best.
 — *vulparyia*. 3. Pale yellow. July. Alps. Europe. 1821.

Aco'ntias. See **Xanthoso'ma.**

A'corus. (From *a*, privative, and *kore*, the pupil of the eye; referring to its medical qualities. Nat. ord., *Aroideae*.)

A small genus of evergreen plants, having sword-like leaves. *A. calamus* is a useful medicinal plant—a native of our marshes. Hardy marsh perennials.

- A. calamus*. 2. June. Britain. Eng. Bot. t. 891.
 — *variegatus*. A handsome garden variety.
 — *terrestris*. 1. June. China. 1822. Sch. Gen. Ar. t. 98.
 — *gramineus*. ½. February. China. 1796.
 — *variegatus*. A garden variety, useful for rockeries.

Acrade'nia. (From *akros*, the top, and *aden*, a gland; there are five glands on the top of the ovary. Nat. ord., *Rutaceae*.)

Cool greenhouse evergreen shrub, with opposite trifoliate, gland-dotted leaves, and clusters of white flowers at the ends of the branchlets. Seeds, cuttings under a bell-glass. Rich loam and leaf-mould.

- A. Frankliniae*. 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 160 square perches, rods, poles, or lugs; and a perch contains 30½ 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 6150 square yards.

Acridocarpus. (From *akris*, a locust, and *karpos*, fruit; on account of some fancied resemblance of the fruit to a locust. Nat. ord., *Malpighiaceae*.)

Handsome evergreen climber, suitable for stove or warm greenhouse. Imported seeds, cuttings in bottom-heat. Rich loam and sand; requires plenty of water, but must have free drainage.

- A. natalitius*. Yellow. July. Natal. 1867. B. M. t. 5738.

Acriopsis. (From *akros*, top, and *opsis*, eye. Nat. ord., *Orchideae*.)

A small genus of pretty stove epiphytal orchids.

- A. densiflora*. Green and pink. Borneo. 1846.
 — *indica*. Ochre and light brown. Wight Icon. t. 1743.

- *javonica*. White, green, and purple. August. Bantam. 1842. Syn., *A. picta*.

Acrocha'ne. (From *akros*, top, and *chaimo*, to gape. Nat. ord., *Orchideae*; Tribe, *Epidendreae*; Sub-tribe, *Dendrobiceae*.)

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

Acrocli'nium. See **Helipterum.**

Acrococ'mia. (From *akros*, top, and *kome*, a tuft; referring to the way the leaves are produced. Nat. ord., *Palmeae*.)

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. Suckers; rich sandy loam. Warm greenhouse.

- A. cubensis*. See *A. lasiospatha*.
 — *fusiformis*. 40. Trinidad. 1731.
 — *globosa*. 20. St. Vincent. 1824.
 — *guianensis*. 30. Demerara. 1824.
 — *horrida*. 30. Trinidad. 1820.
 — *lasiospatha*. Para. 1846. Syn., *A. cubensis*.
 — *minor*. 20. Trinidad. 1820.
 — *sclerocarpa*. 40. W. Ind. 1731. Syn., *A. aculeata*.
 — *tenuifolia*. 30. Brazil. 1824.

Acrony'chia. See **Medicosma.**

Acrope'ra. See **Gongora.**

A. Loddige'sii. B. M. t. 3563. See *Gongora galeata.*

Acro'phorus. See **Davallia.**

Acrophyllum. (From *akros*, top, and *phylon*, a leaf; referring to the way in which the leaves are produced at the summit of the branches above the flowers. Nat. ord., *Saxifrageæ.*)

Cool greenhouse evergreen shrub. Cuttings of young shoots in July; soil, sandy peat and loam.

A. venosum. 6. Pink and white. May. Australia. 1836. B. M. t. 4050. Syn., *A. verticillatum.*

Acro'pteris. (From *akros*, a point, and *pteris*, a fern. Nat. ord., *Filices—Polypodiaceæ.*)

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

A. australis. Brown. Australia.
— canariensis. Brown. Canaries. 1824.
— caudata. Brown. I. of Luzon. 1824.
— falcata. 1. Brown. India. 1843.
— laserpittifolia. Brown. I. of Luzon. 1843.
— oxyphylla. Brown, yellow. I. of Luzon. 1843.
— pellicida. Brown. I. of Luzon. 1843.
— platyphylla. Brown, yellow. Malacca. 1843.
— prismosum. 3. Brown. Jamaica. 1793.
— radiata. Brown. N. Amer. 1793.
— rupestris. 1. Brown. Britain. 1793.
— seabra. Brown. North of Europe. 1844.
— septentrionalis. 3. Brown. Britain. 1844.
— spathulifera. I. of Luzon. 1844.
— varians. I. of Luzon. 1844.

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., *Filices—Polypodiaceæ.*)

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

A. alciocorne. 1. September. N. S. Wales. 1808.
— appendiculatum. 2. W. Ind. 1824.
— asplenifolium. 1. Brown, yellow. July. Brazil. 1833.
— aureum. 4. August. W. Ind. 1815.
— citrifolium. 3. Yellow, brown. September. W. Ind.
— crinitum. 1. July. W. Ind. 1793.
— fimbriatum. Brazil. 1824.
— flagelliferum. 2. E. Ind. 1823.
— fusiforme. 1. Brown, yellow. July. Malacca.
— glandulosum. 1. Jamaica. 1825.
— grande. 6. Moreton Bay. 1823.
— herminieri. Tropical America. 1871.
— juglandifolium. 2. Yellow, brown. August. Surinam. 1832.
— latifolium. 1. Yellow, blue. Jamaica.
— longifolium. 1. August. Jamaica. 1817.
— nicotianifolium. 2. Brown. October. W. Ind.
— pilosellodes. 2. Brown, yellow. July. E. Ind. 1822.
— scolopendrium. 2. Brown. August. E. Ind.
— simplicia. 1. Jamaica. 1793.
— Stenaria. 1. July. Guinea. 1823.
— subdiaphana. Brown. India.

Acrotre'ma. (From *akros*, a point, and *trema*, a perforation. Nat. ord., *Dilleniaceæ.*)

Stove evergreen plants. For culture, see *DOLIO. CAMPUS.*

A. Walkeri. Yellow. June. Ceylon. 1861. B. M. t. 5363. Warm greenhouse.

Acro'triche. (From *akros*, top, and *thrix*, hair; referring to the hairs on the sepals. Nat. ord., *Epacrideæ.*)

Greenhouse evergreen shrubs. Cuttings of young shoots in sandy peat, under a bell-glass, in cool house or frame.

A. divaricata. 3. White. May. Australia. 1824.
— ovalifolia. 3. White. May. Australia. 1823. B. M. t. 3171. Syn., *A. cordata.*

Actæ'a. (From *aktaia*, the elder; referring to the leaves. Nat. ord., *Ranunculaceæ.*)

Hardy herbaceous perennials, useful for rocky or wild garden, shady positions. Propagation by division and seed.

A. spicata. 3. White. May. Britain. Eng. Bot. ed. 3, t. 49.
— rubra.
— nigra.

Actine'lla. (From *aktin*, a ray. Nat. ord., *Compositæ.*)

A. grandiflora. 3. Yellow. Colorado.
— lanata. See *Eriosternum caespitosum.*

Actini'dia. (From *aktin*, a ray; the styles radiate like the spokes of a wheel. Nat. ord., *Ternstroemiaceæ.*)

The species of this genus are ornamental deciduous climbing shrubs, and perfectly hardy; in autumn the leaves of *A. Kolomieta* change to white and red, when it is very handsome and effective, and is especially suitable for trellis-work, or a verandah. Any light soil. Seeds, layers, or cuttings.

A. Kolomieta. White. N. E. Asia. 1880. Rev. Hort. 1874, f. 395.
— polygama. White, Japan. 1870.
— volubilis. White. Japan. 1874. Rev. Hort. 1874, f. 395.

Actinocæ'rupus. See **Damaso'nium.**

Actinole'pis. (From *aktin*, a ray, and *lepis*, a scale. Nat. ord., *Compositæ.*)

A. coronaria. 1. Yellow. California. September. 1839. Syns., *Bæria coronaria* and *Hymenocys californica.* B. M. t. 3828.

Actinome'ris. (From *aktin*, a ray, and *meris*, a part; referring to the radiated aspect of the plants. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ.*)

Hardy herbaceous plants, allied to *Helianthus*, and of easy culture. Propagated by division and seed.

A. alata, with its var. *alba*, and *A. helianthoides.* See *Verbesina.*
— squarrosa. 3. Yellow. July. N. Amer. 1640. Jacq. Vind. t. 110. Syns., *A. procera* and *Coreopsis alternifolia.*

Actinio'pteris. (From *aktin*, a ray, and *pteris*, a fern; the fronds are radiately cut into narrow segments. Nat. ord., *Filices*—*Asplenicee*.)

Beautiful stove ferns, with fan-shaped fronds, cut into narrow segments; the type is somewhat difficult to cultivate, but the following method is given in the *Florist and Pomologist* for 1869. For soil, break up crocks and charcoal in equal parts, and as small as peas, and put with them a good bit of silver sand, and a very small portion of loam and peat, or little bits of turfy loam, but only sufficient to set this rough sharp compost. Half fill the pots with broken crocks, on which place a small bit of sphagnum moss; fill up with the above compost, and plant. Syringe the plants two or threetimes a day, and give plenty of water; the atmosphere must also be kept very moist. In summer keep them in a mean temp. of 78° to 80°, not letting the night temp. fall below 65°; in winter a mean temp. of about 73°, the night temp. not below 60°.

A. radiata. India. 1869. Ic. Pl. t. 975.

— *australis*. Ic. Pl. t. 976.

Actino'tus. (From *actinotos*, meaning radiated, on account of the form of the involucreum. Nat. ord., *Umbelliferae*.)

Greenhouse herbaceous perennials. Seeds and root division; loam and peat. They may be grown in the open air in summer.

A. heli'anthi. 2. White. June. Australia. 1821. B. R. t. 654.

— *leucoc'e'phalus*. Swan River. 1837. Ic. Pl. t. 847.

Acu'leate. Armed with prickles.

Acu'minate. Having along, slender point.

Acu'te. Sharp pointed.

Acy'nos. See **Calami'ntha**.

A'da. (A complimentary name. Nat. ord., *Orchidaceae*.)

Cool stove orchid. Peat and sphagnum in equal parts. Thorough drainage, and plenty of water. Division as soon as growth commences.

A. aurant'aca. Orange. New Grenada. 1864. B. M. t. 5435. There is a variety *mesospinidium*.

Adam's Needle. See **Yu'cca**.

Ada'mia. See **Dichro'a**.

Ada'msia scillo'i'des. See **Puschki'nia**.

A. rotundifo'lia, and *glacialis*. See *Geum*.

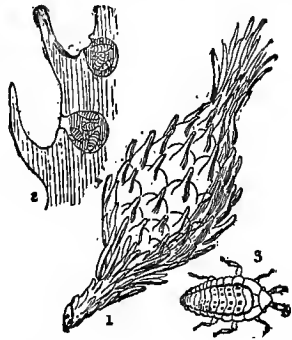
Adanso'nia. (In honour of *Adanson*, a French naturalist, who travelled in Africa. Nat. ord., *Malvaceae*.)

A. digita'ta. White. Senegal. 1724. B. M. t. 2791-2. This tree, known as the *Baobab* or *Monkey-bread*, is a native of the warmer parts of Africa, and is remarkable for the immense diameter, sometimes 30 feet, which its trunk attains in proportion to its height. A second species, *A. Gregorii*, is a native of North Australia.

A'dder's - Tongue. A genus of Ferns. *Ophioglo'ssum*.

Adela'ster albive'nis is probably a species of *Eranthemum*. It is a handsome foliage plant, with leaves of a very dark green, veined with white.

Adel'ges abie'tis. Spruce Gall Chermes. At the ends of the shoots of the Larch, Spruce Fir, and some of the allied species, are often to be found swollen structures, which much resemble miniature cones (Fig. 1). These are galls formed by the Adelges. This insect seems to have two distinct generations, though the connection between the two does not seem to have been thoroughly



worked out. In the first generation the insect is blackish, with a cottony covering. It is of a roundish form, and wingless, with six very short legs, and a long slender sucker, with which it pierces the young buds between the scales, and sucks their juices. The eggs are deposited outside the bud in clusters, and are stalked; from them are developed minute, six-legged, active larvæ, which crawl about over the leaves, and attack the bud; and it is from their attacks, probably united with the sucking of the juices of the bud by the mother insect, that the formation of the gall is caused. In the second generation the female Adelges (Fig. 3, magnified), according to a writer in the *Gardeners' Chronicle*, 1874, n. s. I., p. 635, deposits her eggs in April at the base of the gall, which has already grown to a considerable size; the eggs are yellowish-green or grey. The larvæ are covered with a wool-like secretion; at first they are greenish, afterwards changing to a reddish hue, and have conspicuous dark eyes. Soon after they are hatched, they crawl over the gall, and place themselves in lines along the sutures of its scales, effecting an entrance to the internal cavities of the gall (which are

already formed) by means of small horizontal slits, which, after the entrance of the larvæ, close up and do not open again until the insects are full grown, when the lips of the cavities separate, and the pupæ creep out and become transformed into winged insects. Fig. 2 represents a section through two cavities containing pupæ, magnified. This insect often commits great havoc in Fir plantations, checking growth, and entirely spoiling the beauty of the trees attacked. The only remedy is to cut off the infested branches and burn them.

Adelia. (From *a*, not, and *delos*, visible; in reference to the minute parts of fructification. Nat. ord., *Euphorbiaceæ*.)

Stove evergreen shrubs. Peat and loam; cuttings in sandy loam, after their cut end is dry.
A. acido'ton. 3. Greenish-white. June. Jamaica. 1768.
 — *Berna'rdia*. 6. Green. July. Jamaica. 1768.
 — *ricine'lla*. 6. Greenish-white. July. Jamaica. 1768.

Adelobotrys. (From *adelos*, obscure, and *botrys*, a cluster. Nat. ord., *Melastomaceæ*.)

Stove epiphytes.
A. Linde'na. White, changing to purple. Brazil. 1866.
 — *sea'ndens*. White. Guiana.

Adena'dra. (From *aden*, a gland, and *aner*, the stamen or male organ; referring to the aspect of the anthers. Nat. ord., *Rutaceæ*. This genus was formerly included in *Diosma*, under which name most of the figures cited below will be found.)

Dwarf greenhouse shrubs. Turfy loam. Peat, and sand cuttings of the young tops, in sand under a bell-glass, in cool house. Seed.

A. amœ'na. 2. Red or white. June. Cape of Good Hope. 1798. B. R. t. 553. Syn., *A. acuminata*.
 — *coria'cea*. 2. Pink. June. Cape of Good Hope. 1720.
 — *fra'grans*. 3. Pink. June. Cape of Good Hope. 1812. B. M. t. 1519.
 — *margin'a'ta*. 2. Pink. June. Cape of Good Hope. 1806.
 — *tetra'gona*. See *Acmadenia tetragona*.
 — *umbella'ta*. 2. Pink. June. Cape of Good Hope. 1790.
 — — *specio'sa*. 2. Pink. June. Cape of Good Hope. 1789. There are two forms of this, viz., *multiflo'ra* and *pauciflo'ra*.
 — *unifo'ra*. 1. Pink. June. Cape of Good Hope. 1775. B. M. t. 273.
 — — *linea'ris*. 1. White. June. Cape of Good Hope. 1800.
 — — *pube'scens*. 2. Pink. June. Cape of Good Hope. 1786. Syn., *A. villosa*.

Adena'thera. (From *aden*, a gland, and *anthera*, an anther; referring to the gland on each anther. Nat. ord., *Leguminosæ*. Allied to *Mimosa*.)

Stove evergreen trees. Loam and peat; cuttings in sand under a bell-glass.

A. chryso'sta'chys. See *Piptadenia*.
 — *falca'ta*. See *Albizzia proœra*.
 — *pavoni'na*. 5. Yellow, white. July. E. Ind. 1759. Wight, Ill. t. 84.
 — *sea'ndens*. See *Entada*.

Adena'thos. (From *aden*, a gland, and *anthos*, a flower; referring to the glands on the flowers. Nat. ord., *Proteaceæ*.)

Greenhouse evergreen shrubs. Sandy peat cuttings in spring, under a glass, in sand in gentle bottom-heat; soil, peat, and loam.

A. barbi'gera. Swan River.
 — *cunea'ta*. 5. Red. July. West Australia. 1824.
 — *obova'ta*. 5. Red. July. West Australia. 1826.
 — *seri'cea*. 5. Red. West Australia. 1824.
 — *termina'lis*. Swan River.

Adenium. (From *Aden*, where it is native. Nat. ord., *Apocynaceæ*.)

Greenhouse evergreen shrub, allied to *Alstonia*. It is propagated from cuttings of the young shoots in sand, under a glass, with bottom-heat, in spring. Soil, sandy loam and peat, in equal proportions.

A. obe'sum. 3. June. Pinky-crimson. Aden. 1845. B. M. t. 5418. Syn., *A. houghel* of B. R. 1846, t. 54, but not of De Candolle.

Adenocalymna. (From *aden*, a gland, and *calymna*, a covering; referring to the conspicuous glands on the leaves and floral coverings. Nat. ord., *Bignoniaceæ*.)

A genus of stove evergreen climbers. Loam and peat; cuttings in sand, under a bell-glass with bottom-heat.

A. como'sum. 20. October. Yellow. Brazil. 1841. B. M. t. 4210.
 — *longeracemo'sum*. Yellow. October. Brazil.
 — *nitidum*. Yellow. Brazil? 1869. Pax. Fl. Gard. t. 2.

Adenocarpus. (From *aden*, a gland, and *carpus*, fruit; referring to the glands on the fruit. Nat. ord., *Leguminosæ*; Tribe, *Genistea*. Allied to *Laburnum*.)

All are yellow-flowered. The first two greenhouse plants, the remainder deciduous and hardy; sandy loam. Seeds sown in March, and cuttings any time in spring and summer.

A. decorticans. May. Sierra Nevada. Rev. Hort. 1883, p. 156.
 — *foliolosus*. 6. May. Canaries. 1629. B. M. t. 426. Syn., *Cytisus foliolosus*.
 — *frankensol'des*. 2. June. Canaries. 1815. These two are evergreen, and require protection from frost.
 — *hispanicus*. 3. June. Spain. 1816.
 — *interme'dius*. 4. June. Sicily.
 — *parviflorus*. 4. June. South of France. 1800.
 — *telone'nsis*. 3. June. South of France. 1800.

Adenophora. (From *aden*, a gland, and *phoreo*, to bear. Nat. ord., *Campanulaceæ*.)

Hardy herbaceous plants, like *Campanula*, in which genus some of the species were formerly placed Ordinary garden-soil. Seeds. All have blue or bluish flowers.

- A. coronata*. 2. July. 1818. B. R. t. 149. Syn., *A. marsupiflora*.
 — *coronopifolia*. 1. June. Dahuria. 1822. Swt. Fl. G. 104.
 — *denticulata*. 1. July. Siberia. 1817. Swt. Fl. G. 116. Syn., *A. tricuspidata*.
 — *Fische'ri*. 2. August. Siberia. 1819.
 — *Gmeli'ni*. 2. June. Siberia. 1820.
 — *intermedia*. 2. August. Siberia. 1819. Swt. Fl. G. ser. 2, t. 108.
 — *Lama'rekii*. 2. July. Siberia. 1820.
 — *lilifolia*. 4. July. Siberia. 1810. B. R. t. 236. Syn., *A. communis*.
 — *hybrida*. 2. June. Siberia. 1816.
 — *suaveolens*. 2. June. Siberia. 1816.
 — *periskiofolia*. 2. June. Siberia. 1821.
 — *periplocofolia*. 1. August. Siberia. 1824.
 — *Rabelaisiana*. 2. August. Siberia. 1823.
 — *reticulata*. 2. July. Siberia. 1820.
 — *stylisa*. 2. May. Siberia. 1820.
 — *verticillata*. 2. June. Siberia. 1783. Swt. Fl. G. II. 160.

Adenostoma. (From *aden*, a gland, and *stoma*, a pore. Nat. ord., *Rosaceæ*; Tribe, *Spirææ*. A hardy evergreen shrub, allied to the Lady's Mantle (*Alchemilla*.)

Propagated by cuttings of the young shoots in spring or autumn, under a glass, in sand. Soil, rich loam and peat, in equal proportions.

- A. fasciculata*. 3. White. California. 1848. J. Hort. Soc., vol. 6, p. 55.

Adenotrichia. See **Sene'cio**.

Ade'smia. (From *a*, not, or without, and *desmos*, a bond; in reference to the stamens being free. Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*. Greenhouse and half-hardy plants, allied to *Hedysarum*, all more or less of a trailing habit.)

Annually only grown in botanical collections. The others are greenhouse shrubs or climbers. Soil, loam, peat and sand. Cuttings, in summer, in sandy loam, under a glass.

ANNUALS.

- A. muricata*. 1. Yellow. June. Patagonia. 1793.
 — *papposa*. 1. Yellow. June. Chili. 1823.
 — *pendula*. 1. Yellow. June. Buenos Ayres. 1825. Swt. Fl. G. Ser. 2, t. 322.

EVERGREEN SHRUBS.

- A. balsamica*. Yellow. March. Chili. B. M. t. 6921.
 — *glutinosa*. Yellow. Chili. 1831.
 — *Loudonii*. 2. Yellow. May. Valparaiso. 1830. B. R. t. 1720.
 — *microphylla*. Yellow. Valparaiso. 1830. B. C. t. 1692.
 — *uspallatensis*. 1. Yellow. July. Chili. 1832. Swt. Fl. G. ser. 2, t. 222.
 — *viscosa*. 12. Yellow. August. Chili. 1831. Swt. Fl. G. ser. 2, t. 230.

Adhatoda. (Native name. Nat. ord., *Acanthaceæ*. Allied to *Justicia*.)

Small ornamental stove shrubs. Soil, loam, fibry peat and sand. Cuttings of young shoots in spring, in sand under a bell-glass, with bottom-heat.

- A. cydoniæfolia*. 5. Purple, white. August. Brazil. 1855. B. M. t. 4962.
 — *Va'sica*. 10. Purple. July. E. Indies. 1699. E. M. t. 861. Syn., *Justicia Adhatoda*.

Adiantopsis. (From *adiantum* and *opsis*, like; resembling the Maidenhair.

Nat. ord., *Filices—Polypodiaceæ*.) This genus is sometimes regarded as a section of *Cheilanthes*.

Stove ferns.

- A. pteroides*. Java.
 — *radiata*. 1. S. America.

Adiantum. Maidenhair. (From *adiantum*, dry, as if plunged in water, yet remaining dry. Nat. ord., *Filices—Polypodiaceæ*.)

Greenhouse and stove Ferns. Loam and peat. Root division, or seeds scattered on a moist shady surface. Greenhouse temp. in winter, 40° to 45°, and stove winter temp., 50° to 55°.

GREENHOUSE.

- A. affine*. 1. New Zealand.
 — *assimile*. Same as *A. æthiopicum*. There is a variety *crispatum*, from Victoria.
 — *Bou'rnei*. 1882.
 — *Bu'rnii*. Garden variety. 1887.
 — *capillaire*. 3. July. Britain. Capillaire is so called from being made with this plant.
 — *digitatum*. Dwarf. 1887.
 — *imbricatum*. A garden variety with compact habit. 1887.
 — *chilense*. 1. Chili. 1862.
 — *Colli'sii*. See *A. lunulatum*.
 — *cuneatum*. 1. August. Brazil. 1820.
 — *dissertum*. 1879.
 — *grandiceps*.
 — *Lath'o'mi*.
 — *cyclosum*. 1½. Ecuador. 1887.
 — *Da'dsii*. Hybrid between *A. cuneatum* and *A. amabile*. 1887.
 — *dolabriforme*. 1882.
 — *fe'stum*. Hybrid between *A. cuneatum* and *A. amabile*. 1887.
 — *foliosum*. August.
 — *formosum*. 1. July. Australia. 1820.
 — *fragrantissimum*. 2. Garden variety. 1887.
 — *fulvum*. New Zealand.
 — *h'ans*. New Caledonia. 1887.
 — *hispidulum*. 1. August. Australia. 1822.
 — *tenuillum*. ½.
 — *Legra'ndii*. 1882.
 — *Mairi'sii*. Hybrid. 1885. Syn., *A. Roperi*.
 — *Mari'sii*. Central China. 1880.
 — *O'weni*. Hybrid between *A. amabile* and *A. cuneatum*. 1½. 1887.
 — *Paco'ttii*. Deep green. 1882.
 — *Paradi'sec*. ½. S. Africa. 1889.
 — *pubescens*. 1. April. Australia. 1830.
 — *puberulentum*. 2. July. W. Ind. 1793.
 — *reniforme*. ½. July. Madeira. 1699.
 — *rhodophyllum*. Young fronds rosy-purple. A hybrid (?). 1884.
 — *rhomboidum*. 1. July. S. Amer. 1820. Syn., *A. varium* of gardens.
 — *scabrum*. Chili. 1862.
 — *sulphureum*. 1. Chili. 1862.
 — *tinctum*. Peru. 1862.
 — *Victo'riae*. 1882. A form of *A. tenerum*.
 — *Waltoni*. Garden variety, probably derived from *A. amabile*. 1887.
 — *Weiga'ndii*. 1. America. 1883.
 — *Willia'msii*. Mountains of Peru. 1877.

STOVE.

- A. æmulum*. Brazil. 1877.
 — *æthiopicum*. 2. September. 1838.
 — *ambale*. Peru. 1868.
 — *aneite'nse*. Aneiteum Isles. 1880.
 — *asarifolium*. I. of Bourbon.
 — *Bari'sei* is a garden hybrid. 1879.
 — *bellum*. Bermuda. 1879.
 — *braziliense*. 2. Brazil. 1844.
 — *cardiochæna*. See *A. polyphyllum*.
 — *caudatum*. E. Indies.

- A. colpo des.* Ecuador. 1865.
 — *concl'num.* 2. June. Australia.
 — *la'tum.* Muna. 1868.
 — *corda'tum.* Brown. Yellow. Mindenao.
 — *crista'tum.* 1. Brown. Jamaica. 1844.
 — *culta'tum.* 2. W. Indies.
 — *curva'tum.* 2. Brazil. 1841.
 — *deca'dum.* Peru. 1868.
 — *deto'rdum.* 1. S. Amer. 1820.
 — *denticula'tum.* Brown. July. W. Indies.
 — *Farleye'nse.* Barbadoes. 1865. Syn., *A. tene-rum Farleyense.*
 — *Moritzia'num.* 1. S. Amer. 1838.
 — *Ferguso'ni.* Ceylon. 1884.
 — *flabellifo'lium.* 1. Brown. September. Ja-maica.
 — *flabellula'tum.* E. Ind.
 — *flavo'scens.* Yellow. June. W. Ind.
 — *folio'sum.* 1. Brown. August.
 — *Fovia'num.* 1. Brown. May. W. Ind. 1840.
 — *Ghesbre'ghtii.*
 — *grac'ilium.* 1. Fronds yellowish-olive-green. 1874.
 — *Henderso'ni.* Young fronds rosy-tinted. Columbia. 1878.
 — *Henslowia'num.* Columbia, Peru. 1878. Syns., *A. sessilifolium* and *A. Reichenbachii.*
 — *hirsu'tum.* Luzon.
 — *interme'dium.* 1. Brazil.
 — *Linde'ni.* Amazons. 1866.
 — *lu'cidum.* 1. Brown. August. S. Amer.
 — *luna'tum.* † July. Mexico. 1823.
 — *cele'bicum.* Celebes. 1879. Syn., *A. celebense.*
 — *lunula'tum.* Luzon. Syn., *A. dolabriforme.*
 — *macrophy'llum.* 1. July. Jamaica. 1798.
 — *glau'cum.* New Grenada. 1875.
 — *Mo'rei.* 8. Pinnules very large, trapeziform. Peru. 1870. Syn., *A. peruvianum* of some gardens.
 — *Moritzia'num* is a variety of *A. Farleyense.*
 — *mu'ndulum.* † 1879.
 — *neoguinee'nse.* New Guinea. 1877.
 — *noce'caledo'nise.* 1883.
 — *obi'quum.* 1. April. W. Ind. 1826.
 — *palma'tum.* Peru. 1877.
 — *pa'tens.* 1. July. Brazil. 1824.
 — *peda'tum.* 1. N. Amer. 1640.
 — *perota'dctylon.* July. Brazil. 1828.
 — *peruvia'num.* Peru. 1869.
 — *polyphy'llum.* 3. Peru. Syn., *A. cardio-chlæna.*
 — *pr'i'nceps.* Fronds 3 ft. long, drooping. New Grenada.
 — *prionophy'llum.* Tropical America.
 — *radia'tum.* † July. W. Ind. 1776.
 — *rube'llum.* † Younger fronds reddish. Bolivia. 1868.
 — *Seema'nii.* Central America. 1868. Syn., *A. Zahnii* of gardens.
 — *serrula'tum.* 1. August. Jamaica. 1822.
 — *sessilifo'lium.* Peru. 1870.
 — *setulo'sum.* 1. Norfolk Island. 1805.
 — *specio'sum.* A scandent species. Peru, Ecuador. 1878.
 — *stria'tum.* June. W. Ind. 1822.
 — *te'nerum.* 1. July. Jamaica. 1798.
 — *terna'tum.* † July. S. Amer. 1819.
 — *tetraphy'llum.* Tropical America. 1879.
 — *obtu'sum.* † Congo. Ill. Hort. 1889, t. 86.
 — *trapezifo'rme.* 1½. June. W. Ind. 1798.
 — *triangula'tum.* July. Trinidad. 1824.
 — *va'rium.* 1. July. S. Amer. 1820.
 — *Veitchia'num.* Young fronds red. Peruvian Andes. 1868.
 — *velut'num.* Columbia. 1866.
 — *villo'sum.* 1. July. Jamaica. 1775.
 — *Wilesia'num.* Jamaica.
 — *Wils'o'ni.* † Jamaica. Syn., *A. Seemanni* of some gardens, but not the true plant.

Adi'na. (From *adinos*, crowded; the

flowers being crowded into a head. Nat. ord., *Rubiaceæ.*)

A pretty little evergreen shrub, requiring a cool stove. Cuttings in sandy loam, under a bell-glass. Soil, sandy loam and peat.

A. globifo'ra. 3. White. July. China. 1804.
 Par. Lond. t. 115. Syn., *Naucllea Adina.*

Adlu'mia. (Named after *Adlum*, an American author. Nat. ord., *Fuma-riaceæ.*)

A hardy herbaceous climber, requiring com-mon soil. Seeds.

A. cirrho'sa. 15. White. August. N. America. 1778.

Ado'nis. (Named after *Adonis* of the Classics. Nat. ord., *Ranunculaceæ.*)

Pretty hardy herbaceous plants; common garden soil; the annual species from seeds, and the perennial from seed or root division. Useful border or rock plants.

ANNUALS.

A. aestiva'lis. 2. Scarlet. June. South of Europe. 1629. Rchb. Ic. Crit. IV. 817. Syn., *A. minima.*

— *autumna'lis.* 1. Crimson. July. Britain. Rchb. Ic. Crit. IV. 819. Pheasant's eye.

— *citri'na.* 1. Orange. June. South of Europe. 1819.

— *flammea.* 1. Scarlet. Austria.

PERENNIALS.

— *disto'rta.* 1. April. Yellow. Naples. 1827.
 — *pyrena'ica.* 1½. July. Yellow. Pyrenees. 1817.

— *verno'lis.* 1. March. Yellow. Europe. 1629. B. M. t. 134. Syns., *A. appenina* and *Mentzelii.*

— *ma'jor.* Dwarfed, flowers larger. 1879. G. C. 1879, v. 11, p. 621.

— *sibiri'ca.* 2. April. Yellow. Siberia. 1827.

— *volge'nsis.* 1. April. Yellow. Russia. 1818. Syn., *A. davorica.*

Æchme'a. (From *aichme*, a point; in reference to the rigid points on the calices or flower-envelopes. Nat. ord., *Bromeliaceæ.*)

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

Æ. Barle'ei. 3. Primrose. Brit. Honduras. 1877.

— *bracte'a'ta.* Yellow, bracts crimson. W. Ind. 1873.

— *calycula'ta.* † Yellow, bracts red. 1862. Syns., *Hohenbergia calyculata*, *Hoplophytum calyculatum*, and *Macrochordium luteum.*

— *coele'stis.* Sky-blue. Brazil. Syns., *Hoplophytum coeleste* and *Hohenbergia coelestis.*

— *cœrule'scens.* 1. Bluish. S. America. 1870. Syns., *Æ. cœrulea*, *Lamprococcus*, and *Hoplophytum cœrulescens.*

— *Co'rnu'i.* A form of *nudicaulis.* Rev. Hort. 1885, p. 36.

— *di'scolor.* 2. Scarlet, purple. June. 1844.
 — *disticha'ntha.* 1. Red-purple. S. Brazil. 1852. Syn., *Hohenbergia distichantha.*

— *erythrosta'chya.* Rose, red. Brazil. 1864. Syn., *Hohenbergia erythrostachya.*

— *exsu'dans.* 2. White. W. Ind. 1824. Syns., *Bromelia exsudans*, *Hohenbergia exsudans*, *H. capitata.* The flowers exude a white greasy substance.

— *fascia'ta.* 1½. Pink, bracts rose. Rio Janeiro. 1826. Syns., *Bilbergia fasciata* and *B. rhodocorynea.*

- A. Fernandæ*. 2. Yellowish. Para. 1872. Syns., *Ananas Mensdorffiana* and *Bromelia Fernandæ*.
- *fænuosa*. See *Æ. spectabilis*.
- *fulgens*. 1. Scarlet, blue. September. Cayenne. 1842.
- *Furstenbergii*. 1. Rose. Bahia. 1879.
- *Germinyana*. 2. Reddish-white. New Grenada. Syns., *Bromelia daguensis* and *Chevaliera Germinyana*.
- *Glaziovi*. 7. Red-purple. S. Brazil. 1880. Belg. Hort. 1881, t. 13.
- *glomerata*. Violet, bracts crimson. Bahia. 1866. Syn., *Pironneava glomerata*.
- *Hookeri*. Scarlet, purple, yellow. Brazil. 1864.
- *hystrix*. 2½. Violet, bracts scarlet. February. Cayenne. 1880.
- *Lalindæi*. Ill. Hort. t. 481.
- *Legrèlliana*. ½. Red-purple. 1865. Syn., *Hohenbergia Legrèlliana*.
- *Lindeni*. 1. Yellow, bracts red. S. Brazil. 1864. Syn., *Hoplophytum Lindeni*.
- *Luddemanniana*. Red, green. S. America. 1866. Syn., *Pironneava Luddemanniana*.
- *macracantha*. See *Æ. Schiedeana*.
- *Pellieri*. 3 to 4. Whitish, bracts carmine. 1880.
- *Mariæ Regiæ*. Blue, white, bracts carmine. April. Costa Rica. 1863.
- *Melinoisii*. 1. Crimson, pink. S. America.
- *Merteisii*. 2. Green, red. March. Demerara. 1830.
- *mexicana*. 2. Green, crimson. Mexico.
- *Morreniana*. 2. Purple. S. America. 1875. Syn., *Pironneava Morreniana*.
- *myroniflora*. ½. Yellow. Demerara. 1855.
- *myrtofolia*. 2½. Pink, fading to lilac. Trop. America. 1887. B. M. t. 6939.
- *nudicaulis*. 1. Yellow. Tropical America. 1825. Syns., *Billbergia* and *Hohenbergia nudicaulis*.
- *odorata*. 7. Yellowish. Guiana. 1879.
- *Ortgiesii*. Red. 1860. Syn., *Ortgiesia tilandroides*.
- *paniculata*. 2. Rosy purple, bracts white, woolly. Summer. Mexico. 1877.
- *paniculigera*. 3. Red-purple. Jamaica. 1882. Syn., *Hohenbergia paniculigera*.
- *Pineliana*. 1. Yellow, bracts red. Brazil. 1862. Syns., *Echinostachys* and *Macrorchidium Pinelianum*.
- *purpurea*. 1 to 1½. Leaves, crimson-purple. Columbia. 1889.
- *regularis*. 1. White, bracts red. S. Brazil. 1873.
- *Schiedeana*. Pale yellow. Central Mexico. 1880. Syn., *Æ. macracantha*.
- *spectabilis*. Rose-crimson. Guatemala. 1875. Syn., *Æ. flexuosa*.
- *suaveolens*. 2½. Pink. April. Brazil. 1838. Syn., *Billbergia melanacantha*.
- *Veitchii*. 1. Scarlet. Columbia. 1877. Syn., *Chevalliera Veitchii*.
- *Weibachii*. 1½. Pink, light violet; scape and bracts scarlet. Brazil. 1854.
- *leodensis*. Scarlet, violet, green. Brazil. 1887.

Æcidium. A genus of minute cup-shaped fungi, parasitic on the leaves and stems of various plants. The best known species is *Æ. berberidis*, which lives on the leaves of the common Berberry. *Puccinia graminis*, parasitic upon wheat, has been shown to be but a phase in the life history of *Æ. berberidis*, and the same is probably true of the numerous other species, such as *Æ. convallariæ*, *Æ. ficariæ*, and *Æ. violæ*, of which men-

tion will be made under the plants infested by them.

Ægiceras. (From *aix*, a goat, and *keros*, a horn; alluding to the shape of its fruit. Nat. ord., *Myrsinaceæ*.)

Small greenhouse evergreen tree. Propagated from cuttings of the half-ripe shoots in summer, under a glass, in sand, and gentle heat. Soil, sandy loam and peat; flowers, fragrant.

Æ. majus. White. Australia. 1824. Wight Ill. t. 146. Syn., *Æ. fragrans*.

Ægiphila. (From *aix*, a goat, and *philos*, dear; referring to its being a favourite with goats. Nat. ord., *Verbenaceæ*.)

Ornamental stove evergreen shrubs. Rich sandy loam; cuttings in sand, under a glass, with bottom-heat.

Æ. arborescens. 10. White. Trinidad. 1823.

— *diffusa*. 2. Yellow. July. W. Ind. 1824. Andr. Rep. vol. 9, p. 578, f. 1.

— *elata*. 12. Pale yellow. August. Jamaica. 1823. B. R. t. 946.

— *fœtida*. 2. Lilac. July. W. Ind. 1820.

— *grandiflora*. 2. Yellow. November. Havannah. 1843. B. M. t. 4230. Syn., *Æ. verrucosa*.

— *levis*. June. Yellow. Guinea. 1824.

— *martinicensis*. 6. White. W. Ind. 1780. Jacq. Fr. t. 46.

— *obovata*. 2. Yellow. September. W. Ind. 1804. Andr. Rep. vol. 9, p. 578, f. 2.

— *trifida*. 4. White. June. Jamaica. 1826.

Ægle. Bengal Quince. (From *Ægle*, one of the Hesperides. Nat. ord. *Rutaceæ*.)

The *Marmelos* or *Bael* is a delicious Indian fruit, possessing high medicinal qualities. Stove evergreen tree. Cuttings of ripe-wooded shoots, in sand, under a bell-glass, with bottom-heat; rich loam.

Æ. marmelos. 6. Whitish red. E. Ind. 1759. Bedd. Fl. Syl. t. 161.

Ægochloa. See *Navarre'tia*.

Æollanthus. (From *aiolo*, to vary, and *anthos*, a flower; referring to the variableness of the flowers. Nat. ord., *Labiatae*.)

Stove annual. Sandy loam; seeds.

Æ. Livingstonei. Brown. E. Africa. 1859.

— *suaveolens*. 1. White. July. Brazil. 1825.

Æonium. See *Sempervivum*.

Æra'nthus. (From *aer*, air, and *anthos*, a flower; referring to the way in which the plant grows. Nat. ord., *Orchidaceæ*; Tribe, *Vandæe*, *Sarcanthee*.)

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

Æ. arachnitis. ½. Green. Madagascar. 1873.

— *Curnoviana*. Madagascar. 1883.

— *grandiflorus*. 1. Yellow, green. June. Madagascar. 1823.

Aeration. Exposing soil to the air.

Ærides. (From *aer*, the air; in reference to the power these have of living on the air. Nat. ord., *Orchidaceæ*; Tribe, *Vandæe*, *Sarcanthee*.)

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. affine*. Rosy. India. Syn., *A. roseum*. *A. affine*, of B. M. t. 4049, is *A. multiflorum*.
 — *Burbi dagesplendens*. Rich purple, ochre. 1885.
 — *crassifolium*. Purplish. Burmah. 1877.
 — *crispum*. 1. White, rose. May. E. Ind. 1840. Syns., *A. Brookii*, *Lindleyanum*, and *Warneri*.
 — *cylindricum*. B. M. t. 4982. See *A. vandarum*.
 — *dasydarpum*. Brownish, rosy. India? 1865.
 — *difforme*. See *Ornithochilus fuscus*.
 — *Emérici*. †. Pale lilac. May. Andaman Islands. 1882. B. M. t. 6728.
 — *expansum*. White, light rose. 1882. Syn., *A. falcatum*, var. *expansum*.
 — *Leonice*. Spur green.
 — *falcatum*. White, pale violet. Tenasserim. 1862. Syns., *A. Larpenteae* and *Mendakii*.
 — *Farméri*. †. White, yellow. June. E. Ind.
 — *Fieldii* ngéi. Purple, white. India. 1855.
 — *Willkamsii*. White, rose. India.
 — *formosum*. 1882.
 — *gutta* tum. See *Rhynchostylis retusa*.
 — *Houlettianum*. Yellow, purple, lip white and amethyst. E. Tropical Asia?
 — *Huttoni*. See *Saccolabium*.
 — *illustre*. White. India. 1882.
 — *japonicum*. †. Yellowish, white, purple. June. Japan. 1862. Greenhouse.
 — *Lawrencianum*. White, carmine. Trop. Asia. 1883.
 — *lepidum*. White. India. 1883.
 — *Lindleyanum*. 1. White, pink. E. Ind.
 — *maculatum formosum*. Whitish, rose. June.
 — *maculatum*. †. Purple spotted. May. Bombay. 1840.
 — *marginatum*. Yellow, blotched purple, brown. 1885.
 — *mitratum*. White, lip violet. April. Moulmein. 1864.
 — *multiflorum*. 1. White, rose. India. 1837. Syns. *A. affine*, B. M. t. 4049, *Lobbi*, *trigonum*, and *Vetchii*.
 — *odontochilum*. 2. Sylhet. 1837.
 — *odoratum*. †. White. August. E. Ind. 1800. Syn., *A. cornutum*.
 — *birmanicum*. Light purple line on tips of the lateral sepals; mid lobe of lip, purple. Burmah.
 — *Demidoffi*. White, rose. Lindenia t. 14.
 — *purpurascens*. G. C. 1881, vol. 16, p. 596.
 — *Ortgiesianum*. White, purple. 1885.
 — *pachyphyllum*. Crimson-lake. Burmah. 1880.
 — *paniculatum*. B. R. t. 220. See *Sarcanthus*.
 — *Picoti*. Cochinchina. Orch. 1890, f. 288.
 — *quinquevulnera*. †. Pink. June. Philippines. 1838.
 — *Schadenbergianum*. More compact than the type. 1886.
 — *Roebelenii*. Greenish, rosy, yellow. 1884.
 — *Sanderianum*. White, purple, yellow. E. Tropical Africa? 1884.
 — *Schroederi*. †. White, pink. E. Ind.
 — *suarissimum*. White, lilac. June. Malacca. Syns., *A. Ballantianum nobile*, *Reichenbachii*, and *Rohanianum*.
 — *tesselatum*. White, green, and purple. June. E. Ind. 1838.
 — *testaceum*. See *Panda*.
 — *Thibautianum*. White, amethyst. Polynesia. 1866.
 — *vandarum*. White, yellow. India. 1867. Syn., *A. cylindricum*.
 — *virens*. Whitish, purple. April. Java. 1843.
 — *Ellisii*. White, tinged with rose. Warn. Orch. Alb. t. 298.
 — *Wightianum*. See *Vanda parviflora*.
 There are also the following garden hybrids:—
A. Dominiana (1866), *A. hybridum* (1861).

Æ'rua. (From *eroua*, its Arabic name. Nat. ord., *Amarantaceæ*.)

Stove herbaceous plants; flowering in June. Propagated by dividing roots.

- Æ. javanica*. 2. White. E. Ind. 1768. Wight Icon. t. 876.
 — *landata*. 1. White. E. Ind. 1691.

Æschyna'nthus. (From *aischuno*, to be ashamed, and *anthos*, a flower. Nat. ord., *Gesneraceæ*.)

Handsome twining stove shrubs; often grown on blocks with green moss, but they are more satisfactory as pot or basket plants. Seeds, and cuttings of half-ripened wood, with all but a few of the top leaves removed. In sand under a bell-glass with bottom-heat. Soil, light rich loam, sand, and well-decayed leaf-soil.

- Æ. atropurpureus*. Java. 1846. B. M. t. 5181.
 — *atrosanguineus*. Dark red. July. Guatemala. 1848.
 — *Boschianus*. Scarlet. July. Java. 1843.
 — *cordifolius*. Red. Borneo.
 — *Fleé*. Mexico. Scandent.
 — *fulgens*. Crimson, yellow. October. E. Indies. B. M. t. 4891.
 — *grandiflorus*. 5. Scarlet. August. E. Ind. 1837.
 — *Horsfieldii*. 2. Pale scarlet. August. Java. 1844. Gfl. t. 297.
 — *javanicus*. Red, yellow. Java. 1849. B. M. t. 4503.
 — *Lindeni*. Amazons. 1866.
 — *Lobbiana*. 1. Scarlet. June. Java. 1845. B. M. t. 4260.
 — *longiflorus*. 2. Scarlet. June. 1845. B. M. t. 4328.
 — *maculatus*. 3. Scarlet. August. India. 1839.
 — *marmoratus*. 1882.
 — *miniatum*. 1½. Scarlet. June. Java. 1845. Pax. Mag. vol. 16, p. 65.
 — *Paxtonii*. Scarlet. April. Khasea. 1839. J. Hort. Soc. vol. 4, p. 79.
 — *pu'cher*. Scarlet. 1. July. Java. 1845. Pax. Mag. vol. 16, p. 161.
 — *purpurascens*. 1. Purple, yellow. March. Java. 1845. B. M. t. 4236.
 — *radicans*. Red. August. Sumatra. 1845.
 — *ramosissimum*. 3. Scarlet. June. Khasea. 1837. B. M. t. 4264.
 — *Roxburghii*. Scarlet. July. E. Ind. 1837.
 — *speciosus*. 2. May. Orange. Java. 1845. B. M. t. 4320. Syn., *Æ. Aucklandi*.
 — *splendidus*. 1881.
 — *tricolor*. Red, yellow, black. Borneo. B. M. t. 5031.
 — *velutinum*. Columbia. 1866.
 — *zebrinus*. Green, brown. Autumn. Java. 1846.

Æschyno'mene. (From *aischuno*, to be ashamed; in reference to the supposed sensitiveness in the leaves. Nat. ord., *Leguminosæ*. Allied to *Hedysarum*.)

Herbaceous and shrubby stove plants. The annuals by seed in a high temperature, and the shrubs by cuttings in sand, under a bell-glass, in a good bottom-heat; rich sandy loam.

ANNUALS.

- Æ. americana*. 2. Yellow. July. Jamaica. 1732.
 — *aspera*. 2. Yellow. June. E. Ind. 1759. Wight Icon. t. 299.
 — *hispidula*. 2. Yellow. N. Amer. 1803.
 — *indica*. 2. Yellow. June. E. Ind. 1799. Wight Icon. t. 405.

- Æ. pu'mila*. 3. Yellow. July. E. Ind. 1818.
— subviscosa. 1. Yellow. July. E. Ind. 1816.
— viscidula. 1. Yellow. July. Florida. 1816.

SHRUBS.

- Æ. cre'pitans*. 4. Yellow. July. Caraccas. 1820. Jacq. Fragm. t. 42, f. 2.
— pa'tula. 4. Yellow. July. Mauritius. 1820.
— pe'ndula. 3. Yellow. July. Mauritius. 1826.
— sensit'va. 3. White. W. Ind. 1733.

Æsculus. (A name given by Pliny to a kind of oak, having an edible fruit. Nat. ord., *Sapindaceæ*.)

Hardy, showy, deciduous trees for pleasure parks or lawns. They thrive best in a deep, rich, loamy soil. Seeds, or layers of the branches in spring. Also grafts or buds on the common horse chestnut.

- Æ. califo'rnica*. 20. White. July. California. B. M. t. 5077.
— ca'rneæ. See *Æ. rubicunda*.
— chine'nsis. China. 1839.
— gla'bra. 12. Greenish-yellow. May. N. Amer. 1812. Grafts. Syn., *Æ. ohio'ensis*. B. R. 24, t. 51, and *Æ. pallida*.
— hippoca'stanum. 40. White. May. Asia. 1629. Seeds. Common Horse C.
— fo're-ple'no. 40. White. May. Gardens. Grafts.
— fo'lis arge'ntis. 40. White. May. Gardens. Grafts.
— variega'tum. 16. White. May. Asia. 1629. Layera.
— i'ndica. 40. White. July. E. Indies. B. M. t. 5117.
— chioe'nsis. See *Æ. glabra*.
— pallida. See *Æ. glabra*.
— parvisfo'ra. 2 to 4. White. July. United States. 1785. Syn., *Æ. macrostachya*. B. M. t. 2118.
— rubico'ndæ. 12. Red. June. N. Amer. 1820. B. C. t. 1242. Syn., *Æ. carnea*.

Æthione'ma. (From *aitho*, to scorch, and *nema*, a filament; in reference to some burnt appearance in the stamens. Nat. ord., *Cruciferae*.)

A pretty genus of annual, biennial and perennial plants; the latter suitable for the rockery. Common light soil; seeds and cuttings.

ANNUALS.

- Æ. Buzbau'mii*. $\frac{1}{2}$. Pale red. June. Levant. 1823.
— gra'ville. $\frac{1}{2}$. Pale red. June. Carniola. 1823.
— saza'tile. $\frac{1}{2}$. Flesh. June. South of Europe 1759.

BIENNIAL.

- Æ. monospe'rmum*. $\frac{1}{2}$. Pale purple. July. Spain. 1778.

PERENNIALS.

- Æ. coridifo'lium*. Rosy-purple. May. Asia Minor. 1871. Gf. t. 1150.
— grandifo'rum. $1\frac{1}{2}$. Rose. May. 1879. Gf. t. 1102.
— heteroa'ryum. $\frac{1}{2}$. Purple. July. Armenia. 1837.
— membrana'ceum. $\frac{1}{2}$. Lilac. July. Persia. 1829. Swt. Fl. Gard. ser. 2, t. 69.
— parvisfo'rum. $\frac{1}{2}$. Lilac. July. Persia. 1830.
— pulche'llum. Very much like *coridifolium*. 1884.

Ætho'nia. See *To'lpis*.

African Almond. *Brabe'jum st'cl-ta'tifolium*.

African Fleabane. *Tarchona'n-thus*.

African Lily. *Agapa'nthus*.

African Marigold. *Tagetes'ere'cta*.

Afze'lia. (In honour of Dr. A. Afze'lius. Nat. ord., *Leguminosæ*. Allied to *Amherstia*.)

Stove evergreen tree. Sandy peat and leaf-soil. Cuttings in sand, under a bell-glass, with good bottom-heat.

- A. africa'na*. Crimson. June. Sierra Leone. 1821.

Agal'ma. (From *agalma*, an ornament. Nat. ord., *Arabiaceæ*.)

- A. viti'e'nsis*. Leaves digitate; leaflets entire. Fiji. 1887.

Agal'myla. (From *agalma*, an ornament; and *hule*, a forest. Nat. ord., *Gesneraceæ*.)

Handsome stove plants, with scarlet and crimson tubular flowers, suitable for growing in baskets or pots, in the moist stove. Cuttings of ripened wood, under a bell-glass. Sandy fibrous peat, moss, charcoal, and a little leaf-soil.

- A. longisty'la*. Crimson. Java. 1873. Rev. Hort. 1873, p. 271.
— stami'neæ. Scarlet. Summer. Java. 1846. B. M. t. 6747.

Agani'sia. (From *aganos*, desirable; in reference to the beauty of these neat little plants. Nat. ord., *Orchideæ*.)

Epiphytal orchids, requiring to be grown on blocks in moist atmosphere in tropical house. Division of roots previous to commencement of growth.

- A. cæru'lea*. Blue, with darker blue blotches. Brazil. 1876.
— cya'neæ. 1. White, blue. August. Columbia. 1843. Syn., *Warrea cyanea*, B. R. 1845, t. 28. *Lindenia* t. 100 is *Acaallis cyanea*.
— fimbria'ta. White, lip blue, fringed. Demerara. 1874.
— grami'neæ. $\frac{1}{2}$. Yellow, red. January. Guiana. 1836. Syn., *Mazillaria* and *Koellensteinia graminea*. B. M. t. 6338.
— iono'ptera. White, violet. Peru. 1871. Syn., *Koellensteinia ionoptera*.
— pulche'lla. $\frac{1}{2}$. Cream-coloured. June. Demerara. 1838. B. R. 1840, t. 32.
— tri'color. Yellow, faint blue, lip red and orange. Amazon. 1838.

Agano'sma. See *Ichnocarpus*.

Agapa'nthus. (From *agape*, love, and *anthos*, flower. Nat. ord., *Liliaceæ*.)

Half-hardy plants from the Cape of Good Hope, standing in sheltered places in the open air in mild seasons. Useful for greenhouse or conservatory, either planted out, or in pots. Offsets.

- A. umbella'tus*. 3. Blue. April. 1692. B. M. t. 500.
— a'bidus. 2. Whitish. September.
— albifo'rus. White. Maund Bot. vol. 2, t. 86.
— ca'ndidus. White. S. Africa. 1880.
— fo're-a'ldo. 1879.
— giga'nteus. 3. Dark-blue. 1879.
— interme'dius.
— Leichtli'nii. 1. Blue. 1879.
— ma'rimus. B. R. 1843, t. 7.
— mi'nimus. B. R. t. 699.
— Moorea'nus. Blue. September. S. Africa. 1872.
— mi'nor. $1\frac{1}{2}$. Dark blue. 1879.
— variega'tus. 2. Blue. April.

Agape'tes. (From *agapetos*, admired; alluding to the brilliant flowers. Nat. ord., *Vacciniaceæ*.)

Intermediate, or stove evergreen shrubs. Cuttings in sand, under a bell-glass with good bottom-heat. Sand, peat, and turfy loam.

- A. buxifolia*. 5. Red. Bootan. B. M. t. 5012.
— *setigera*. Scarlet. Khasia. 1837.
— *vaccinacea*. Khasia. 1837.
— *variegata*. Scarlet. Khasia. 1837. Syn., *Thiebandia variegata*.

Agaricus. (From *Agaria*, the name of a town in Sarmatia. Nat. ord., *Fungi*.)

A genus of fungi, consisting of numerous species, which are more or less umbrella-shaped, and bear on their under side radiating gills, whose surfaces are covered with minute spores, by which the plants are reproduced. The best-known species in this country is *A. campestris*, the Mushroom, which see.

Agarista. (A name in mythology, the beautiful daughter of *Clisthenes*; on account of the beauty of the flowers. Nat. ord., *Ericaceæ*.)

Stove evergreen shrubs. Cuttings of the half-ripened wood, in sand, under a bell-glass. Sandy loam and peat about half and half. Summer temp. 70° to 75°; winter, 65° to 70°.

- A. calliopsisidea*. 1½. Orange. California.

Agastachys. (From *agastos*, admirable, and *stachys*, a spike. Nat. ord., *Proteaceæ*.)

A greenhouse evergreen shrub. Cuttings of ripe wood in sand, under a glass, and placed in a cool house; equal parts loam, sand, and peat.

- A. odora*. 3. Pale yellow. June. Tasmania. 1826. Ic. Pl. t. 1266.

Agathæ'a. See *Feli'cia*.

Agathe'lpis. (From *agathos*, pleasant, and *thelis*, a woman. Nat. ord., *Selaginææ*.)

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.

- A. angustifolia*. White. May. Cape of Good Hope. 1823.
— *parvifolia*. White. May. Cape of Good Hope. 1816.

Agathophyllum. See *Raven-sara*.

Agathos'ma. (From *agathos*, pleasant, and *osma*, smell. Nat. ord., *Rutaceæ*. Allied to *Diosma*.)

Handsome heath-like 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, in cool house. Winter temp. 40° to 45°. In summer they require a rather shady place.

- A. acuminata*. 5. Violet. 1812.
— *ambigua*. 2. Whites. 1810.
— *brevifolia*. 2. Purple. 1818.
— *Bruniades*. 2. Purple. 1820.
— *cerefolia*. 2. White. 1774.
— *ciliata*. 2. White. 1774. B. R. t. 366.
— *erecta*. 2. Blue, white. 1816.
— *hirta*. 2. Purple. 1794. B. R. t. 369.
— *ezsica*. 2. Purple. 1718.

- A. hirta purpurea*. 2. Purple. 1791.
— *Ventenatia*. 2. Purple. 1794.
— *hirta*. 1. Violet. 1786.
— *umbriata*. 3. Pink. 1774.
— *reflexa*. 2. Purple. 1820.
— *rugosa*. 2. White. 1790.
— *unifolia*. 2. White. 1823.
— *orbiculata*. 2. White. 1800.
— *prolifera*. 2. White. 1790.
— *rubescens*. 1. White. 1798.
— *vestita*. 2. White. 1824.
— *villosa*. 2. Violet. 1786.

Agathyr'sus. See *Lactu'ca*.

Agati. See *Sesba'nia*.

A'gave. Aloe. (From *agavos*, admirable; referring to the stately form in which some of them flower. Nat. ord., *Amaryllidææ*; Tribe, *Agaveæ*.)

The fibre of some species of aloes 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. albicans*. 4. Greenish-yellow. Mexico. 1860.
— *Albiverti*. 4. Mexico? 1882. Syns., *Alibertia intermedia* and *Agave intermedia*.
— *americana*. 24 to 36. Yellowish. Tropical America. About 1554. B. M. t. 3654.
— *Mille'ri*. A dwarf variety. 1768.
— *picata*. Leaves variegated. Syn., *A. ornata*.
— *variegata*. 12. Yellow. August. S. Amer. 1640.
— *amœna*. See *A. Scolymus*.
— *amurensis*. A dwarf form of *A. xylonacantha*.
— *applanata*. Mexico. 1869.
— *asperrima*. 2. Yellow. Mexico. 1864.
— *atrovirens*. 25-30. Yellow. Mexico. Syn., *A. Salmiana*.
— *attenuata*. 12. Greenish-yellow. Mexico. 1834. Syns., *A. glaucescens* and *A. spectabilis*.
— *auricantha*. A form of *A. Scolymus*.
— *Baxteri*. 8-10. Yellow. Mexico? 1888.
— *Beauca'rnei*. Mexico.
— *Bernha'dii*. Mexico. 1868.
— *Besseria*. 2. Green. Mexico. 1869. There are two forms of this; one, *viridis*, with green leaves; the other, *glauca*, with glaucous leaves. B. M. t. 5940. This is the same as *A. macrantha*.
— *hystris*. S. America. 1869.
— *Botte'ri*. 5. Greenish. Mexico. 1875.
— *Bou'chei*. 6. Yellowish-green. Mexico. 1861.
— *brachystachys*. 3. Green. Mexico. 1820.
— *bracteosa*. 3-4. N. Mexico. 1881.
— *Brauniana*. Mexico. 1865.
— *bromeliæfolia*. Mexico. 1834.
— *bulbosa*. Columbia. 1871.
— *californica*. 3 to 8. N. Mexico. 1869.
— *candela'brum*. 20. Green. Mexico. 1877.
— *caribbæa*. Martinique. 1877.
— *Celsiana*. 4. Green. May. Mexico. 1839.
— *alvida*. Mexico. 1871.
— *chlorocantha*. 6. Green. Mexico. 1842.
— *coact'nea*. 2. Mexico. 1859.
— *cochlearis*. 25. Yellowish-green. Mexico. 1867.
— *caerulea*. Mexico.
— *concinna*. Mexico. 1877.
— *conduplicata*. Mexico. 1865.
— *Cordero'yi*. Mexico. 1872.
— *crenata*. Mexico.
— *cucullata*. Mexico. 1860. Closely allied to this are *A. Simsii*, *A. Croucheri*, and *A. rotundifolia*.
— *dasythrioides*. 10. Green. Mexico. 1846.

- A. dealbata*. 10. Mexico. 1865.
 — *angustifolia*. Mexico. 1871.
 — *compacta*. Mexico. 1871.
 — *Decaisnea*'na. Mexico. 1869.
 — *Demeesteria*'na. Mexico.
 — *densiflora*. 6. Green. September. Mexico. 1857.
 — *Deserti*. 4 to 10. Yellow. California. 1877.
 — *Desmetia*'na. S. America? 1869.
 — *diplacantha*. Mexico.
 — *chinofides*. Mexico. 1869.
 — *Ehrenbergii*. 5. Mexico. 1864.
 — *Elemeetia*'na. 14. Yellowish-green. Mexico. 1864.
 — *elongata*. Mexico.
 — *ensifera*. Mexico.
 — *excelsa*. Honduras.
 — *expansa*. Mexico?
 — *Fenzlia*'na. Allied to *A. Hookeri*, but having smaller prickles.
 — *ferox*. Mexico. 1861.
 — *filamentosa*. 10. Green, purplish. Mexico.
 — *filifera*. 6. Greenish. Summer. Mexico.
 — *variegata*. 1881.
 — *flavida*. Mexico? 1872.
 — *flavescens*. See *A. macrantha*.
 — *fœtida*. See *Furcraea gigantea*.
 — *Fuerstenbergii*. Mexico.
 — *Funkia*'na. Mexico.
 — *Galeottii*. Mexico. 1877.
 — *geminata*.
 — *Willia*'msii. Tropical America. 1872.
 — *geminiiflora*. 15. Reddish-brown. Mexico. 1810.
 — *Ghiesbreghtii*. Mexico. 1862.
 — *Gilbeyi*. Mexico. 1873.
 — *glaucescens*. B. M. t. 5333. See *A. attenuata*.
 — *Goepertii*'na. 8. Mexico. 1865.
 — *Guedeneyri*. 12. Yellowish-green. Mexico. 1875.
 — *guttata*. Mexico. 1860.
 — *Haselii*. 7. Green. Mexico. 1864.
 — *Haynaldii*. 10. Pale green. Autumn. 1879.
 — *Henriquezii*. 12. Green, tinged brown. Mexico. 1887.
 — *glomuliflora*.
 — *heteracantha*. 6. Olive-green. Mexico.
 — *Hookeri*. 30. Greenish. Mexico. B. M. t. 6539.
 — *horizontalis*. 6. Reddish-brown. Mexico? 1865.
 — *horrida*. 6 to 8. Yellowish-green. Spring. Mexico. 1862.
 — *levis*. Leaves longer and narrower. Mexico. 1870.
 — *macrodonata*. Mexico. 1876.
 — *micracantha*. Mexico. 1876.
 — *Houlletii*. Mexico? 1865.
 — *Humboldtii*'na. Mexico. 1865.
 — *imbricata*. Mexico.
 — *inermis*. Mexico.
 — *intermedia*. See *A. Alibertii*.
 — *latifolia*. 10. Greenish. Mexico.
 — *latifolides*. 10. Yellowish-green. Summer. Mexico. 1871.
 — *Jacquinia*'na. 14. Green. September. Honduras. 1845.
 — *Karatto*. 6. Green. S. Amer. 1768.
 — *Kerchoveti*. Mexico. 1864.
 — *keveensis*. Mexico. 1865.
 — *latifolia*. Mexico. 1869.
 — *latissima*. Mexico.
 — *Laurentia*'na. Mexico. 1865.
 — *laxa*. 1834.
 — *Legrellia*'na. Mexico. 1865.
 — *Leguaya*'na. Mexico. 1862.
 — *Lindleyi*. Mexico? 1867.
 — *longifolia*. Mexico.
 — *lophantha*. 10 to 12. Mexico.
 — *lurida*. 8. Green. June. Vera Cruz. 1781.
 — *macracantha*. 8. Greenish. Mountains of Mexico. 1830. Syn., *A. flavescens*.
 — *macrodonata*. Mexico.
 — *maculata*. 1½ to 3. Purplish-green. Texas. 1856. Syn., *A. maculosa*.
 — *minor*. 6. Leaves entire. 1869.
 — *Margretia*'na. Mexico.
 — *Martia*'na. Mexico. 1864.
 — *Maximilia*'na. Mexico. Syn., *A. Gustaviana*.
 — *Maximowiczia*'na. 6½. Green. 1889.
 — *melanacantha*. Mexico. 1863.
 — *Meisal*. Mexico.
 — *mexicana*'na. 5. Green. Mexico. 1817.
 — *micracantha*. 6. Greenish-yellow. Mexico. 1860.
 — *miradorensis*. 20. Yellowish-green. Summer. Mexico. 1869.
 — *mitis*. 10. Yellowish. Mexico. 1860.
 — *Moorea*'na. New Grenada. 1873.
 — *Morrii*'sii. 15 to 20. Bright yellow. Jamaica. 1887.
 — *Muhlmannii*. 5. Mexico. 1871.
 — *Nissoii*. Mexico? 1874.
 — *oblongata*. 8. Mexico. 1868.
 — *Offroya*'na. Mexico. 1862.
 — *oligophylla*. Mexico? 1878.
 — *Ortgiesia*'na. Mexico. 1876.
 — *Parryi*'t. 8 to 12. Yellow-green. New Mexico. 1863.
 — *parvifolia*. 5. Green. Spring. Mexico? 1877.
 — *Peacockii*. Mexico. 1873.
 — *pectinata*. Mexico. 1869.
 — *polyacantha*. 6. Green. August. 1800.
 — *polyacanthoides*. Mexico. 1835.
 — *Poseigeri*. 6 to 10. Purplish. Texas.
 — *potatorum*. 12. Greenish-yellow. Mexico. 1830.
 — *pruinosa*. Mexico. 1863.
 — *pubeescens*. 3. Greenish. Mexico. 1870.
 — *pugioniformis*. Mexico. 1830.
 — *pulcherrima*. Mexico. 1835.
 — *racinosa*. Mexico.
 — *Regelii*. Mexico. 1865.
 — *regia*. Mexico? 1872.
 — *revoluta*. 4. Greenish. Mexico. 1840.
 — *rigida*. Mexico.
 — *Rozelia*'na. Mexico. 1869.
 — *Roharii*. Mexico. 1862.
 — *rubeescens*. Mexico. 1834.
 — *rudis*. Mexico. 1864.
 — *rupicola*. 8. Yellowish. Mexico. 1858.
 — *Salma*'na. 20 to 30. Greenish-yellow. Mexico. Syns., *A. atrovirens*, *A. tehuacensis*, *A. Jacobiana*.
 — *saponaria*. Brown. July. Peru. 1838.
 — *Sartorii*. 6. Green. Mexico. 1860. Syns., *A. Noachii*, *A. cæspitosa*, *A. pendula*.
 — *Saundersii*. 14. Green. Mexico. 1865.
 — *schidiifera*. 6. Greenish. Mexico. 1861.
 — *Schnitzgeri*'hni. Mexico.
 — *Scollernii*. 14. Greenish-yellow. Mexico. 1830. Syns., *A. amœna* and *A. auricantha*.
 — *Seemannii*. 6. Nicaragua. 1868.
 — *acuata*. Nicaragua. 1869.
 — *papillosa*. Nicaragua. 1869.
 — *parviflora*. Nicaragua. 1869.
 — *serrulata*. Mexico. 1842.
 — *Shawii*. 10. Yellowish-green. California. 1877.
 — *Siemensii*. Mexico. 1871.
 — *Smithia*'na. Mexico. 1865.
 — *sobolifera*. 10. Yellow. W. Indies. 1678.
 — *spicata*. 15. Greenish. Cuba. 1802.
 — *spicidens*. Mexico.
 — *striata*. 6. Yellow, green. Mexico. 1856.
 — *Richardsii*. Mexico.
 — *striata*. Mexico. 1869.
 — *Theometel*. 10. Yellowish-green. Mexico.
 — *Thomsonia*'na. Mexico. 1865.
 — *Tonelia*'na. 2. Mexico? 1881.
 — *triangularis*. Mexico. 1869.
 — *undulata*. 3. Mexico. 1840.
 — *univittata*. Green. Mexico. 1830.
 — *Vanderwini*. Mexico.

- A. variegata*. 1½. Green. Leaves green, with dark blotches. Texas. 1865.
 — *Verschaffeltii*. 12. Green. Mexico. 1868.
 — *variegata*. Leaves with a central yellow stripe. Mexico. 1871.
 — *Victoria Reginae*. 8. Mexico. 1875. Syn., *A. consideranti*.
 — *villatum*. Garden hybrid. 1886.
 — *virginica*. 3. Purple. N. Amer. 1765.
 — *viridissima*. Mexico. 1877.
 — *vivi para*. 15. Green. September. S. Amer. 1731. Syns., *A. cantula*, *A. bulbifera*.
 — *Wallisii*. Columbia. 1867.
 — *Weylandia*. Mexico?
 — *Weissenburgensis*. 8. Greenish-yellow. Mexico? 1885.
 — *Wislizeni*. 12. Mexico.
 — *xalapensis*. 13. Mexico. 1875.
 — *xylotricha*. 8. Green. Mexico. Syn., *A. Vanderdonkii*.
 — *vittata*. Syn., *A. hybrida*.
 — *yuccaefolia*. 6. Yellow. 1816.

Agenor'a. See Seriola.

Agertum. (From *a*, not, and *geras*, old; in reference to the flowers being always clear. Nat. ord., *Compositae*.)

Half-hardy annual, biennial, and perennial herbs, but may be kept perennials if not allowed to ripen seeds. Light rich soil; seeds and cuttings in autumn. *A. mexicanum* is largely used for summer beddings.

- A. angustifolium*. 1. White. July. Monte Video. 1827.
 — *cœruleum*. 1. July. W. Ind. 1800.
 — *coelestinum*. 4. Blue. B. M. t. 1730.
 — *conyzoides*. 1. Light blue. July. America. 1714.
 — *Lasseauxii*. Rose. Monte Video. 1870. Rev. Hort. 1870, p. 90.
 — *latifolium*. 2. White. July. Peru. 1800.
 — *mexicanum*. 2. Blue. June. Mexico. Swt. Fl. Gard. t. 89.
 The best of the garden varieties are, Snowflake, Cupid, Swanley blue, Queen, Imperial dwarf, Lady Jane, and the white flowered and variegated forms.
 — *punctatum*. Jacq. H. Schenb. t. 300. See *Stevia*.
 — *strictum*. 2. White. June. Nepaul. 1821.
 — *suffruticosum*. Gf. t. 108.
 — *Wendlandii*. 3. Blue. Mexico. 1885.

Aglaia. (The name of one of The Three Graces. Nat. ord., *Meliaceae*.)

Stove evergreen tree or shrub. Light loam, decayed dung, and peat; half-ripe cuttings in sand, under a glass, in a cool house.

- A. odorata*. Striped. February. China. 1810. Wight Icon. t. 511.

Aglaomorpha. See **Polypodium.**

Aglaone'ma. (From *aglaos*, bright, and *nema*, a thread; probably referring to the shining stamens. Nat. ord., *Aroideae*.)

Stove evergreen perennials; leaves often variegated. Moist atmosphere. Sandy loam and peat. Seeds, divisions, or by cuttings of the stem, under a hand-glass in heat.

- A. acutispatum*. Light green; leaves dark green, paler beneath. Canton?
 — *commutatum*. 1. White; leaves blotched with greyish. Philippines. 1863. Syn., *A. marantæfolium maculatum*. B. M. t. 5500.

A. Hookeri num. Spathe green, paler inside. Cachar. 1874.

- *Lavallei*. See *Schismatoglottis Lavallei*.
 — *Ma'nini*. 1½. Whitish. Victoria Mountains, W. Africa. 1868. B. M. t. 5760.
 — *nebulosum*. Leaves bright dark green, irregularly blotched with whitish-green. Java. 1887.
 — *nitidum*. 4. Cream colour. Penang.
 — *pictum*. 1 to 2. White; leaves blotched. August. Borneo. 1880.
 — *compactum*. Shining green. Java. 1888.
 — *simplex*. 2 to 3. White. July. Java.

Agrostus. See **Stenocarpus.**

Agonopteris. See **Acrostichum.**

Agrimonia. Agrimony. (From *agremone*, a plant used by the Greeks in cataract of the eye. Nat. ord., *Rosaceae*.)

Hardy herbaceous plants. Seeds or division; common garden-soil.

- A. Eupatoria*. 3. Yellow. June. Britain. Eng. Bot. ed. 3, t. 417.
 — *nepalensis*. 3. Yellow. June. Nepaul. 1820.
 — *odorata*. 4. Yellow. July. Italy. 1640. Eng. Bot. ed. 3, t. 418.
 — *suaveolens*. 3. Yellow. July. Virginia. 1810

Agromyza Violæ. Pansy Fly. Attacks the flower by puncturing the petals, and extracting the juice; the puncture causes the colouring matter to fade. Very minute; shining black; bristly; eyes green; head orange. Appears in May.

Agrostemma. See **Lychnis.**

Agrostis. Bent grass. (From *agros*, a field; the Greek name for a kind of grass. Nat. ord., *Gramineae*.)

Seeds in spring, in ordinary soil, in the open.

- A. elegans*. 1. Russia. 1834.
 — *nebulosa*. 1½.
 — *puicheilla*. ½ to 1. Russia.
 — *spica-venti*. England.

Agrotis. The Turnip Moth. See **Turnip.**

Ailanthus. (From *ailanto*, tree of heaven; referring to its lofty growth. Nat. ord., *Simarubaceae*.)

Tall deciduous trees, effective on lawns, etc. Cuttings of the roots in pots of sand with bottom-heat; sandy loam and peat for stove species. The hardy ones thrive best in light humid soil, and are best in sheltered situations.

- A. erythrocarpa*. Fruit, coral red. Hardy. 1867.
 — *excolta*. 50. Green. E. Ind. 1800. Stove.
 — *glandulosa*. 20. Green. China. 1761. Hardy.

Ainsliea. (In honour of Dr. White-law Ainslie, author of a work on Indian drugs. Nat. ord., *Compositae*.)

Pretty, herbaceous perennials, which, although tolerably hardy, require protection from severe frosts. Light rich soil. Seeds or division.

- A. aptera*. Purple. Sikkim Himalaya. 1832.
 — *Walkei*. 1. White. Hong Kong. 1875.
 — B. M. t. 6225.

Air is the name popularly applied to the gaseous envelope surrounding the

earth, and extending to a distance of about 45 miles above sea-level. It consists of a mixture of gases, existing in an almost unvarying proportion, from whatever station taken, viz :—

Oxygen, by weight, 23 parts; by volume, 20·8 parts.

Nitrogen, by weight, 77 parts; by volume, 79·2 parts.

Carbonic anhydride (incorrectly called carbonic acid), although present to only an average proportion of '03 per cent., is of immense importance to plant life, being the chief source whence the plant derives carbon, which forms such a large proportion of its substance. Watery vapour and ammonia gas are also constantly present, but in varying quantities, in atmospheric air. From the ammonia the plant derives part of its nitrogen. It is of great importance that plants should have a constant supply of pure air.

Air (Giving) is a term commonly used by gardeners to denote lowering the upper sashes of the house, pit, or frame, to allow the escape of excessive heat, bad air, and vapour, and opening, at the same time, the front sashes to admit fresh air. The openings should be so regulated as to equalize the escape and supply, according to the requirements of the plants under treatment.

Ai'ra. (From *aira*, the Greek name for *Solium tremulentum*. Nat. ord., *Gramineæ*.)

Hardy grasses. Ordinary garden-soil. Seeds in spring.

A. flexuosa. 1½. Shining brown. England.
A. pulchella. ½. South Europe.

Air-plant. *Aerides*, and other Epiphytes.

Aito'nia. (In honour of Mr. W. Aiton, once head-gardener at Kew. Nat. ord., *Sapindaceæ*.)

Greenhouse evergreen shrub. Loam and peat; cuttings of young wood, in sandy loam, under a glass, with bottom-heat. Care must be exercised, as they are apt to damp off.

A. capensis. 2. Pink. July. Cape of Good Hope. 1777. B. M. t. 173.

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 annuals, biennials, or evergreen sub-shrubs, chiefly natives of S. Africa. Seeds, cuttings. Light sandy soil. Dry atmosphere, no shade.

A. sarmientosum. Greenish-white. S. Africa. 1862. Ref. Bot. t. 6.

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 *zuga*, a yoke; in reference to the calyx being one-leaved. Nat. ord., *Labiatae*.)

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

ANNUALS.

A. chamaepitys. 1. Yellow. July. England.
— *I'va*. 1. Yellow. May. South of Europe. 1759.

PERENNIALS.

A. australis. 1. Blue. July. Australia. 1822
— *foliosa*. 1. Blue August. Switzerland. 1826.
— *furcata*. See *Anisomeles*.
— *genevensis*. 1. Flesh. July. Switzerland. 1656. Syns. *A. alpina* and *A. rugosa*.
— *integrifolia*. 1. Blue. June. Nepaul. 1821.
— *orientalis*. 2. Blue. June. Levant. 1752.
— *pyramidalis*. ½. Blue. May. Britain. A beautiful plant.
— *repans*. ½ to 1. Blue purple. May. Britain. Some forms have dark leaves. Eng. Bot. ed. 3, t. 1088.
— *rubra*. 1. Red. May. Britain.
— *variegata*. 1. Blue. April. Britain.
— *rupesstris*. 1. Blue. May. Switzerland. 1826.

Ake'bia. (The name it bears in Japan, where the fruit is used as an emollient medicine. Nat. ord., *Berberideæ*.)

A. quinata. Lilac-pink. March. Chusan. 1845. B. M. t. 4864. Evergreen twiner, hardy in the southern counties of England against walls. May be grown in the open in Scotland, but requires protection in severe weather. Useful as twiner for cool greenhouse or conservatory. Root division, cuttings, and seed. Sandy loam, peat, and leaf-soil.

Akee-tree. *Bl'ghia sa'pida*.

Ala'ngium. (The Malayan name for two trees, bearing fruit not palatable to Europeans. Nat. ord., *Cornaceæ*.)

Showy stove evergreen trees. Loam and peat; cuttings under glass, with bottom-heat.

A. decapetalum. 10. Pale purple. E. Ind. 1779. Wight Icon. t. 194.
— *hexapetalum*. 15. Purple. E. Ind. 1823. Wight II. t. 96.

Alate'rnus. *Rha'mnus alate'rnus*.

Albi'zzia. (In honour of an Italian gentleman. Nat. ord., *Leguminosæ*. Allied to *Acacia*.)

Handsome greenhouse or hardy trees and shrubs. For cultivation, see *ACACIA*, under which genus the species were formerly included. *A. lophantha* is a fine greenhouse plant, largely used in window gardening, and house decoration.

A. Julibr'assin. Pink. Sub-tropical and Temperate Asia. 1745. Syns. *A. rosea*, *Acacia mollis*, and *A. Nemu*.

— *Le'bbeek*. White. Tropical Africa and Asia 1786. Bedd. Fl. Syl. t. 53. Syns. *Acacia Lebbeek* and *A. speciosa*.

— *lophantha*. White. S. W. Australia. 1803. B. R. t. 361.

— *odoratissima*. 40. White. E. Ind. 1790. Syn., *Acacia odoratissima*.

- A. pro'cera*. 5. Yellow. E. Ind. 1812. Syn.,
Adenantha falcata.
 — *stipula'ta*. 20. White. Bengal. 1800. Syn.,
Acacia stipula'ta.

Albu'ca. (From *albicans*, or *albus*, white; referring to the prevalence of white flowers in the genus. Nat. ord., *Liliaceæ*.)

A genus of beautiful bulbous plants requiring greenhouse treatment; all from the Cape of Good Hope, except the first-named. Sandy loam and leaf-soil; offsets from the old bulbs, or seeds. Well adapted for planting out in a border of light loam, in front of a greenhouse; to be covered from frost like *Ixias*.

- A. abyss'nica*. 2. White. August. 1818. Jacq. Ic. t. 64.
 — *Alle'nae*. 3. Greenish-white. Zanzibar. 1887.
 — *alt'i'ssima*. 4. White. May. 1789. Jacq. Ic. t. 63.
 — *angole'nsis*. 3. Yellow, green. Angola. Ref. Bot. t. 336.
 — *au'rea*. 2. Greenish-yellow. June. 1818. Jacq. Ic. t. 441.
 — *cauda'ta*. 2. Yellow. June. 1791. Jacq. Ic. t. 442.
 — *coarcta'ta*. 2. White. June. 1774.
 — *Coope'ri*. $\frac{3}{4}$. Yellowish-green. S. Africa. 1862. Ref. Bot. t. 334 as *A. flaccida*.
 — *corymbo'sa*. 1. Yellow, banded green. Port Elizabeth. 1836.
 — *exuvia'ta*. See *Urginea exuvia'ta*.
 — *fastigia'ta*. 2. White. June. 1774. B. R. t. 277.
 — *fibro'sa*. 1. Yellow, green. S. Africa.
 — *filifo'lia*. See *Urginea filifo'lia*.
 — *flaccida*. 2. Yellow, green. June. 1791. Jacq. Ic. t. 444.
 — *fra'grans*. 1. Yellow, green. July. 1791. Jacq. H. Schœn. t. 84.
 — *fu'gaz*. See *Urginea fugaz*.
 — *Garde'ni*. B. M. t. 4842. See *Speirantha Gardeni*.
 — *glandulo'sa*. $\frac{1}{2}$. White, green, yellowish. S. Africa.
 — *juncifo'lia*. 1. Yellow, green. S. Africa. 1876. B. M. t. 6395.
 — *ma'jor*. 3. Green, yellow. May. 1759. B. M. t. 804.
 — *mi'nor*. 1. Yellow. May. 1768. B. M. t. 720.
 — *Nelso'ni*. 4. White, dull-red. June. Natal. 1880. A very fine plant.
 — *physo'des*. See *Urginea physodes*.
 — *polyphy'lia*. $\frac{1}{2}$. White, green. March. S. Africa. 1872.
 — *seto'sa*. 1. Green. June. 1795. Jacq. Ic. t. 440.
 — *spira'lis*. 1. White. June. 1795. Jacq. Ic. t. 439.
 — *tenuifo'lia*. $\frac{1}{2}$. Pale yellow, green. S. Africa. Ref. Bot. t. 335.
 — *trichophy'lia*. Bright yellow. Natal. 1880.
 — *viridifo'ra*. 1. Green. June. 1794. Jacq. Ic. t. 446.
 — *viso'sa*. 1. White, green. June. 1779.
 — *vitta'ta*. See *Ornithogalum vittatum*.
 — *Wakefie'ldii*. 1. Green. Summer. E. Tropical Africa. 1879. Syn., *A. Elwesii*. B. M. t. 6429.

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., *Rosaceæ*.)

Hardy herbaceous or greenhouse perennials. Adapted for rockeries or borders. Ordinary garden-soil; seeds, or divisions.

GREENHOUSE.

- A. cape'nsis*. 1. Green. June. Cape of Good Hope. 1818.
 — *sibbaldicefo'lia*. 1. White. June. Mexico. 1823.

HARDY.

- A. alpi'na*. 1. Green. June. Britain. Fl. Dan. I. t. 49.
 — *fi'sea*. 1. Green. July. Switzerland. 1826. Rehb. Ic. Crit. t. 4.
 — *pentaphy'lia*. 1. White. July. Switzerland. 1784.
 — *pube'scens*. 1. Green. July. Caucasus. 1813. Rehb. Ic. Crit. t. 4.
 — *sericea*. 1. Green. July. Caucasus. 1813.

Alco've. A recess with seats, an ornamental building.

A'lder. See **A'lnus**.

Ale'tris. (From *aleiar*, wheaten-flour; referring to the powdery appearance of the whole plant. Nat. ord., *Hæmodoraceæ*.)

A. farinosa is the most intense of bitters known. Hardy herbaceous perennials. Shady situation. Peat or loam and leaf-soil; offsets, seeds.

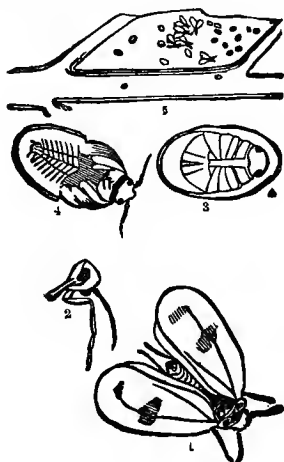
- A. au'rea*. 1. Yellow. July. N. Amer. 1811.
 — *cape'nsis*. See *Veltheimia viridiflora*.
 — *farinosa*. 1. White. June. N. Amer. 1768. B. M. t. 1418. Star grass. Colic root.

Aleuri'tes. (The name is the Greek word for *mealy*; in reference to the mealy appearance of the plants. Nat. ord., *Euphorbiaceæ*. Allied to *Croton*.) Stove evergreen trees. Loamy soil. Ripe cuttings root readily in sand, under a glass, in heat.

- A. corda'ta*. Japan. 1818.
 — *tri'loba*. 10. October. Society Islands. 1793.

Aleyro'des prolete'lia. The Cabbage Powdered-wing is produced some years in such innumerable quantities as to become a very troublesome pest, as it deteriorates the value and quality of the various kinds of cabbages it attacks, weakening or destroying their leaves by sucking their juices. The perfect insect (Fig. 1, magnified) is about one-tenth of an inch in length, the head and thorax are blackish, the abdomen yellowish, and the legs black, powdered with white. All the wings are snowy white; the two front ones are marked with one or two spots of pale grey. In places where they are abundant, when disturbed they rise in the air and resemble miniature snow-flakes. The eggs are deposited upon the under side of the leaf. The larvæ, soon after hatching, form a scale over themselves, and thus resemble a scale insect (Fig. 3 A, magnified), and produce the dull yellow-and-white incrustation which cover the infested part of the cabbage-leaf. The larva changes to the pupa state (Figs. 3 and 4, magnified) under

the protection of its scale-like shield, and the perfect insect emerges through the shield in rather less than a month (according to Curtis) from the deposition of the egg. The only remedy likely



to be of avail in badly affected places is complete rotation of crops. For our illustration, we are indebted to the proprietors of the *Gardeners' Chronicle*. Fig. 5 represents a portion of a cabbage leaf, with larvæ, pupæ, and perfect insects (natural size).

Alexander or **Alisander**. (*Smyr-nium olusatrum*) received its common name from the Greek, which means "a defender 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.

Hardy perennial, not ornamental, propagated by division or seeds.

Alexandrian Laurel. *Ruscus racemosus*.

Alhagi. (The Arabic name of the plant. Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*.)

The secretion from the leaves and branches of *A. Maurorum*, due to their being punctured by an insect, is supposed by some to be the manna of Scripture. It is worthy of remark, that this secretion is found only in northern Persia, where it is highly esteemed as food for camels, whence it is called camel-thorn. Greenhouse shrubs or sub-shrubs. Sandy loam and peat; young cuttings and seeds, the first in sand.

A. camelorum. 2. Red. July. Siberia. 1816.
— *Maurorum*. 2. Red. July. Egypt. 1714.
Sibth. Fl. Gr. t. 720. Syn., *Hedysarum Alhagi*.

Alibertia. (In honour of *Alibert*, a French chemist. Nat. ord., *Rubiaceæ*.) Ornamental stove evergreen tree. Cuttings in sand, under a bell-glass, in moist heat; sandy peat.

A. dulcis. 12. Cream-coloured. Guiana. 1823.

Alibrexia tomentosa. See *Dolia*.

Alisander. See *Alexander*.

Alisma. Water Plantain. (From the Celtic word *alis*, water. Nat. ord., *Alismaceæ*.)

Hardy aquatics. Division or seed, loamy soil immersed in water.

A. Damasorum. See *Damasonium*.

— *notans*. See *Etiema*.

— *plantago*. 2. Pure white. July. Britain. Eng. Bot. ed. 3, t. 1437. Syns., *A. parvistora* and *trivialis*.

— *lanceolata*. 2. Pure white. July. Britain.

— *ranunculoides*. 1. White. August. Britain. Eng. Bot. ed. 3, t. 1439.

Alkanet. *Anchusa tinctoria*.

Allamanda. (In honour of *Dr. Allamand*, of Leyden. Nat. ord., *Apocynaceæ*.)

This order is remarkable for handsome flowering plants, with deleterious qualities. An infusion of the leaves of *A. cathartica* is a valuable purgative. Handsome stove evergreen climbers. Rich loam; cuttings root readily in sand, with good bottom-heat and moist air.

A. Aubletii. Yellow. Guiana. 1848. B. M. t. 4411.

— *cathartica*. 12. Yellow. July. Guiana. 1785. B. M. t. 338 and t. 4351.

— *Chelsoni*. Yellow. West coast of Africa. 1871;

— *grandiflora*. Same as *A. cathartica*.

— *Hendersoni*. Yellow. British Guiana. 1865.

III. Hort. vol. 12, t. 452. Syn., *A. cathartica*, var. *Hendersoni*. Gff. 1887, p. 554.

— *magnifica*. Clear yellow, throat orange. A variety of *A. Schottii*.

— *nerifolia*. Yellow. June. 1851. B. M. t. 4594.

— *no-bills*. Yellow. July. Brazil. 1867. B. M. t. 5764.

— *Schottii*. Yellow. September. Brazil. 1847.

— *verticillata*. June. E. Indies. 1812.

— *violacea*. Purple. Brazil. 1859. Re-introduced 1889. B. M. t. 7122.

— *Wardleana*. Yellow, outside maroon. New Grenada. 1851.

Allantodia. (From *allantos*, a sausage; in reference to the cylindrical form of the indusium, or the case which incloses the seeds of ferns. Nat. ord., *Filices*—*Polypodiaceæ*.)

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

A. australis. Brown. Van Diemen's Land. 1820.

— *axillaris*. 2. Brown. Madeira. 1779.

— *strigosa*. 2. Brown. Madeira.

— *tenera*. 1. Brown. Australia. 1820.

— *umbrosa*. 4. Brown. Madeira. 1779.

Allardtia. See *Tillandsia*.

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. *Pe'rseagrati'ssima.*

Allio'nia. (In honour of *C. Allioni*, an Italian botanist. Nat. ord., *Nyctaginaceæ*. Allied to the Marvel of Peru, *Mirabilis*.)

Hardy annual. Seeds; sandy loam.

A. incarnata. 1. Flesh. August. Cumana. 1820.

— *ovata*. See *Oxyba'phus floribundus*.

— *violacea*. See *Oxyba'phus viola'ceus*.

Allium. (From the Celtic *all*, meaning hot, or burning; referring to the well-known qualities of the onion. Nat. ord., *Liliaceæ*.)

Hardy bulbs of easy culture. Many of them are showy, and useful for the borders of rockery. Seeds and offsets; ordinary soil. *A. neapolitanum* is largely imported for forcing in early spring.

A. acuminatum. $\frac{3}{4}$. Deep rose. July. N. W. America. 1840.

— *rubrum*. Deep red-purple. California.

— *Alexianum*. Whitish, striped brownish-purple. Turkestan. 1890.

— *amblyophyllum*. 2. Purple. Turkestan. 1885. Gf. t. 1190.

— *ammodendrum*. Whitish-yellow, with red nerves. Austria. 1890.

— *ampeloprasum*. 2. Purple. May. England.

— *anceps*. $\frac{3}{4}$. Purple. May. California. 1875.

— *Andersonii*. 1. Purple. July. Siberia. 1818.

— *angulosum*. 1. Light purple. June. Germany. 1739.

— *ascalonicum*. 1. Purple. June. Palestine. 1546.

— *maxus*. 1. Purple. July. South of Europe.

— *asperum*. 1. Purple. August. South of Europe. 1800.

— *azuleum*. 1. Blue. October. 1830.

— *Bachousianum*. 3. Himalayas. 1885.

— *Bauerianum*. 1. Pale red. Cyprus. 1874.

— *Bidwellii*. $\frac{3}{4}$. Bright rose. July. Sierra Nevada. 1880.

— *brachystemon*. 1. White. June. Europe. 1819.

— *Breweri*. $\frac{3}{4}$. Deep rose. July. California. 1882.

— *caeruleum*. Blue. June. Russia. 1840.

— *caespitium*. 3. Green. May. Astrachan.

— *cepa*. 3. White. June. The Onion.

— *aggregatum*. 1. White. June.

— *pauciflorum*. 2. White. June.

— *cepaeforme*. 2. White. August. 1824.

— *cineereum*. 1. Straw. July. Siberia. 1829.

— *confertum*. 4. Purple. August. Europe.

— *congestum*. 1. Purple. May. Siberia. 1818.

— *controversum*. 1. Purple. 1816.

— *cyanum*. Blue. Kansu, N. China. 1890. Syn., *A. cyaneum*, var. *macrostemon*.

— *descendens*. 1. July. Purple. Switzerland. 1796.

— *Dioscoridis*. Purple, green, white. June. Sicily. 1832. Syn., *Nectaroscordum Stuculum*. B. R. t. 1913.

— *elatium*. 3. Purple. Central Asia. 1887. Gf. t. 1251.

— *Erdelii*. $\frac{3}{4}$. White. Palestine. 1879.

— *falcifolium*. $\frac{3}{4}$. Pale rose. August. N. W. America. 1880.

— *falcifolium*. $\frac{3}{4}$. White. California. 1882.

— *Fetisovii*. Rosy-lilac. Turkestan. 1879.

A. Fischeri. 1. Lilac. July. Siberia. 1829. — *fistulosum*. 2. Green, yellow. April. Siberia. 1629.

— *flavum*. 1. Yellow. Italy. 1759.

— *fragrans*. B. R. t. 898. See *Nothoscordum*.

— *giganteum*. $\frac{1}{4}$. Rose lilac. Merv, not Himalayas. 1883. Gf. t. 1113.

— *glaucum*. Pink. June. Siberia. 1800.

— *gracile*. Andr. Rep. t. 107. See *Nothoscordum*.

— *guttatum*. 1. White, purple. Tauria.

— *hierosolymæ*. $\frac{3}{4}$. White. Palestine. 1889.

— *Holtzei*. $\frac{1}{4}$. White, anthers rose. Turkestan. 1880. Gf. t. 1169.

— *illyricum*. 1. Purple. July. Austria. 1820.

— *indorum*. B. M. t. 1129. See *Nothoscordum*.

— *intermedium*. 2. White. August. South of Europe. 1827.

— *kansuense*. Blue. Kansu, N. China. 1890. Syn., *A. cyaneum*, var. *brachystemon*.

— *kanataviense*. $\frac{3}{4}$. White. Turkestan. May. 1878.

— *litoreum*. 2. Purple. Italy. 1818.

— *longifolium*. 1. Dark purple. July. Mexico. 1826.

— *Macleodii*. Mauve, purple. Cabul. Summer. 1882. B. M. t. 6707.

— *Macnabianum*. 1. Deep rose. N. America.

— *macroanthum*. 2 to 3. Deep purple. E. Himalayas. 1883. B. M. t. 6789.

— *magnum*. See *A. nigrum*.

— *medicum*. 1. White. June. Hungary. 1820.

— *moily*. 1. Yellow. June. South of Europe. 1604.

— *Murrayanum*. 1. Lilac. N. America.

— *mutabile*. 1 to 2. White or rose. July. N. America. 1824.

— *narcissiflorum*. $\frac{3}{4}$. Deep purple. Italy. 1875.

— *neapolitanum*. $\frac{1}{4}$. White. S. Europe. 1823.

— *nevadense*. $\frac{3}{4}$. White or rose. Sierra Nevada. 1882.

— *nigrum*. 3. Violet or whitish. June. S. Europe. Syn., *A. magicum*.

— *odoratum*. 1. White, pink. July. Siberia.

— *ophioscorodon*. 4. Pale red. August. Greece.

— *oreophilum*. 1. Reddish-purple. Turkestan.

— *orientale rubellum*. Bright rose. 1889.

— *Ostrowskianum*. 2. Purple. W. Turkestan. 1882. Gf. t. 1089.

— *oviflorum*. 3. Dark lilac. Tibet and Sikkim. Gf. t. 1134.

— *oxyptalum*. 2. White. August. South of Europe. 1818.

— *paradozum*. 1. White. Siberia.

— *parviflorum*. $\frac{3}{4}$. Purple. Corsica and Sardinia. 1888.

— *pedemontanum*. 1. Reddish-violet Piedmont. 1879.

— *poirum*. 2. White. Switzerland. 1562. The Leek.

— *proliferum*. 3. White. 1820.

— *Przewalskianum*. Rosy-lilac. Kansu, China. 1890.

— *puberulum*. Yellow. June. South of Europe.

— *Purshii*. 2. Pink. August. N. Amer. 1818.

— *ramosum*. 2. Pale yellow. June. Siberia. 1819.

— *reticulatum*. 1. Pink or white. Summer. N. W. America. 1882.

— *alternifolium*. N. W. America.

— *roseum*. 1. Pale rose. Summer. S. Europe. 1752.

— *sativum*. 2. White. June. Sicily. 1548. The Garlic.

— *schenoprasum*. $\frac{3}{4}$. Flesh. May. Britain.

— *scorodoprasum*. 3. Light purple. July. Denmark. 1596.

— *scorzonerifolium*. 1. Yellow. June. South of Europe. 1820.

— *Semenovi*. Yellow. Alatan Mts. 1884. Gf. t. 1156.

— *semiretschenskianum*. Flesh-coloured. Wernoe. 1879.

- A. sphaerocéphalum*. 2. Reddish-purple. S. Europe. 1759.
 — *Sprengeri*. Yellowish. Jaffa. 1889.
 — *spuriūm*. 1. Purple. June. Siberia. 1820.
 — *stipitatum*. 6. Purple violet. Bokhara. 1881.
 — *stramiūm*. 1. Straw-yellow. Manchuria. 1877.
 — *striatum*. B. M. tt. 1035, 1524. See *Nothocordum*.
 — *subhirsutum*. 2. White. July. S. Europe.
 — *triquestrum*. 1½. White, green. S. Europe.
 — *unifolium*. 1 to 2. Mauve-pink. July. California. 1873.
 — *ursinum*. 1. White. Summer. Britain.
 — *validum*. 2. White or rose. Summer. California. 1881.
 — *Victoriae*. 2. Green, yellow. May. Austria. 1739.
 — — *angustifolium*. 1. Green, yellow. April. Scotland.
 — *violaceum*. 1. Violet. June. Europe. 1823.
 — *Waldsteini*. 2. June. Hungary. 1826.

Alloplectus. (From *allos*, diverse, and *plekein*, to plait; in reference to the leaves. Nat. ord., *Gesneraceae*.)

Pretty stove evergreen shrubs. Light, rich soil; cuttings.

- A. bicolor*. Leaves velvety-green, with a central silvery-grey band. S. America. 1869.
 — *capitatus*. 3. Red, yellow. March. S. America. 1848. B. M. t. 4452.
 — *chrysanthus*. Yellow. Columbia. 1853.
 — *cocneor*. Red. Brazil. 1846. B. M. t. 4371.
 — *dichrois*. 2. Purple, yellow. Brazil. 1845. B. M. t. 4216. Syns., *Hypocysta discolor*, *A. Schottii*, and *sparsiflorus*.
 — *peltatus*. 1. Yellow. August. Costa Rica. 1877.
 — *repens*. Yellow, brown. February. St. Martha. 1845. This is a climbing plant.
 — *Schlimii*. Purple, yellow. N. Grenada. 1851. Fl. Ser. t. 827.
 — *vittatus*. Yellow, calyx crimson. Peru. 1870.
 — *zamorensis*. 1. Yellow, calyx orange-red. Columbia. 1875.

Allosorus. (Nat. ord., *Filices*.)

- A. acrostichoides*. See *Cryptogramme crispata* var.
 — *calome-lamos*. B. M. t. 4769. See *Pteris calomelanos*.
 — *cordatus*. B. M. t. 4698. See *Pellaea cordata*.
 — *crispus*. See *Cryptogramme crispata*.
 — *flexuosus*. See *Pellaea cordata flexuosa*.
 — *imbricatus*. See *Jamesonia*.
 — *Karwinskii*. See *Llavea cordatifolia*.

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. These allotments are let for one year only, and may be re-let to the same occupier, if his character has been satisfactory, and his allotment has been kept clean, and well cultivated during the preceding year.

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.

Almeidea. (After *J. R. P. de Almeida*, a Brazilian. Nat. ord., *Rutaceae*.)

Evergreen stove shrub. Light loam, sand and peat. Cuttings of half-ripened wood under a bell-glass in heat.

- A. rubra*. 5. Pink. September. Brazil. 1850. B. M. t. 4543.

Almond. *Prunus Amygdalus*, also known as *Amygdalus communis*.

Alnus. 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., *Cupuliferæ*; Tribe, *Betuleæ*.)

Hardy deciduous trees. The flowers have no petals. Layers, or seeds; light loam, in moist situation.

- A. barbata*. March. Russia. 1838.
 — *canadensis*. June. Canada.
 — *cordifolia*. June. Naples. 1818.
 — *firma*. Japan.
 — *glauca*. June. N. Amer. 1820.
 — *glutinosa*. April. Britain.
 — — *au'rea*. Leaves golden-coloured.
 — — *emarginata*. April. Britain.
 — — *foliis variegatis*. April. Britain.
 — — *incisa*. April. Britain.
 — — *laciniata*. April. Britain.
 — — *quercifolia*. April. Britain. 1838.
 — — *incana*. 20. June. Europe. 1780.
 — — *angulata*. 20.
 — — *pinnata*. 26. June. Europe.
 — *japonica*. Japan. 1886.
 — *Jorullensis*. Mexico.
 — *macrocarpa*. 20. June.
 — *macrophylla*. 20. June. Naples.
 — *obcordata*. March. Russia.
 — *oblongata*. 20. June. South of Europe. 1730.
 — — *elliptica*. 20. June.
 — *oxyacanthifolia*. 20. June.
 — *pu'mila*. 10. June.
 — *rhombofolia*. California. 1886.
 — *rubra*. 20. June.
 — *rugosa*. March. N. Amer.
 — *serrulata*. 20. June. N. Amer. 1769.
 — *sibirica*. Siberia. 1820.
 — *subrotunda*. 23. April.
 — *viridis*. Mountains of the N. Temperate Zone.

Alcoa'sia. (From *a*, without, and *Colocasia*. Nat. ord., *Araceae*. Allied to *Colocasia*.)

Stove perennials, usually with large and handsomely variegated leaves. Natives of India, Indian Archipelago, and Pacific Isles. Rich sandy loam, fibrous peat, sphagnum, and small pieces of charcoal, well drained; moist atmosphere, with shade. Seeds, and division of the stem or rhizome. See also CALADIUM.

- A. a'ba*. 1½. White. Java. 1854.
 — *ambilis*. 1. Whitish. Borneo. 1877.
 — *Augustiana*. Bright green above, paler beneath. Papua. Ill. Hort. t. 593.
 — *cuculla'ta*. 2. Green, whitish. Spring. India. 1826.
 — *cu'prea*. 1 to 1½. Purplish, white. Borneo. 1860. Syns., *A. metallica*, *A. plumbea*, and *Xanthosoma plumbea*.
 — *e'minens*. Leaf dark green above, purple, with pale green veins beneath. Spathe green. E. Indies. 1887.
 — *Gaula'nii*. Leaves dark green, with silvery nerves above; light violet, with blackish nerves beneath. 1890.
 — *gra'ndis*. 5. Spathes white, striped carmine outside. E. Indian Archipelago.
 — *gutta'ta*. 2½. Spathe white, spotted with purple. Leaf-stalks also spotted. January. Borneo. 1879.
 — *illu'stris*. Leaves rich green, with olive-black patches. India. 1873.
 — *i'ndica*. 2. Whitish, green. India.
 — *Jenni'ngsii*. Leaves green, with blackish patches between the veins. India. 1867.
 — *Johnsto'ni*. Leaves red-veined, stalks spiny. Solomon Isles. 1875. See *Cyrtosperma Johnstoni*.
 — *Liero'la'ti*. Leaves bright green. Philippines. 1869.
 — *Linde'ni*. Spathe pale green, spadix white. Papua. Ill. Hort. t. 603.
 — *longilo'ba*. 1½. Green, whitish. Leaves green, with silvery veins. Java. 1864. Syn., *A. gigantea* of gardens.
 — *Lo'wit*. 1. White; leaves dark green above, with the midrib, veins, and margin whitish, under side deep purple. Borneo. 1862. Syn., *Caladium Lowii*.
 — *macrorrh'za*. 5. Green, whitish. Polynesia.
 — *variega'ta*. Leaves blotched with cream.
 — *margarit'e*. Dark green. Java, 1886. Ill. Hort. t. 611.
 — *marginata*. 3½. Dark green. Spathe greenish, with dark lines and dots. Brazil. 1887.
 — *Marsha'lii*. Leaves green, with dark blotches, and broad central silvery band. India. 1871.
 — *navicul'a'ris*. 1. Whitish. May. India. 1855.
 — *pr'i'nceps*. Leaves olive green, greyish beneath, with prominent chocolate-brown veins. Malay Archipelago. 1888.
 — *pu'mila*. ½. Green. January. Borneo. 1879.
 — *Putze'ysi*. Leaves dark green above, purple beneath; veins pale green. Sumatra. 1882. Ill. Hort. t. 439.
 — *Regi'næ*. Leaves dark green above, brownish-purple beneath. Spathe whitish. Borneo. 1884. Ill. Hort. t. 544.
 — *rev'e'rsa*. 1. Leaves grey-green, veins darker. Philippine Islands. 1890.
 — *Ro'e'zli*. See *Caladium marmoratum*.
 — *Sanderia'na*. Leaves metallic blue, veins white. Indian Archipelago. 1884. Gf. 1886, p. 452.
 — *scabriu'scula*. Spathe and spadix white. N.W. Borneo. 1878.
 — *singapore'nsis*. 1½. Penang.
 — *sinua'ta*. Spathe green, spadix white. Philippines. 1886.
 — *Thibauria'na*. 2. Leaves dark green, with white venation above, purple beneath. Borneo. 1878.
 — *variega'ta*. 1. Whitish. India. 1854. Leaf-stalk mottled with violet.
 — *Villaneu'vei*. Dark green. Borneo. 1886. Ill. Hort. vol. 34, t. 21.
 — *zebr'i'na*. 3. White. June. Philippine Isles. 1862.

There are besides several garden hybrids, as: *A. Chantr'eri* (Rev. Hort. 1887, t. 92), *Chelso'ni*, *A. gi'gas*, *A. hy'brida*, *A. interme'dia*, *A. Lucia'na*

(Ill. Hort. vol. 34, t. 27), *A. Puccinia'na* (Rev. Hort. 1887, p. 466), *A. Sed'e'ni*.

A'loe. (From *alloch*, its Arabic name. Nat. ord., *Liliacæ*.)

Greenhouse evergreen succulents, chiefly from the Cape of Good Hope: Sandy loam and peat, with a little decomposed manure, and plenty of broken bricks and lime-rubbish, to insure good drainage. Give very little water in winter. Propagated from suckers or leaves, inserted in sandy soil. As purgatives, the juice of the tree-aloes is exclusively used, particularly that of *A. scottrina*, *vulgaris*, *purpurascens*, and *spicata*.

- A. abyss'i'nica*. 3. Yellow. Abyssinia. 1777.
 — *Peaco'ckii*. Yellow. Abyssinia. 1879.
 — *percra'ssa*. Red. Abyssinia. 1873.
 — *acumina'ta*. A variety of *A. humilis*.
 — *africa'na*. 1. Yellow. October. Cape of Good Hope. 1823. B. M. t. 2517.
 — *agavefo'lia*. Red, green. Autumn. 1879.
 — *albisp'i'na*. Scarlet. June. 1796.
 — *albo'necta*. Orange. June. 1812.
 — *arbo're'scens*. Red. June. 1731. B. M. t. 1306..
 — *arista'ta*. Red. 1824. G. C. vol. 19 (1883), p. 284. Syn., *A. longiaristata*.
 — *leio'phy'lla*. 1879.
 — *Athersto'nei*. S. Africa. 1878.
 — *atrovi'rens*. See *Haworthia*.
 — *Ba'rberæ*. 60. Kaffraria. Syns., *A. Bainesii* and *A. Zeyheri*.
 — *Bayfi'e'lii*. See *Gasteria*.
 — *Bow'i'ea*. Pale green, tinged with red. 1822. Syn., *Bowiea africana*.
 — *Bolu'sii*. S. Africa. 1878.
 — *brevisfo'lia*. Orange. June. 1810. B. R. t. 996.
 — *ca'cia*. 2. Orange. July. 1818.
 — *ela'tior*. 9. Red. June. 1821.
 — *chine'nsis*. Yellow. June. 1821. B. M. t. 6301.
 — *chloroleu'ca*. 6 to 10. Pale yellowish. S. Africa. 1877.
 — *Commeli'ni*. See *A. mitra'formis*.
 — *commuta'ta*. 2. Coral-red. May. S. Africa. 1877.
 — *consobri'na*. 2. Reddish-yellow. S. Africa. 1845.
 — *Coop'e'ri*. 1. Orange, greenish. Natal. 1862. Syn., *A. Schmidtiana*. B. M. t. 6377.
 — *depre'ssa*. Orange. August. 1831.
 — *dicho'toma*. Red. July. 1781.
 — *distans*. 6. Red. July. 1732.
 — *depre'ssa*. 6. Red. July. 1820.
 — *refle'xa*. 4. Red. July. 1820.
 — *drepanophy'lla*. 8 to 10. Whitish, green. S. Africa. 1862.
 — *echina'ta*. 6. 1820.
 — *flavispi'na*. Red. August. 1793.
 — *frute'scens*. Red. June. 1818.
 — *gasterio'i'des*. 1. Scarlet. S. Africa. 1875.
 — *glau'ca*. Red. April. 1731. B. M. t. 1278.
 — *rhodaca'ntha*. 4. Red. May. 1731.
 — *gra'cilis*. Orange. June. 1822.
 — *Gree'nii*. 2. Red. S. Africa. 1875. B. M. t. 6520.
 — *Hambury'na*. 2 to 3. Coral-red. Kaffraria. 1875.
 — *heteraca'ntha*. 3. Bright red, whitish. B. M. t. 6363. See *A. inermis*.
 — *Hildbra'dtii*. ¾. Coral red, yellowish, green. E. Trop. Africa. 1888. B. M. t. 6981.
 — *hu'milis*. Orange. April. 1731. Jacq. H. Schœnb. t. 420.
 — *acumina'ta*. Orange. April. 1795. B. M. t. 757.
 — *incu'rva*. Orange. May. 1731. B. M. t. 828.
 — *macile'nta*. Leaves tinged with purple.
 — *subtubercula'ta*. Orange. June. 1620.
 — *in'erms*. Arabia. Probably the same as *A. heteracantha*.
 — *ins'i'gnis*. Coral red to whitish. April. 1885. Garden hybrid.

- A. latifolia*. Scarlet. July. 1795.
lineata. Scarlet. 1789.
 — *glaucescens*. Scarlet. 1789.
longiaristata. See *A. aristata*.
longifolia. 1½. Pale yellow, green. 1888.
Lyneii. 2½. Pale yellow, greenish. 1881.
 Hybrid between *A. striata* and *Gasteria verrucosa*.
macrantha. Yellow, red. March. 1862. B. M. t. 6580.
macrocarpa. 1. Coral-red. April Abyssinia. 1870.
marginata. Ses *Somatophyllum*.
mitraeformis. Red. August. 1781. B. M. t. 1270. Syn., *A. Commelini*.
 — *pachyphylla*. S. Africa. 1862.
Montei var. Dull red. Delagoa Bay. 1889.
myriacantha. 2. Red, green. May. Cape of Good Hope. 1823.
nitens. S. Africa. 1878.
noobilis. Blue. August. 1800.
pallidescens. Red. July. 1820.
paniculata. See *A. striata*.
pendulifolia. Pale yellow. Zanzibar. 1888.
percarpa. Coral-red. May. Mountains of Abyssinia. 1879.
Perryi. 1½. Green. Socotra. 1879. B. M. t. 6596.
platylepis. 10. Coral-red or yellow. S. Africa. 1877.
plicata. 10. Reddish-yellow. 1781. Syn., *A. disticha* var.
pluridens. Red. July. 1823.
pratensis. 1½. Scarlet. S. Africa. 1862. B. M. t. 6705.
prolifera. Orange. April. 1819.
 — *major*. Orange. April. 1819.
purpurascens. Purple. August. 1789.
rhodacantha. See *A. glauca* var.
saponaria. Red. July. 1727.
 — *huteostriata*. Red. July. 1821.
Schimperi. 2. Orange-scarlet. June. Abyssinia. 1876.
serena. Orange. July. 1818.
sigrula var. Red. July. 1789.
sermoidea. 4. Kaffraria. 1862.
socotrina. Red. March. 1781.
spicata. Red. 1795.
spinosa. Red. April. 1820.
striata. Scarlet. July. 1795. Syn., *A. paniculata*.
stridula. Red. June. 1821.
suberecta. Scarlet. April. 1789.
 — *semiguttata*. Orange. May. 1819.
subtuberculata. Orange. June. 1820.
tenuifolia. Orange. June. 1831.
tenuior. Orange. June. 1821.
Thunbergii. 5. S. Africa. 1860.
tricolor. 1½. Coral-red, flesh, yellow. Spring. S. Africa. 1875. B. M. t. 6324.
tuberculata. Orange. April. 1796.
variegata. Pink. June. 1790.
virens. ½. Red. Autumn. B. M. t. 1355.
 — *macilentia*.
xanthoacantha. Orange. June. 1817.
Zeyheri. See *A. Barbara*.

Alomia. (From *α*, not, and *loma*, a fringe. Nat. ord., *Compositae*.)

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

A. ageratoides. 1½. White. July. Mexico. 1824.

Alona. (Letters of the primitive name, *Nolana*, transposed from *Nola*, a little bell; in reference to the form of the flowers. Nat. ord., *Convolvulaceae*; Tribe, *Nolaneae*.)

A small order of pretty Chilean sub-shrubby greenhouse evergreens, with large flowers; cut-

tings root freely in sandy loam, with bottom-heat; peat and loam.

- A. bacca* var. Yellow. Coquimbo.
caelestis. 2. Blue. Chili. 1843. B. R. 30, t. 46.
carnea. Blue. Coquimbo.
gladiolosa. Blue. Valparaiso.
longifolia. See *Nolana*.
obtusata. Blue. July. Coquimbo.
revoluta. See *Dolia*.
rostrata. Blue. July. Coquimbo.
tomentosa. See *Dolia*.

Alonsoa. (In honour of *Z. Alonzo*, a Spaniard. Nat. ord., *Scrophulariaceae*.)

A genus of half-hardy shrubs, herbaceous perennials or annuals. Cuttings, or seeds, the first in sandy loam in August or March; the seeds in March in gentle heat, or in open air in April.

- A. acutifolia*. 3. Scarlet. June. Peru. 1790. Gf. t. 849.
albiflora. 2. White, yellow. Mexico. 1877.
caulialata. 3. Scarlet. June. Chili. 1823.
incisifolia. 2. Scarlet. June. Chili. 1795.
intermedia. 2. Scarlet. June. Hybrid. Lodd. B. C. t. 1456.
linedris. 2. Scarlet. June. Peru. 1790. Swt. Fl. Gard. vol. 6, t. 240.
linifolia. 1½. Scarlet. Australia.
Mattheusii. 1. Scarlet. Peru. Ref. Bot. t. 158.
myrtifolia. Scarlet.
Warscewiczii. 1½. Crimson. July. Central America. 1858. Gf. t. 978.

Aloysia. See *Liippia*.

Alpines, strictly speaking, are plants from alpine, that is, mountainous districts; as a rule perfectly hardy in our gardens, but requiring a specially prepared rock garden, which see.

Alpinia. (In honour of *Alpini*, an Italian botanist. Nat. ord., *Scitamineae*; Tribe, *Zingibereae*.)

Stems herbaceous perennials, except *A. paniculata*, which does well with greenhouse treatment. Rich sandy loam and peat, leaf-soil, or well rotted manure and sand. They like plenty of moisture and pot-room in the growing season; root division after the plants have started into growth in spring.

- A. alata*. 3. Red. May. E. Ind. 1823. Syn., *A. Roscoeana*.
albobineta. 3. Leaves banded with white. New Guinea. 1880.
Allughesi. 2. Red. February. E. Ind. 1796. And. Rep. t. 501.
antillarum. 4. Flesh. May. W. Ind. 1826.
auriculata. 5. Reddish-yellow. E. Ind. 1814.
bracteata. See *A. Roxburghii*.
calcarata. 3. White. September. E. Ind. 1800. B. R. t. 141.
Cardamomum. See *Elettaria*.
cernua. 6. Pink. April. E. Ind. 1804. B. M. t. 1900.
comosa. See *Costus*.
dijffersii. 6. Purple-blue, yellow. April. E. Ind. 1818.
exaltata. See *Renealmia*.
Galantha. 6. White, yellow. October. E. Ind.
lingueformis. See *Elettaria*.
magnifica. See *Amonium*.
malaccensis. 5. White. April. E. Ind. 1799. B. R. t. 328.
medica. See *Elettaria costata*.
mutica. 5. White, red, yellow. August. Borneo. 1811. B. M. t. 6908.

- A. nutans*. 13. Pink. May. E. Ind. 1792. B. M. t. 1903. Syn., *Renealmia nutans*.
 — *occidentalis*. See *Renealmia jamaicensis*.
 — *officinorum*. White, red. S. China. B. M. t. 6995. Chinese Galangal.
 — *penicillata*. 3. Pink. May. China.
 — *pumi* *la*. Pink. April. E. China. 1833. B. M. t. 6832.
 — *pumi* *cea*. See *Elettaria*.
 — *raemo* *sa*. 5. White. August. W. Ind. 1752.
 — *Roscoeana*. See *A. alata*.
 — *Roxburghii*. 3. White. May. E. Ind. 1824. Syn., *A. bracteata*.
 — *spicata*. 2. Sumatra. 1822.
 — *spiralis*. See *Costus Pisonis*.
 — *strid* *ta*. 4. E. Ind. 1813.
 — *tubulata*. 2. Red. July. Demerara. 1820.
 — *vittata* *la*. Leaves green, striped with white. Polynesia.
 — *zingiberina*. 5. Greenish-yellow, white, crimson. Siam. 1886. B. M. t. 6944.

Alsoe'smia. (From *alsos*, a grove, and *eu-osme*, a perfume. Nat. ord., *Caprifoliaceae*.)

- A. macrophylla*. 10. Creamy white, red. New Zealand. 1884. B. M. t. 6951.

Alsine. See *Arenaria*.

Alsodeia. (From *alsodes*, leafy. Nat. ord., *Violariæ*.)

Ornamental stove evergreen shrubs. Rich loam and sand; cuttings in sand, under a bell-glass.

- A. latifolia*. White. Madagascar. 1824.
 — *pauciflora*. White. Madagascar. 1824.

Alsomitra. (From *alsos*, a grove, and *mitra*, a mitre; here probably meaning covering, or the cap of the wood. Nat. ord., *Cucurbitaceae*.)

Stove evergreen climber. Seeds, cuttings in bottom-heat. Rich loam. Give more water during the growing and flowering season than at other times.

- A. sarcophylla*. White. Winter. Burmah, Siam. 1870. Syn., *Zanonias sarcophylla*.

Alsophila. (From *alsos*, a grove, and *phileo*, to love; in reference to the situation best suited for the plants. Nat. ord., *Filices—Polypodiaceae*.)

Greenhouse tree ferns. Peat and loam; division.

- A. aculeata*. S. America.
 — *aspera*. W. Indies.
 — *atrovirens* *Keria* *na*. 2. S. Brazil. 1837.
 — *australis*. Australia. 1833.
 — — *Willia* *msii*. 1874.
 — *contaminans*. S. E. Asia. III. Hort. t. 458.
 — *glauca*. Manilla. 1862.
 — *hispida*. New Grenada. 1831.
 — *Hostmanni*. Guiana.
 — *latevirens*. New Grenada. 1881.
 — *Leichardti* *na*. Australia. 1867. Syn., *A. Macarthuri*.
 — *lunulata*. 25. Fiji. 1880.
 — *Mique* *lii*. Java.
 — *Moorea* *na*. N. S. Wales. 1847.
 — *podophylla*. New Grenada. 1831.
 — *radens*. Brazil.
 — *Rebecce*. 8. Queensland. 1882.
 — *scgittifolia*. Trinidad. 1872.
 — *Scotti* *na*. Sikkim. 1872.
 — *Ternstis denticulata*. Brazil.

Alstonia. (In honour of *Dr. Alston*. Nat. ord., *Apocynaceae*.)

Stove evergreen shrubs or trees, allied to the Oleander. Loam, peat, and sand; cuttings root readily in moist bottom-heat.

- A. scholaris*. 8. White. May. E. Ind. 1825. Wight Icon. t. 422.
 — *venenata*. 6. White. June. E. Ind. 1825. B. C. t. 1180.

Alströméria. (In honour of *Baron Alström*, a Swedish botanist. Nat. ord., *Amaryllidaceae*.)

All the species of this beautiful genus live out of doors with us, with a slight protection from frost, except *A. caryophyllæ*, erroneously called *ligtu*, in B. M. t. 125; 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 *Bomarea*s, the species of which are all twiners. The golden *Alström*er from Chiloe (*A. aurantiaca*), 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 sunshine and lighter soil—their long fasciated (or tufted) roots are not well adapted for pot cultivation. They succeed in deep, rich, light loam, or loam, peat, and sand; and should be planted eight or ten inches deep, and receive abundance of water while they are growing. *Alström*erias have a strong natural tendency to variation, but will not cross with *Bomarea*s, 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. hæmannia* 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. aurantiaca*. 2. June. Orange. Chili. 1831. Swt. Fl. Gard. ser. 2, t. 205. Syn., *A. aurea*.
 — *caryophyllæ*. 1. Scarlet. February. Brazil. 1776. Jacq. Hort. Schoenb. t. 465. Syn., *A. ligtu* of B. M. t. 125.
 — *chilensis*. 2. Yellow, red. July. Chili. 1849.
 — *Cunninghamia* *na*. Chili. A variety of *A. revoluta*.
 — *densiflora*. Scarlet. Peru. 1865.
 — *hæmannia*. Swt. Fl. Gard. ser. 2, t. 158. Syn., *A. pulchella* (B. M. t. 2354) and *A. Simsii*.
 — — *Barclayana*. 2½. Crimson. July. Chili. 1830.
 — *ligtu*. 2. Whitish or pale red. Chili. B. R. 1839, t. 3.
 — — *pulchra*. B. M. t. 2421. Syn., *A. bicolor* (B. C. t. 1147 and 1497) and *A. Flos-Martini* (B. R. t. 731).

Many forms of this species are in cultivation, and have been described as distinct species. Amongst these are: *A. angustifolia*, *A. Hookeri* (B. C. t. 1272), *A. Hookeriana*, *A. pallida* (B. M. t. 3040), *A. pulchra*, *A. rosea*, and *A. tricolor*.

- A. ovata*. See *Bomarea edulis*, var. *ovata*.
 — *peregrina*. 1. Striped. July. Chili. 1754. B. M. t. 139.
 — — *alba*. White, yellow. 1877.
 — *peruviana*. Crimson, white, green, black. Peru. 1875.
 — — *neve-marginata*. Leaves white margined. 1875.
 — *psittacina*. Crimson. September. Brazil. 1827.
 — — *Eremboulatii*.
 — *spathulata*. ¼ to 1. Reddish. Chili.
 — — *Neillii*. B. M. t. 3105.

Alteranthera. (Alluding to the alternate stamens being barren. Nat. ord., *Amarantaceae*.)

Well-known stove and greenhouse perennial, biennial, and annual ornamental foliaged plants, largely used at the present time in carpet bedding, etc. Light rich loam. Cuttings root readily, end of March and April, in hot bed, with a steady bottom-heat of 75° to 80°.

- A. achyrantha*. 1. White. July. Buenos Ayres. 1732.
 — *ambilis*. Leaves rose coloured, shading off to green at the margin. Brazil. III. Hort. 1868, t. 568.
 — *cane-scens* and *caracasa'na*. See *Telanthera*.
 — *denticulata*. White. July. 1822.
 — *ficoides*. Leaves green and red. India. 1865.
 — *versicolor*. White. Leaves claret-coloured, when young pink with darker veins. III. Hort. 12, t. 440.
 — *filifoliosa*. White. July. E. Ind.
 — *frutescens*. White. July. Peru. 1820. This will do in a greenhouse.
 — *nodiflora*. White. May. Australia. 1826.
 — *paronychioides*. †.
 — *au'rea*.
 — *procumbens*. 4. White. July. Brazil. 1818.
 — *sericea*. See *Gomphrena*.
 — *sessilis*. †. July. Brown. E. Ind. 1778. A biennial.
 — *amoena*. Lower leaves dark green, upper reddish. III. Hort. 1865, t. 447.
 — *spathulata*. Leaves reddish-brown. III. Hort. 1865, t. 445.
 — *spinosa*. Yellow. June. 1823. Stove annual.

Althæa. Marsh-mallow. (From *althæo*, to cure; in reference to the medicinal qualities. Nat. ord., *Malvaceæ*.)

Hardy ornamental annual, biennial, and perennial herbaceous plants. Increased by division or seeds. Those of the annual and biennial in spring where intended to bloom. Seed of the perennials sown as soon as ripe often produce flowering plants the following year. Ordinary garden soil. *A. rosea* is the Hollyhock, which see.

HARDY ANNUALS.

- A. acutilis*. 2. Purple. July. Aleppo. 1680.
 — *hirsuta*. 2. White. July. Britain. Rchb. Ic. t. 172.
 — *Ludwigii*. 2. Pink. July. Sicily. 1791.
 — *chinensis*. 1. Red. July. China. 1818.

HARDY BIENNIALS.

- A. caribæa*. 3. Pink. Stove. April. W. Ind. 1816.
 — *ficifolia*. 6. Orange. July. Levant. 1597.
 — *Froloviana*. 3. July. Siberia. 1827.
 — *pa'lidæa*. 6. Pale purple. July. Hungary. 1805. Rchb. Ic. t. 175.
 — *rosea*. Red. August. China. 1573. Rchb. Ic. t. 175. The Hollyhock.
 — *biloba*. 8. Red. July. Syn., *A. grandiflora*.
 — *Siebertii*. 4. Purple. July. Sicily. 1829.
 — *striata*. 5. White. July.

HARDY HERBACEOUS.

- A. cannabina*. 6. Purple. July. South of Europe. 1597. Rchb. Ic. t. 173.
 — *flexuosa*. 3. Pink. July. E. Ind. 1803.
 — *frutescens*. See *Hibiscus syriacus*.
 — *roborensis*. 6. Pink. August. South of Europe. 1780.
 — *nudiflora*. 6. White. July. Siberia. 1827. Syn., *A. leucantha*.
 — *officinælis*. 4. Flesh. July. Britain. Rchb. Ic. t. 173. Marsh-mallow.
 — *tauricensis*. 4. Red. August. Turin. 1817. Rchb. Ic. t. 174.

Alti'ngia. See *Araucaria*.

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 a height of 15,000 feet, whereas in the 35th degree of N. 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 8,400 feet, being an average of 146 feet for every degree; in the 50th degree 6,000 feet, or 180 feet for each degree; in the 60th, 3,000 feet, or 200 feet for a degree; and in the 70th, from 1,200 to 2,000 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 7,000 feet under the equator ought to grow in the open air in London.

Alu'minous, applied to land, means heavy, owing to the presence of clay.

Aly'ssum. Madwort. (From *aly*, not, and *lyssa*, rage; in reference to a fable that the plant allayed anger. Nat. ord., *Crucifera*.)

Annual or dwarf shrubby perennial plants. The flowers are usually produced in spring, and add much interest to the Rockery or mixed border.

- A. alpe'stre*. 1. June. S. Europe. 1825.
 — *argenteum*. 1. April. Switzerland.
 — *atlanticum*. 1. Yellow. April. Crete. 1817.
 — *Bertoloni*. 1. July. Switzerland. 1823.
 — *cuneifolium*. 1. July. Italy. 1820.
 — *dasyca'rpum*. †. Yellow. July. Siberia. 1819. Syn., *Anodonteæ dasycarpa*.
 — *diffutium*. 1. July. Italy. 1820.
 — *edentulum*. 1. Yellow. July. Hungary. 1820. Syn., *Anodonteæ edentulum*.
 — *gemone'nsis*. 1. Rich yellow. April. Europe. Jacq. Ic. t. 503.
 — *hirsutum*. 1. June. Tauria. 1817.
 — *macroca'rpum*. †. White. June. France. 1823. Syn., *Anodonteæ macrocarpa*.
 — *maritimum*. White. S. Europe. 1722. Syn., *A. halimifolium*, B. M. t. 101, and *Anodonteæ halimifolia*.
 — *marshallianum*. 1. April. Caucasus. 1820. Syn., *A. alpe'stre* Bieb. not Linn.
 — *micranthum*. 1. August. Russia. 1836.
 — *microper'talum procumbens*. Iberia.
 — *montanum*. 1. Yellow. June. Germany. 1713. B. M. t. 419.
 — *muralis*. 1. July. Hungary. 1820.
 — *obovatum*. †. Yellow. June. France. 1830. Syn., *Anodonteæ obovata*.
 — *obtusifolium*. 1. April. Tauria. 1828.
 — *olympicum*. 1. Deep yellow. June. 1700.
 — *orientale*. 1. Yellow. April. Crete.
 — *variegatum*. Garden variety.

- A. rupe'stre*. 4. White. June. Naples. 1825. Syn., *Anodonte'a rupe'stre*.
- *saxat'ile*. 1. May. Crete. 1710. B. M. t. 159.
- *variegat'um*.
- *serpyllifol'ium*. 1. Pale yellow. August. S. Europe. 1822.
- *spathulat'um*. 1. April. Siberia. 1818.
- *spinosum*. 4. White. June. South of Europe. 1688. Syn., *Anodonte'a spinosa*.
- *tortuosum*. 1. Yellow. April. Hungary. 1804.
- *umbellat'um*. 1. July. Tauria. 1821.
- *utriculat'um*. Yellow. April to June. Levant. 1739. B. M. t. 130.
- *vernale*. 1. June. 1819.
- *Warsch'dli*. June. Yellow. S. Europe. 1847.
- *Wiersch'dkii*. 14. Deep yellow. Summer. Asia Minor.
- *Wulfenianum*. 4. Golden-yellow. April. Carinthia. 1819.
- A. Podolicum, see *Schivereckia*. A. cheiranthifolium, *Fare'stia*. A. limfolius, *Meniocus*. A. vesicaria, *Vesicaria reticulata*.
- Aly'xia.** (From *aluxis*, grief; in allusion to the deep, sombre green of several species. Nat. ord., *Apocynæ*.)
- Stove shrubs, cuttings of ripened shoots in sand under a bell-glass. Soil, sandy loam and peat.
- A. bracteolos'a*. Climber. Pale yellow. Fiji. 1887.
- *daphnoid'es*. A low shrub. White, tube yellowish. Norfolk Island. 1830. B. M. t. 3313.
- *ruscifolia*. A low shrub. Flesh-colour. Scent like Jasmine. New South Wales. 1820. Syn., *A. Richardsoni*, B. M. t. 3312.
- Alza'tea.** (In honour of a Spanish naturalist, named *Alzaty*. Nat. ord., *Celastrinæ*.)
- Greenhouse evergreen tree. Cuttings in hotbed; sandy peat.
- A. verticillat'a*. 20. Peru. 1824.
- Amarabo'ya.** (Nat. ord., *Melastomacæ*.)
- Stove, or warm greenhouse evergreen shrubs; cuttings of young shoots in brisk bottom-heat under a bell-glass. Soil, turfy loam, and a little peat.
- A. amarabilis*. Pinkish-white, edged with carmine. New Grenada. 1871. III. Hort. 5. 34, t. 9.
- *princeps*. Bright carmine; stamens white. New Grenada. 1871. III. Hort. 5. 34, t. 4.
- *splendida*. Carmine shading into white. New Grenada. 1871. III. Hort. 5. 34, t. 34.
- Amaran'thus.** Amaranth. (From *a*, not, and *maraino*, to waste away; in reference to the durability or "everlasting" quality of the flowers of some species. Nat. ord., *Amaranthacæ*.)
- Hardy annuals. Rich loam; seeds sown in hotbed in March, or in open ground in April.
- A. atropurpureus*. 3. Purple. September. E. Ind. 1820. Fl. Ser. t. 2850.
- *tricolor*. 2. Red, green. August. E. Ind. 1802.
- *caudatus*. 4. Red. August. E. Ind. 1596.
- *maximus*. 6. Red. August. 1820.
- *fasciatus*. 2. July. E. Ind. 1816. Wight Icon. t. 717.
- *flavus*. 4. Light yellow. August. India. 1759.
- A. Hende'ri*. 3. Orange, carmine, golden yellow, green golden hybrid, pyramidal.
- *hypochondriacus*. 2. Purple or green. Brazil.
- *lancaefol'ius*. 3. Red. July. E. Ind. 1816. Wight Icon. t. 715. Syn., *Euzolus lineatus*.
- *Margari'tæ*. Garden variety. 1887.
- *melanchol'icus ruber*. Leaves crimson purple. Japan. Half-hardy.
- *tricolor*. 2. Reddish-violet, green. August. E. Ind. 1548.
- *oleraceus*. 6. Pale red. July. E. Ind. 1764. Syn., *Euzolus oleraceus*.
- *paniculatus*. 5. Red, green, or yellow. July. India. Syn., *A. speciosus*, B. M. t. 2227.
- *cruentus*. 3. Dark red. July. China. 1728.
- *sativifol'ius*. 24. Leaves green, bronzy, or orange-red. Philippine Isles. 1871. Fl. Ser. t. 1929.
- *sanguineus*. 3. Red. August. Bahama. 1775.
- *speciosus*. See *A. paniculatus*.
- Amar'yllis.** (A classical name, after Virgil's *Amaryllis*. Nat. ord., *Amaryllidacæ*.) A large number of species, formerly placed in this genus, are now referred to *Hippeastrum*, which see.
- Half-hardy or hardy, deciduous bulb. Equal parts of fibrous loam, leaf mould, and sand; well-drained.
- A. advena* and *au'tica*. See *Hippeastrum*.
- *Atamasco*. B. M. t. 239. See *Zephyranthes Atamasco*.
- *australisica*. B. R. t. 426. See *Crinum flaccidum*.
- *Banksiana*. B. R. 1842, t. 11. See *Brunsvigia Slateriana*.
- *Belladonna*. 14. March. Rose-red. Cape Colony. 1712. B. M. t. 733. Syns., *A. pudica*, *A. rosea*, *Coburgia Belladonna*, and *Belladonna purpurascens*.
- *blanda*. 3. Pale rose. March. 1754. B. M. t. 1450. Syn., *Coburgia blanda*.
- *pa'lida*. 2. Flesh. August. 1712. Red. Lil. t. 479.
- *Broussonetii*. B. M. t. 2121. See *Crinum yuccifolium*.
- *canadica*. B. R. 724. See *Zephyranthes candida*.
- *colchiciflora*. See *Sternbergia colchiciflora*.
- *Colensoi*. See *Crinum Moorei*.
- *coraci'na*. B. R. t. 189, and var. *pallida*, B. R. t. 1219. See *Ammocharis falcata*.
- *corusca*. See *Nerine sarniensis*, var. *corusca*.
- *crispa*. Jacq. Hort. Schænb. t. 72. See *Hessea crispa*.
- *curvifolia*. B. M. t. 725. See *Nerine curvifolia*.
- *disticha*. See *Buphane disticha*.
- *du'bia*. See *Nerine sarniensis*.
- *falcata*. See *Ammocharis falcata*.
- *formosissima*. See *Syrskelia formosissima*.
- *Fothergilli*. Andr. Rep. t. 163. See *Nerine curvifolia*, var. *Fothergilli*.
- *gigantea*. See *Crinum giganteum*.
- *humilis*. B. M. t. 726. See *Nerine humilis*; B. M. t. 1089, *N. sarniensis*, var. *corusca*.
- *hyacinthina*. B. R. t. 163. See *Griffinia hyacinthina*.
- *insigne*. B. R. t. 579. See *Crinum latifolium*.
- *Josephine* and *Josephiniana*. See *Brunsvigia Josephine*.
- *laticoma*. B. M. t. 497. See *Nerine lucida*.
- *Leena*. Garden variety. 1888.
- *longifolia*. B. M. t. 661. See *Crinum longifolium*.
- *longiflora*. B. R. t. 303. See *Crinum longiflorum*.
- *Mackenziei*. See *Crinum Moorei*.

- A. marginata*. See *Nerine marginata*.
 — *natale'nsis*. See *Crinum Moorei*.
 — *orientalis*. Jacq. Hort. Schœnb. t. 74. See *B. unsvigia gigantea*.
 — *ornata*. B. M. t. 1171. See *Crinum zeylanicum*; B. M. t. 1253, *C. distichum*; B. M. t. 923, *C. giganteum*.
 — *palmda*. A variety of *A. Belladonna*.
 — *pu'dica*. See *A. Belladonna*.
 — *purpurascens*. Fl. Ser. t. 911. is probably a variety of *A. Belladonna*.
 — *purpurea*. See *Vallota purpurea*.
 — *Ra'dula*. Jacq. Hort. Schœnb. t. 68. See *Brunsvigia Radula*.
 — *reticulata*. See *Hippeastrum*.
 — *revoluta*. B. M. 915, and var. *gracilior*, B. M. t. 623. See *Crinum lineare*.
 — *robustior*. B. M. t. 615. See *Crinum variabile*.
 — *rosea* of Lamarck is *A. Belladonna*; of Sprengel is *Zephyranthes rosea*.
 — *Rougieri*. See *Hippeastrum aulicum*.
 — *rubra*. Fl. Ser. t. 1415 is probably a form of *A. Belladonna*.
 — *sarni'nsis*. B. M. t. 294. See *Nerine sarni'nsis*.
 — *spectabilis*. Andr. Rep. t. 390. See *Crinum yucciflorum*; B. C. t. 159, is a hybrid *Hippeastrum*.
 — *stellaris*. Jacq. Hort. Schœnb. t. 71. See *Hessea stellaris*.
 — *striata*. Jacq. Hort. Schœnb. t. 70. See *Brunsvigia striata*.
 — *Tetta'ni*. Garden variety. 1888.
 — *Treatii*. See *Zephyranthes Treatii*.
 — *tubispatha*. B. M. t. 1586. See *Zephyranthes tubispatha*.
 — *undulata*. B. M. t. 369. See *Nerine undulata*.
 — *variabilis*. Jacq. Hort. Schœnb. t. 429. See *Crinum variabile*.
 — *versicolor*. See *Zephyranthes versicolor*.
 — *vivi'para*. See *Crinum defizum*.
 — *zeylanica*. See *Crinum zeylanicum*.
 For *A. Alberti*, *A. pardi'na*, *A. pro'cera*, *A. Ray'neri*, and *A. Solandri'fo'ra*, see *Hippeastrum*.

Amasonia. (In honour of an American traveller, named *Amason*. Nat. ord., *Verbenaceæ*.)

Stove sub-shrubs. Sandy loam and leaf-soil. Offsets.

- A. calyc'na*. 2. Bracts large, red; calyx red; corolla sulphur yellow. September. British Guiana. 1885. B. M. t. 6915. Syn., *A. punicea*.
 — *ere'cta*. 2. Yellow. September. Maranhao. Brazil. 1823.

Amateur. 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.

Amatungula. *Carissa grandiflora*.

Amber, Sweet. *Hypericum Androsæmum*.

Amber Tree. *Anthospermum æthiopicum*.

Amblostoma. (From *amblos*, blunt, and *stoma*, a mouth. Nat. ord.,

Orchideæ; Tribe, *Epidendrea*; Sub-tribe, *Stenoglosseæ*.)

A. ce'rnum. 1. Yellowish-green. Brazil. Ref. Bot. t. 101. Syn., *A. tridactylum*.

Amblyolepis. (From *ambly*, blunt, and *lepis*, a scale; involucre scales being blunt. Nat. ord., *Compositæ*.)

Hardy annual, flowering all through the summer. Seeds sown in spring in ordinary garden-soil; sunny position.

A. seti'gera. 1-2. Golden-yellow. July. Prairies of Texas. Syn., *Helentium setigerum*.

Ambrosinia. (Commemorative of Professor Giacinti Ambrosini, of Bologna. Nat. ord., *Araceæ*.)

Half-hardy tuberous perennials, remarkable for the curious structure of their inflorescence. In *A. Bassii* the spathe is divided lengthwise into two compartments, the solitary ovary being in the front compartment, and the anthers in the hinder one, attached in two rows to the back of the partition, which has a small hole at the top through which insects can crawl, by whose means only the pollen can be transmitted to the stigma, and fertilization effected. Seeds sown as soon as ripe in warm greenhouse division, as growth commences in spring. Any light soil; must be protected in winter.

A. Bassii. ½. Green. Spring. Corsica, Sardinia. 1879.

There are three varieties of this plant, viz., *angustifolia*, leaves narrow; *maculata*, leaves spotted, veins red; and *reticulata*, pale leaves, with dark-green venation.

— *ciliata*. See *Cryptocoryne*.

Ambury, also known as *Anbury*, *Club*, and *Finger and Toe*, is a disease in the cabbage and turnip caused by a fungus, *Plasmiodiophora brassicæ*, and not by a weevil as was previously thought. See **Cabbage**.

Amela'nchier. (This is the Savoy name for the Medlar, to which this genus is closely allied. Nat. ord., *Rosaceæ*.)

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

A. alnifolia. 6. Dark purple. N. W. America. 1888.

— *asia'tica*. White. 1879.

— *botry'opium*. 12. N. Amer. 1746.

— *canad'nsis*. White. April. Canada. 1746.

Syn., *Pyrus botry'opium*.

— *fl'o'rida*. 12. N. Amer. 1826. B. R. t. 1589.

— *parvifolia*. 3.

— *otigoca'rpa*. 2 to 4. Blue-purple. E. United States. 1888.

— *ova'lis*. 8. N. Amer. 1800.

— *semi-integrifolia*. N. Amer.

— *subcordata*. N. Amer.

— *sangui'nea*. 4. White. Fruit deep purple.

N. Amer. 1800. B. R. t. 1171.

— *vulgaris*. 6. South of Europe. 1596. G. C.

1878, p. 793.

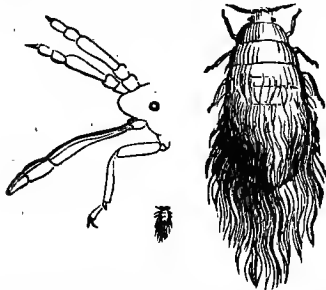
Amellus. (A name employed by Virgil for a blue aster-looking plant growing on the banks of the river *Mella*. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*.)

Allied to Aster. A greenhouse evergreen trailer. Loamy soil; cuttings in a bell-glass in spring.

A. lychnitis. 1. Violet. July. Cape of Good Hope. 1768. B. R. t. 586.
— *spinulosus*. See *Haplopappus spinulosus*.
— *villosus*. See *Chrysopsis villosus*.

American Aloe. *A'gave americana*.

American Blight. The insect attacking our apple-trees, and known by this name, is the *Schizoneura lanigera*, belonging to that group of Aphides, which is not provided with honey tubes, has the third vein of the front wing with a single fork, the 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 being wafted to other trees, conveys to them infection by bearing with it the eggs or embryo insects. The females are wingless; the males are winged, and appear in July and August. These insects sometimes 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 brush, the most effective destroyer of these insects. The spirit must be applied carefully, because it kills every leaf on which it falls. 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. *Vaccinium macrocarpon*. Soil light, and occasionally manured with rotten leaves. Peat has been considered indispensable by some cultivators; but we much question whether this be not a mistaken impression, and should not be allowed to deter persons from planting in any ordinary dark vegetable matters, soft alluvium, or humus which may happen to be within reach. On making an artificial compost, we would advise one-third peaty or other dark and unctuous material, one-third leaf-soil, or old decayed weeds, and one-third light and sandy loam or ordinary soil. *Situation*: They require a constant supply of water; and, on a south bank, where this supply can be obtained, they may be planted in rows four feet apart each way, and the water made to circulate in a small ditch between the rows. But the edge of a pond will suit them almost as well, provided that a little soil of a proper character is introduced round the margin. It is well to state, however, that a very considerable amount of success has been attained in beds of a peaty soil, without any system of irrigation. *After-culture*: The shrubs require no other attention than to be kept free from weeds. A top-dressing annually, in November, of heath-soil or rotten leaves has been stated to prove of much service. The American cranberry is considered of easier culture than the English, or *Oxyecoccus palustris*, the latter requiring more moisture than its American ally. *Produce*: The fruit, used for tarts and preserving, is so abundant, that a bed six yards long is sufficient for the largest family. *Propagation*: Suckers, cuttings, or seeds; the two former planted early in the autumn.

American Cress. *Barbarea pre-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.

Amerinum *Broomei* and *strigulosum*. See **Dalbergia Amerinum**.

Amethystea. (From *amethystos*, the amethyst; in reference to the blue colour of the flower. Nat. ord., *Labiatae*.)

Hardy annual. Seed; ordinary garden-soil. *A. cærulea*. 2. Blue. July. Siberia. 1759.

Amherstia. (In honour of the Countess Amherst. Nat. ord., *Leguminosæ*; Tribe, *Amherstieae*.)

This splendid flowering tree was first flowered in England, by Mrs. Lawrence, in 1849. The individual flowers sustain the praise lavished on them; 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, under a bell-glass, in a strong bottom-heat.

A. nobilis. 40. Rich vermilion. Burmah. 1837. B. M. t. 4453.

Amicia. (In honour of *John Baptist Amici*, of Modena. Nat. ord., *Leguminosæ*; Tribe, *Hedysareae*.)

A greenhouse or half-hardy perennial, may be planted in sheltered spots in the open. Rough sandy loam; cuttings in sand, under a bell-glass in heat.

A. zygoëmeris. 8. Yellow. June. Mexico. 1826. B. M. t. 4008.

Amianthium. See **Helónias**.

Ammobium. (From *ammos*, sand, and *bio*, to live; in reference to the sandy soil in which it thrives. Nat. ord., *Compositæ*.)

Half-hardy annual or biennial everlasting. Seed; common garden-soil.

A. alatum. 2. White. June. Australia. 1822. B. M. t. 2459.

— *grandiflorum*. The heads nearly twice larger than the type. It comes true from seed.

— *plantaginæum*. 1. White. August. Australia. 1827.

Ammocharis. (Derivation uncertain. Nat. ord., *Amaryllidæ*.)

Showy greenhouse bulbous plants. For culture, see BRUNSVIGIA.

A. falcata. 4. Bright red. Winter. Cape Colony. Syns., *A. coranica*, *Amaryllis coranica*, B. R. t. 139, and *falcata*, *Crinum falcatum*, Jacq. Hort. Vind. t. 60. There is also a variety *pallida* figured in B. R. t. 1219.

— *Slateriana*. See *Brunsvigia Slateriana*.

Ammodendron. (From *ammos*, sand, and *dendron*, a tree; in reference to the situation it grows in. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ*.)

A hardy evergreen silky leaved shrub. Layers and seed. Allied to *Sophora*.

A. Sieversii. 4. Purple. June. Siberia. 1837. Syn., *Sophora bifolia*.

Ammogeton scorzonerifolium. See **Troximon glaucum**. B. M. t. 3462; also a variety, B. M. t. 1667.

Ammyrsine. See **Leiophyllum**.

Amomophyllum. See **Spathiphyllum**.

Amomum. (From *a*, not, and *mos*, impurity; in reference to the quality of counteracting poison. Nat. ord., *Scitamineæ*; Tribe, *Zingiberaceæ*.)

Stove deciduous herbaceous perennials. Formerly used in embalming; whence the word *mummy* on account of their aroma. Root division; rich, light loam; require, when growing, a high, moist heat.

A. aculeatum. 10. Orange. May. E. Ind. 1819.

— *Azælii*. 3. Pink. May. Sierra Leone. 1795. This is regarded by some to be the same as *A. Clusii*.

— *angustiflorum*. 8. Red. June. Madagascar.

— *aromaticum*. 3. Purplish-yellow. June. E. Ind. 1823.

— *cardamomum*. 4. Pale brown. June. E. Ind. 1823.

— *Clusii*. Yellow. Fernando Po. B. M. t. 5250.

— *purpureum*. 2½. Red. W. Africa. Syn., *A. Daniellii*.

— *dealbatum*. 3. White. April. Bengal. 1819.

— *grana paradisi*. 3. Red. March. Madagascar. B. M. t. 4603.

— *grandiflorum*. 3. White. July. Sierra Leone. 1795.

— *latifolium*. 4. Purplish-yellow. June. Sierra Leone. 1824.

— *magnificum*. 10. Red. July. Mauritius. 1830. Syns., *Alpinia magnifica*, B. M. t. 3192; *Nicolaia imperialis*.

— *mazimum*. 5. White. June. E. Ind. B. R. t. 929.

— *Melegueta minor*. Pale pink. May. Sierra Leone. 1869. B. M. t. 5987.

— *septrum*. 5. Rose purple. January. Old Calabar. 1863. B. M. t. 5761.

- A. sericeum*. 6. White. July. E. Ind. 1819.
 — *subulatum*. 3. Yellow. April. Bengal. 1822.
 — *stylis*. 1. White. April. W. Ind. 1819.
 — *vittellinum*. 2. Yellow. May. E. Indies.
 — *Zingiber*. See *Zingiber officinale*.

Amo'ra. (Amoor of the Bengalese. Nat. ord., *Meliaceae*.)

Stove evergreen shrub. Cuttings in sand, under a bell-glass, in a hotbed; soil, light, rich loam.

- A. cucullata*. Yellow. May. Delta of the Ganges. 1834. Roxb. Pl. Corom. vol. 3, t. 258.
 — *Rohituka*. Yellow. E. Indies. Bedd. Fl. Syl. t. 132.

Amorpha. Bastard Indigo. (From *a*, not, and *morpha*, form; in reference to the irregularity of the flowers. Nat. ord., *Leguminosae*; Tribe, *Galegae*.)

Hardy deciduous shrubs. Common soil; layers or cuttings of the ripe wood in autumn, and suckers.

- A. canescens*. 3. Blue. July. Missouri. 1812. B. M. t. 6618.
 — *croceolana*. 5. Purple. July. N. Amer. 1820.
 — *fragrans* is *A. nana* of B. M. t. 2112, but not of others.
 — *fruticosa*. 6. Purple. July. Carolina. 1724. B. R. t. 427.
 — — *angustifolia*. 9. Purple. June. South Carolina. 1812.
 — — *caerulea*. 9. Blue. June. South Carolina.
 — — *emarginata*. 6. Purple. July. Carolina. 1724.
 — — *microphylla*. 2. Purple. June. Carolina.
 — *glabra*. 3. Purple. July. N. Amer. 1813.
 — *herbacea*. 3. Blue. July. Carolina. 1803. Syn., *A. pubescens*. B. C. t. 689.
 — *Levissii*. 3. Purple. July. N. Amer. 1813.
 — *microphylla*. A synonym of *A. nana*.
 — *nana*. 2. Blue. August. Missouri. 1811. B. M. t. 2112. These last three require a little protection in winter.

Amorphophallus. (From *amorphos*, deformed, and *phallos*, a mace; referring to the misshapen, barren appendix of the spadix. Nat. ord. *Araceae*.)

Stove or greenhouse tuberous-rooted plants, natives of Southern Asia and the Indian Archipelago. The solitary branched leaf usually appearing after the flowers, which are generally extremely fetid. Rich loam and leaf-mould, with a dash of sand. They require shade, and to go to rest during part of the year, during which time they require to be kept dry, and warm. When growing give abundance of water; *A. campanulatus* thrives best if its roots are allowed to descend into a tank of water. Imported seeds or tubers. They rarely make tubers, or produce seeds under cultivation.

- A. campanulatus*. 2. Lurid purple. India. 1817. Syn., *Arum campanulatum*. III. Hort. 1865, t. 424.
 — *Chaityi*. 3. India. 1872.
 — *du'bius*. 2. Purple. June. Ceylon. 1857. B. M. t. 5187.
 — *Eichleri*. 1½. Purple, white; spadix brown. W. Trop. Africa. B. M. t. 7091.
 — *grana'is*. 3. Spathe green, white inside; spadix purplish. Java. 1865.
 — *Lacou'rii*. Leaves marked with round white spots. Cochinchina. 1879. III. Hort. n. s. t. 316.
 — *leone'nsis*. Spathe and spadix purplish brown. Sierra Leone. 1845. *Corynophallus*?
 — *niv'osus*. See *Dracontium asperum*.

- A. nobilis*. Spathe livid purple, spotted with white. Java. 1867.
 — *papillo'sus*. Greenish and dark brown.
 — *pi'ctus*. Java. 1865.
 — *Rivie'ri*. Spathe and spadix lurid purple. Cochinchina. Syn., *Proteinophallus Rivieri* and *A. Kongac*. Rev. Hort. 1871, t. 573.
 — *specio'sus*. Java. 1865.
 — *Tita'nus*. 10. Spathe and spadix black purple. W. Sumatra. 1879. An extraordinary plant, of gigantic dimensions, the leaf-stalk being 10 ft. high, and the divided blade covering an area of 45 ft.; the spathe is about 3 ft. across, and the spadix 5 ft. high. This species flowered for the first time at Kew in 1890. B. M. t. 7153-7155.
 — *viro'sus*. Spathe pale green outside with a broad purple margin; inside, purple in lower and upper part, cream-coloured in the middle. Siam. B. M. t. 6978.
 — *Walli'sii*. Brazil. 1862. Gf. 1862, t. 350.
 — *zebrin'us*. Java. 1865.

Ampelo'psis. (From *ampelos*, a vine, and *opsis*, resemblance, in reference to its resemblance to the grape-vine. Nat. ord., *Ampelideae*.)

Nearly allied to *Vitis*. Quick growing, ornamental, hardy deciduous climbers. Flowers inconspicuous, but on account of their handsome leaves some of the species are very popular for walls and buildings. Cuttings in sand under a handlight in September in the open border, will be fit to plant out in spring. They may also be increased by layers. Ordinary garden-soil.

- A. aconitifolia*. Leaves much divided. China. 1868. Syn., *A. hincida*, *A. triloba*, *A. tripartita*, and *Vitis dissecta*.
 — *bipinnata*. Green. June. N. America. 1700.
 — *citruiloides*. 16. Greenish. Rev. Hort. 1868, p. 10.
 — *napiformis*. Greenish. China. 1870.
 — *quinquefolia*. Greenish-purple. N. America. 1629. The Virginian Creeper. Syn., *A. hederacea*.
 — — *hirsuta*. May. N. America. 1806.
 — *sempervirens*. An evergreen species. 1881.
 — *serjanifolia*. Green. Japan. 1867. Gf. 1867, p. 451. Syn., *A. tuberosa*, *Wissus*, and *vittifolia*.
 — *tricuspidata*. Japan. 1868. Syn., *A. Veltchii*, and *Vitis japonica*.

Ampelovi'tis. (Nat. ord., *Ampelideae*.)

A deciduous climber, probably hardy in the Southern Counties.

- A. Davidi*. Leaves shining green above, glaucous below. N. China. Rev. Hort. 1889, p. 204.

Ampely'gonum chine'nse. See *Polygonum chinense*.

Amphere'phis. See *Centrantherum*.

- A. aristata*. See *Centrantherum punctatum*.

Amphible'mma cymo'sum. See *Melastoma corymbosum*.

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., *Leguminosæ*; Tribe, *Phaseoleæ*.)

Curious twining, hardy perennial plants; allied to *Wistaria* readily increased by seeds, or root tubers, in common soil.

A. monoica. 4. September. N. Amer. 1781.

— *sarmentoisa*. 2. September. N. Amer. 1820.

Amphi'come. (From *amphi*, around, and *come*, hair; in reference to the winged seed. Nat. ord., *Bignoniaceæ*. Syn., *Incarvillea*.)

Ornamental greenhouse herbaceous plants. They may be increased by seeds, or by cuttings, which root readily in sandy peat, in spring, if placed under glass. Loam, leaf-soil, and sand.

A. arguta. 1. Lilac. August. Himalaya Mountains. B. R. 1838, t. 19.

— *Emodi*. 1½. Rose, orange. October. E. Indies. 1852. B. M. t. 4890.

Amphilo'phium. (From *amphilo'phos*, encompassing the neck. Nat. ord., *Bignoniaceæ*.)

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

A. paniculatum. 20. Purple. W. Ind. 1738. Syn., *Bignonia paniculata*.

Amphisco'pia *Pohlia'na*. See *Dianthera*.

Amphithalia. (Nat. ord., *Leguminosæ*.)

A. ericifolia. 2. Pink. January. S. Africa. 1821. Syn., *Borbonia ericifolia*.

Amsonia. (In honour of *Charles Amson*, a scientific traveller in America. Nat. ord., *Apocynaceæ*.)

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 in autumn or spring, seeds.

A. angustifolia. 2. N. Amer. 1774.

— *Tabernaemontana*. 2. N. Amer. 1759. B. M. t. 1873. Syns., *A. latifolia* and *salicifolia*.

Amygdalus. (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., *Rosaceæ*.) This genus and *Prunus*, of which they are but sections.

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 true 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.

A. Boissieri. Pale rose. Asia Minor. 1879.

— *cochinchinensis*. Pink. March. Cochinchina. 1825.

— *communis*. 15. Red. April. Barbary. 1548.

— *amarra*. 1. Red. April. Barbary. 1548.

A. communis dulcis. 15. Red. March. 1548.

— *florep'no*. 15. Red. March. 1548.

— *foliis variegatis*. 15. Red. March. 1548.

— *fragilis*. 15. Red. April. Barbary. 1548.

— *grandiflora rosea*. 15. Rose. March. 1548.

— *macrocarpa*. 15. Red. April. Barbary. 1548.

— *persicoides*. 15. Red. April. Barbary. 1548.

— *pe'ndula*. 15. White. March. 1548.

— *salicifolia*. 15. White. March. 1548.

— *incana*. 2. Red. April. Caucasus. B. R. 1839, t. 58.

— *campestris*. 2. Red. April. Podolia. 1818.

— *georgica*. 3. Red. April. Georgia. 1818.

— *na'na*. Pink. Russia. B. M. t. 161.

— *orientalis*. 10. Red. April. Levant. 1756.

— *pedunculata*. 10. Red. April. Levant. 1833.

— *persica*. See *Persica*.

— *rubra*. Leaves deep red in spring. White. 1874.

— *pusilla*. 4. Red. April. China. 1683. B. M. t. 2176.

— *prostrata*. 2. Red. April. Crete. 1802.

— *sibirica*. 5. Red. April. Siberia. 1820. B. C. t. 1599.

Amyris. (From *α*, intensive, and *myrrha*, myrrh; in reference to its powerful perfume. Nat. ord., *Bursaceæ*.)

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 a hand-glass, in the spring months.

A. acuminata. See *Bursera*.

— *brazilensis*. 20. August. Brazil. 1823.

— *heptaphylla*. 16. E. Ind. 1820.

— *Luna'ni*. 12. July. Jamaica. 1820.

— *maritima*. 12. S. Amer. 1810.

— *na'na*. 5. E. Ind. 1822.

— *Plumieri*. 20. W. Ind. 1820. Syn., *A. elemifera*.

— *syriaca*. 16. July. Carthage. 1793.

— *tecoma'ca*. 20. Mexico. 1827.

— *toxi'fera*. 10. W. Ind. 1818. Syn., *A. balsamifera*.

— *zeylanica*. See *Balsamodendron*.

Ana'basis. (From the Greek, referring to its upright habit. Nat. ord., *Chenopodiaceæ*.)

Hardy shrub.

A. ammodendron. Yellow. Central Asia. 1888.

Anacampseros. (From *anakamp'to*, 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., *Portulacaceæ*.)

These are very pretty little succulent 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. angustifolia. 1. Pink. July. Cape of Good Hope. 1820.

— *arachnoides*. 1½. Pink. August. Cape of Good Hope. 1790. B. M. t. 1368.

- A. filamentosa*. 1. Pink. September. Cape of Good Hope. 1795. B. M. t. 1367.
 — *intermedia*. Pink. July. Cape of Good Hope. 1824.
 — *lanceolata*. 1. Pink. September. Cape of Good Hope. 1796.
 — *polyphylla*. 1. Pink. August. Cape of Good Hope. 1818.
 — *rotundifolia*. 1. Pink. August. Cape of Good Hope. 1732. B. C. t. 591.
 — *rubens*. 1. Red. August. Cape of Good Hope. 1796.
 — *rufescens*. 1. Pink. July. Cape of Good Hope. 1818.
 — *variana*. 1. Pink. August. Cape of Good Hope. 1813.

Anacardium. (From *ana*, like, and *kardia*, the heart; in reference to the form of the nut. Nat. ord., *Anacardiaceae*.)

A. occidentale produces the Cashew-nut. A stove evergreen tree, ornamental, producing paniced 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. occidentale*. 20. Green, red. W. Ind. 1699. Bedd. Fl. Syl. t. 163.
 — *indicum*. 20. Green, red. E. Ind. 1699.

Anacardium longifolium and *Cassuvium*. See *Semecarpus anacardium*.

Anacyclus. (From *ana*, like, and *kyklos*, a circle; in reference to the rows of ovaries in circles round the disc. Nat. ord., *Compositae*; Tribe, *Anthemideae*.)

Pretty hardy annuals allied to *Anthemis*. They should be sown in the open ground in April.

- A. alexandrinus*. Yellow. June. Egypt. 1828. Syn., *Cyrtolepis alexandrina*.
 — *arvensis*. See *Anthemis aurea*.
 — *clavatus*. 2. White. August. Barbary. 1810. Syn., *Anthemis incrassata*.
 — *pyrethrum*. 2. White. August. Barbary. 1837. B. M. t. 462. Syn., *Anthemis pyrethrum*.
 — *radicatus*. 2. Yellow. August. South of Europe. 1596.
 — *purpurascens*. Outer rays purple. Gf. t. 1074.
 — *tomentosus*. 1. White. July. South of Europe. 1803. Syn., *Anthemis pubescens*.

Anadenia. See *Grevillea*.

Anagallis. Pimpernel. (From *anagelao*, to laugh; fabled to possess a virtue to remove sadness. Nat. ord., *Primulaceae*.)

A favourite genus with gardeners. They are very interesting plants, of easy culture; all the perennial kinds, with the exception of *A. tenella*, 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. Seeds of the annuals may be sown in April in open border.

- A. alternifolia*. Yellow, pink. April. Rio Janeiro. 1839. Herbaceous perennial.
 — *arvensis*. Bright red. June. Europe. Syns., *A. carnea* and *phoenicea*.
 — *caerulea*. Blue. June. Europe.
 — *collina*. 3. Vermilion. August. Morocco. 1803. Greenhouse biennial. Syn., *A. grandiflora*. Andr. Bot. Rep. t. 367.

- A. collina a' lba comp'cta*. White. 1833. Gf. t. 1125.
 — *Willmoreana*. $\frac{1}{2}$. Purple. August. Madeira. 1834.
 — *fruticosa*. 3. Red. August. Morocco. 1802.
 — *Phili'nsis*. Deep blue. 1889.
 — *indica*. 1. Blue. July. Nepaul. 1824. Hardy annual.
 — *latifolia*. 1. Purple. August. Spain. 1759. Greenhouse biennial.
 — *linifolia*. Blue. August. Portugal. 1796. Greenhouse biennial.
 — *Marryatta*. 1. Copper. July. Hybrid. 1828. Half-hardy evergreen trailer.
 — *Mone'li*. 1. Blue. July. Italy. 1648. This and the next five are greenhouse herbaceous trailers. B. M. t. 319.
 — *Breweri*. $\frac{1}{2}$. Red. June. Gardens. 1648.
 — *ilicifolia*. 1. Lilac. May. 1836.
 — *Phoenicea*. Scarlet. May. Morocco. 1803.
 — *Philippii*. $\frac{1}{2}$. Rich blue. June. Gardens. 1803.
 — *Willmoreana*. A variety of *A. collina*. B. M. t. 3380.
 — *tene'la*. $\frac{1}{2}$. Rose colour. July. Britain. A creeper. Eng. Bot. ed. 3, t. 1148.
 — *Webbia*. 1. Blue. July. Portugal. 1828. Half-hardy trailer.
 — *Wellsia*. 1. Copper. August. English hybrid. 1830. Half-hardy trailer.

Anagyris. (From *ana*, like, and *gyros*, a spiral, or turning in a circle; in reference to its curved pods. Nat. ord., *Leguminosae*.)

Small ornamental shrubs or 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. foetida*. 9. Yellow. April. Spain. 1750. B. C. t. 740.
 — *glauca*. 6. Yellow. April. South of Europe. 1800.
 — *latifolia*. 19. Yellow. April. Teneriffe. 1815.

Anaphalis. (Altered from *Gnaphalium*. Nat. ord., *Compositae*; Tribe, *Inuloidae*.)

- A. Royleana*. White, yellow. September. India. 1882.

Ananas. (From *nanas*, the local name for the pine-apple in South America. Nat. ord., *Bromeliaceae*. Syn., *Ananassa*.)

For culture, see PINE-APPLE.

- A. bracamorensis*. Brazil. 1879.
 — *bracteata*. 3. Crimson. April. Brazil. 1820. B. R. t. 1081.
 — *debilis*. 3. Crimson. April. Brazil. 1820.
 — *lu'cida*. 3. Pink. April. S. Amer. 1820.
 — *sativa*. 3. Purple. April. S. Amer. 1690. The Pine-apple.
 — *variegata*.
 — *macrodon'tes*. Reddish. Belg. Hort. 1873, t. 5. Syn., *Bromelia undulata*.
 — *Mordilloana*. Columbia. 1869.
 — *Mensdorffiana*. A synonym of *Echmea Fernandea*.
 — *Porteana*. Philippines. 1866. Leaves yellow-banded. Belg. Hort. 1872, t. 16 to 19.

Anantherix viridis. See *Gomphocarpus*.

Anarrhinum. (From *a*, not, and *rhin*, nose. The snout-like form of the

allied genus *Antirrhinum* is wanting in this. Nat. ord., *Scrophulariaceæ*.)

Allied to Snapdragon. These plants are half-hardy annuals or perennials, and are very pretty. Seeds may be sown in the open borders in spring. The perennials may be perpetuated by cuttings.

- A. bellidifolium*. 2. Blue. July. France. 1629. B. M. t. 2056.
 — *fruticosum*. 2. White. August. South of Europe. 1826.
 — *hirsutum*. 1½. Whitish. Portugal. 1818. Syn., *A. Durimimum*.
 — *pubescens*. 12. White. August. South of Europe.

Anasta'tica. (From *anastasis*, resurrection; in reference to its hygrometrical property. Nat. ord., *Cruciferae*.)

An annual plant, native of the Egyptian and Syrian 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." The seeds of this curious annual, must be sown in a warm pit, where it may be kept until early summer, when it should be planted out in a warm border.

- A. Hierochuntica*. 1. White. July. Levant. 1597. B. M. t. 4400. Rose of Jericho.

Anasce'tum crassifolium. See *Polypodium (Drynaria)*.

Anchie'ta. (In honour of a Brazilian writer on plants of that name. Nat. ord., *Violaceæ*.)

An ornamental evergreen stove climber. Loam, peat, and sand. Young cuttings under a bell-glass in a gentle heat.

- A. purifolia*. 3. White, with red veins. July. Brazil. 1822.

Ancho'vy-pear. See *Grias*.

Anchoma'nes. (An ancient name for some plant. Nat. ord., *Araceæ*. Allied to *Amorphophallus*.)

Stove tuberous perennials. Like *Arisæma*, *Amorphophallus*, etc the leaf dies to the ground every autumn; the tuber should then be repotted in rich sandy loam, and leaf-soil; free drainage, and very little water given it until the following spring. During growth give abundance of water and keep in a moist atmosphere. Seeds, and offsets from the tubers. Summer temp. 60° to 85°; winter, 55° to 60°.

- A. dubius*. Spathe purplish outside, cream-coloured within. G. C. vol. 13 (1835), p. 669.
 — *Hookeri*. 3. Spathe purple, spadix whitish. June. Fernando Po. 1832. Syn., *Caladium petiolatum*.
 — *pa'llida*. Spathe paler. 1862. B. M. t. 5394.

Anchu'sa. (From *anchousa*, a cosmetic paint, formerly made from *A. tinctoria*, for staining the skin. Nat. ord., *Boraginææ*.)

A reddish-brown substance, thought to be a peculiar chemical principle, used by dyers, is obtained from the roots of *A. tinctoria*, or alkanet.

Ornamental hardy annual, biennial, or perennial plants of the easiest culture. Propagation, either by seeds in early spring, or division in autumn. *A. capensis* requires a little frame-protection during the winter months.

ANNUALS.

- A. aggregata*. ½. Blue. June. Levant. 1827.
 — *amæna*. 1. Blue. June. South of Europe. 1817. A form of *A. italica*.
 — *hybrida*. 2. White, blue. July. Italy. 1820.
 — *Milleri*. 1½. Blue. May. Mount Sinai and Egypt. 1824.
 — *parviflora*. 1. Blue. June. Levant. 1827. Sibth. Fl. Gr. t. 167.
 — *stylosa*. 1. Blue. May. Siberia. 1802.
 — *tene'lla*. See *Bothriospermum tenellum*.
 — *verrucosa*. See *Lycopsis orientalis*.

BIENNIALS.

- A. asperrima*. See *Arnebia hispidissima*.
 — *capensis*. 1. Blue. June. Cape of Good Hope. 1830. B. M. t. 1822.
 — *Gmelini*. 2. Blue. August. Podolia. 1817.
 — *latifolia*. See *Nonnea rosea*.

PERENNIALS.

- A. Agaridii*. 1. Blue. August. Siberia. 1820.
 — *Barrelieri*. 2. Blue. July. South of Europe. 1820. B. M. t. 2349.
 — *caespitosa*. ½. Blue. June. Levant. 1833. Sibth. Fl. Gr. t. 169.
 — *crispa*. 1. Blue. June. Corsica. 1835.
 — *hispida*. 2. Blue. July. Egypt. 1817.
 — *incarnata*. 2. Flesh. August. South of Europe. 1816.
 — *italica*. 3. Bright blue or purple. Summer. S. Europe, 1810. Syn., *A. azurea* and *paniculata*. B. R. t. 483.
 — *lana'ta*. See *Solenanthes lanatus*.
 — *longifolia*. 3. Blue. July. Italy. 1819.
 — *maculata*. 2. Blue. May. Russia. 1824.
 — *myosotidiflora*. 1. Pink. August. Levant. 1713. Syn., *Myosotis macrophylla*.
 — *officina'lis*. 2. Blue. August. Tauria. 1825.
 — *angustifolia*. 2. Purple. May. S. Europe. 1840. Syn., *A. procera* of B. M. t. 1897.
 — *incarnata*. Flowers flesh-coloured.
 — *ochroleuca*. 2. Purple. July. Britain.
 — *leptophylla*. 2. Purple. August. Europe. 1840. Syn., *A. procera* of Rich. Ic. Crit. t. 471, not B. M. 1897, which is *A. officinalis*, var. *angustifolia*.
 — *petiolata*. See *Cynoglossum petiolatum*.
 — *rupe'stris*. See *Éritrichium rupestre*.
 — *sempervirens*. 1½. Blue. Europe.
 — *sericea*. See *Myosotis sericea*.
 — *tinctoria*. 2. White. August. Montpellier. 1596. Syn., *Alkanna tinctoria*.
 — *undulata*. 2. Purple. July. Spain. 1752.
 — *zeylanica*. See *Bothriospermum tenellum*.

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

- Stove sub-shrub. For culture, see *BARLERIA*.
A. longiflora. Purple. April. Guayaquil. 1866. B. M. t. 5588.
 — *no'bilis*. Yellow, bracts red. June. Ecuador. 1863. B. M. t. 5594.

Anderso'nia. (In honour of William Anderson, surgeon, who accompanied Captain Cook on two voyages; also of Dr. Alexander Anderson, Prefect of the Botanic Gardens at St. Vincents. Nat. ord., *Epacridaceæ*.)

Very pretty and delicate greenhouse shrubs. Sandy peat; cuttings root readily, in autumn or spring, under a bell-glass in gentle heat.

- A. cœrulea*. 2. Calyx pink, corolla blue. King George's Sound, W. Australia. Gfl. t. 1180, fig. 2.
 — *depressa*. 2. Blue and white. W. Australia. Gfl. t. 1180, f. 1.
 — *homalostoma*. 1. Calyx pink, corolla blue. King George's Sound, W. Australia. Gfl. t. 1180, fig. 3.
 — *sprengelii* des. 2. Pink. March. Australia. 1803. B. M. t. 1645. Syn., *Sprengelia Andersoni*.

Andira. (Its local name in the Brazils. Nat. ord., *Leguminosæ*.)

Large ornamental stove evergreen trees. Soil, loam and peat; cuttings root readily under a bell-glass, in heat.

- A. inermis*. 20. Purple. Jamaica. 1773. The Cabbage Tree.
 — *racemosa*. 20. Purple. Brazil. 1818.

Androcybium. (From *aner*, a man, and *cymbos*, a cavity; the stamens are inclosed in a hollow formed by the folding of the limb of the petals. Nat. ord., *Liliacæ*; Tribe, *Angyllariacæ*.)

Greenhouse hulks of curious habit; the leaves spread out upon the ground, and the flowers are sessile in the middle of the tuft. Light sandy soil, dry atmosphere, and no shade; they require a season of rest, during which they require scarcely any water. Seeds, and offsets.

- A. eucomoides*. 1. Green. April. Cape of Good Hope. 1794. B. M. t. 641. Syn., *Melanthium eucomoides*.
 — *leucanthum*. White. Cape of Good Hope. Syn., *A. eucomoides*, Swt. Fl. Gard. t. 165.
 — *melanthoides*. 1. White. July. Cape of Good Hope. 1823.
 — *punctatum*. Whitish. S. Africa. 1874.
 — *volucra* re. 1. White. April. Cape of Good Hope. 1816.

Androlepis. (From *aner*, a man, and *lepis*, a scale; referring to the scaly stamens. Nat. ord., *Bromeliacæ*. This genus is now placed in *Æchmea*.)

Stove evergreen epiphyte. Seeds, and offsets, which are produced abundantly after flowering. For culture, see *ÆCHMEA*.

- A. Skinneri*. 1½. Calyx green; corolla yellow. Guatemala. 1850. Syns., *Billbergia Skinneri* and *Æchmea Skinneri*.

Androma'chia. (Nat. ord., *Compositæ*.)

Greenhouse herbaceous perennial.

- A. Maroni*. 2. Pale yellow. Brazil. 1887.

Andromeda. (A classical name, after the daughter of Cepheus and Cassiope, King and Queen of Æthiopia. Nat. ord., *Ericacæ*.)

Dwarf hardy shrubs, requiring peaty soil. Showy. Seeds sown when ripe, or by layers pegged down in autumn. The majority of the species are now removed to other genera.

- A. acuminata*. See *Leucothæa acuminata*.
 — *angustifolia*. See *Cassandra angustifolia*.
 — *arboresca*. See *Oxydendron arborescens*.
 — *axillaris*. See *Leucothæa axillaris*.
 — *buzifolia*. See *Agauria*.
 — *calycula* ta. See *Cassandra*.

A. campanulata. Greenish-white, tinted with red. Japan.

— *cane-scens*. 3. White. June. N. America. 1748.

— *Catesbœi*. See *Leucothæa spinulosa*.

— *chinensis*. Pink, white. August. Canton. 1829. B. C. t. 1648.

— *coriacea*. See *Leucothæa coriacea*.

— *crispa*. See *Cassandra angustifolia*.

— *dealbata*. 2. Pink. April. N. America. 1824. B. R. t. 1010. See *Zenobia speciosa*.

— *fasciculata*. See *Lyonia fasciculata*.

— *fastigiata*. See *Cassiope fastigiata*.

— *floribunda*. B. M. t. 1566. See *Pieris floribunda*.

— *glaucochylla*. Is a form of *A. polifolia*.

— *hypnotoides*. B. M. t. 2936. See *Cassiope hypnotoides*.

— *jamaicænsis*. B. C. t. 1873. See *Lyonia jamaicænsis*.

— *japonica*. With its var. *elegantissima*. See *Pieris japonica*.

— *Maria'na*. B. M. t. 1579. See *Leucothæa coriacea*.

— *neriifolia*. See *Leucothæa nerifolia*.

— *ovalifolia*. See *Pieris ovalifolia*.

— *phillyreæfolia*. B. R. 1844, t. 36. See *Pieris*.

— *pitulifera*. 3. White. June. Florida. 1842.

— *polifolia*. 1. Pink. July. Arctic and Alpine Europe. 1842. Eng. Bot. ed. 3, t. 883.

— *glaucochylla*. 1. Pink. July. N. America. 1812.

— *grandiflora*. 1. Pink. April. Ingria. 1790.

— *latifolia*. 3. Pink. July. N. America. 1790.

— *me'dia*. 1. White. July. Britain. 1790.

— *mi'nima*. 1. Pink. April. Britain. 1790.

— *oleifolia*. 1. Pink. April. Britain. 1790.

— *revoluta*. 1. Pink. April. N. of Europe. 1783.

— *rosmarinifolia*. 2. Pink. July. N. America. 1736.

— *subulata*. 1. Pink. July. N. of Europe. 1783.

— *racemosa*, with varieties *latifolia* and *stri'cta*. See *Zenobia racemosa*.

— *rubiginosa*. See *Lyonia rubiginosa*.

— *salicifolia*. B. M. 3286. See *Agauria*.

— *sine'nsis*. 2. Reddish. June. China. 1826? — *speciosa*. B. C. t. 551, with varieties *glauca*, *nitida*, *pulverulenta*, and *spicata*. See *Pieris speciosa*.

— *tetragona*. See *Cassiope tetragona*.

Andromy'cia. See *Xanthosoma*.

Andropogon. (From *aner*, a man, and *pogon*, a beard. Nat. ord., *Graminacæ*.)

A large genus of grasses, of little horticultural value. A few may be used in sub-tropical bedding. Seeds, or division.

A. formosus. March. 1882.

— *furcatus*. N. America.

— *halepensis*. See *Holcus halepensis*.

— *muricata*. India.

— *pubescens*. Dalmatia.

— *Schœnanthus*. 2. India. 1786. Syn., *A. citratum*. Lemon grass; very fragrant when bruised.

— *squarrosus*.

— *stri'atus*. Malabar.

Androsac'ce. (From *aner*, a man, and *sakos*, buckler; in reference to the resemblance of the anther to an ancient buckler. Nat. ord., *Primulacæ*.)

A favourite family of small alpine plants. All do well in the open air; they are very interesting plants for rockeries, etc.; increased by seeds;

and the perennials by division, stolons, or by cuttings.

- A. alpina*. †. Rose, with yellow throat. June. Switzerland. 1775. Syns., *A. glacialis* and *Hausmanni*, Leyd.
- *argentea*. †. White. June. Pyrenees. 1826. Syn., *A. imbricata*.
- *britanica*. One-tenth. White. 1890.
- *caenea*. 1. Flesh. July. Europe. 1768. Syns., *A. Lachenalii* and *A. puberula*.
- —. Rose-purple. Spring. Auvergne Alps. 1871. B. M. t. 5906.
- *carinata*. 1. Yellow. April. N. America. 1826.
- *chamaejasme*. †. Pink, with yellow eye. July. Austria. 1768. Syn., *A. villosa*, *Jacq.*
- *ciliata*. †. Carmine, white. June. Pyrenees.
- *coronopifolia*. 1. White. April. Russia. 1755. B. M. t. 2022.
- *elongata*. 1. White. April. Austria. 1776.
- *na'na*. 1. White. April. Denmark. 1803.
- *filiformis*. 1. White. May. Siberia. 1820.
- *foliosa*. Lilac. May to September. W. Himalaya. B. M. t. 6661.
- *Hausmanni*, Leyd. See *A. alpina*.
- *helvetica*. White, yellow. May. Switzerland. 1775. Syn., *A. aretaria*.
- *laetea*. 1. White. July. Austria. 1752. Syn., *A. parviflora*. B. M. t. 981.
- *lactiflora*. 1. White. August. Siberia. 1806. Syn., *A. alismoides*.
- *Laggeti*. †. Pink. Pyrenees. 1879.
- *lanuginosa*. †. Rose, lilac. June. Himalayas. 1842.
- —. *Leichlinii*. White, with red eye. 1890.
- *linearis*. †. White. April. N. America. 1806.
- *macrocarpa*. 1. White. July. Siberia. 1827.
- *maxima*. 1. White. April. Europe, Asia, Africa. 1797.
- *na'na*. A variety of *A. elongata*.
- *obtusifolia*. 1. Pink. April. Italy. 1817. Syns., *A. aretioides* and *A. brevifolia*.
- *pubescens*. White, with yellow eye. June. Central Tyrolean Alps. 1869. B. M. t. 5898.
- *pyrenaea*. One-twelfth. White, with yellow eye. Summer. Pyrenees.
- *rotundifolia macrocarpa*. Pale rose. June. Himalayas. 1796. B. M. t. 6617.
- *sarmentosa*. †. Rosy purple. April. Himalayas. 1876. B. M. t. 6210.
- *septentrionalis*. 1. White. July. Siberia. 1825. B. M. 2021. Syn., *A. acutis*.
- *villosa*. Pink. June. Pyrenees. 1790. Syn., *A. penicillata*. B. M. t. 743.
- *Vitalia*. †. Yellow. Alps. 1787. Syn., *Gregoria Vitaliana*.
- *Wulfeniana*. †. Rosy. Summer. Styria. Perhaps a form of *A. alpina*.

Androsæmum officinale. See *Hypericum Androsæmum*.

Androstæphium. (From *aner*, a man, and *stephanos*, a crown; some of the stamens are barren and petaloid, forming a corona. Nat. ord., *Liliaceæ*. Allied to *Brodiaea*.)

Hardy bulb of dwarf habit, with umbellate flowers. Seeds, offsets. Rich sandy loam. Protection of a frame in winter.

A. violaceum. †. Violet-blue. Spring. Texas. 1874.

Andryala. (Of unknown meaning. Nat. ord., *Compositæ*. 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.

- A. argentea*. 1. Yellow. August. Pyrenees. 1817. Biennial.
- *cheiranthifolia*. 2. Yellow. June. Madeira. 1777. Greenhouse perennial.
- *crithmifolia*. 1. Yellow. August. Madeira. 1778. Greenhouse biennial.
- *incana*. 1. Yellow. June. Pyrenees. 1818. Biennial.
- *integrifolia*. 1. Yellow. August. S. of Europe. 1711. Biennial.
- *mogadorensis*. 2. Yellow. April. Morocco. 1871.
- *ni'gricans*. 1. Yellow. August. Barbary. 1804. Annual.
- *pinnatifida*. 1. Yellow. July. Madeira. 1778. Greenhouse biennial.
- *Ragusi'na*. 1. Yellow. August. Grecian Archipelago. 1753. Greenhouse perennial.
- *runcinata*. 1. Yellow. July. S. of Europe. 1711. Biennial.
- *varia*. 1 to 3. Yellow. 1882.

Aneile'ma. (From *an*, not, and *eilema*, involucre; in reference to the absence of the involucre. Nat. ord., *Commelinaceæ*.)

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

GREENHOUSE.

- A. biflorum*. 1. Blue. August. Australia. 1820. Evergreen.
- *gramineum affine*. 1. Blue. August. Australia. 1820. Evergreen.
- *nudiflorum*. 1. Blue. July. E. Indies. 1824. Biennial. Rchb. Ic. Exot. t. 136. Syn., *Commelina nudiflora*.
- *sinicum*. 1. Purple-blue. May. China. 1820. Herbaceous perennial. Syn., *A. secundum*. Wight Ic. t. 2075.
- *spiratum*. 1. Blue. July. E. Ind. 1783. Evergreen. Wight Ic. t. 2077.

STOVE.

- A. acuminatum*. 1. Blue. August. Australia. 1822. Evergreen.
- *œquinoctiale*. 1. Blue. July. Guinea. 1820. Evergreen.
- *ambiguum*. 3. Blue. July. Sierra Leone. 1822. Herbaceous.
- *crispatum*. See *Polka crispata*.
- *giganteum*. 1. Blue. July. Mozambique. 1825. Herbaceous perennial. Wight Ic. t. 2074. Syns., *A. ensifolium* and *A. longifolium*.
- *nudiflorum*. 1. Blue. July. E. Ind. 1818. Evergreen. Syn., *A. nudicaule*.
- *serrulata*. 1. Blue. July. Trinidad. 1824. Evergreen.

Anemia. (From *anemon*, naked; in reference to the naked inflorescence. Nat. ord., *Filices—Polypodiaceæ*.)

Handsome stove and greenhouse ferns, allied to *Schizæa*; soil, loam, fibrous peat, leaf-soil, and sand. See *FERNS*, for general culture.

- A. adiantifolia*. 3. August. W. Ind. 1793.
- *coccinea*. 1. August. W. Ind. 1830.
- *collina*. 1. August. Brazil. 1824. Syn. *A. hirta*.
- *deltoides*. See *A. tomentosa*.
- *Dregeana*. †. Natal.
- *flexuosa*. See *A. tomentosa*.
- *hirta*. See *A. collina*.

- A. hirsuta*. 3. June. Jamaica. 1704. Syn.,
A. repens.
tenella. 1. May. W. Ind. 1843.
hu'milis. 1. July. S. America. 1823.
mandiocca'na. 1. Mandioca district, near
 Rio Janeiro. Hook. Gard. Ferns, t. 36.
radicans. 1. Yellow. May. Brazil.
 1831.
Phyllitidis. 1. June. Trinidad. 1830. Syn.,
Anemidictyon Phyllitidis.
fraxinifolia. 1. June. Brazil. 1828.
lacinia'ta. 1. August. W. Ind. 1794.
lanceola'ta. 2. August. W. Ind. 1820.
linea'ta. Fronds, with a yellowish-green
 central stripe. S. America. 1868.
longifolia. 1. August. Brazil. 1831.
tessella'ta. Pinnæ dark green, with bright-
 green centre, and leaden-grey border.
 Brazil. 1875. Syn., *A. phyllitidis*
plumbea.
radicans. See *A. mandioccana*, var. *radicans*.
repens. See *A. hirsuta*.
tenella. See *A. hirsuta*, var. *tenella*.
tomentosa. 1. Tropical America. Syns.,
A. deltoidea, *A. flexuosa*, and *A. villosa*.
villo'sa. See *A. tomentosa*.

Anemidictyon. See Anemia.

Anemio'psis. (From *aneimon*,
 naked, and *opsis*, like; stems almost
 leafless. Nat. ord., *Saururaceæ*.) This
 genus is referred to *Houttynia* in the
 Genera Plantarum.

Hardy sub-aquatic perennial. See AQUARIUM.

- A. californica*. White. California. 1862. B.
 M. t. 5292.

Anemo'ne. Wind-flower. (From
anemos, the wind; inhabiting exposed
 places. Nat. ord., *Ranunculaceæ*. Syn.,
Hepatica.)

They are all hardy, except *A. cape'nsis*, which
 requires the protection of a greenhouse in winter.
 The tuberous-rooted are propagated from offsets;
 and the herbaceous from divisions of the roots;
 and, both from seeds. They all require a light,
 rich, and well-drained loam.

TUBEROUS ROOTED.

- A. apenni'na*. $\frac{1}{2}$. Blue. April. England. Eng.
 Bot. ed. 3, t. 10.
balde'nsis. $\frac{1}{2}$. White. May. Switzerland.
 1792.
blan'da. $\frac{1}{2}$. Deep blue. Winter. Eastern
 Europe.
cæru'lea. $1\frac{1}{2}$. Blue. May. Siberia. 1826. A
 form of *A. nemorosa*.
carolinia'na. 1. White. May. Carolina.
 1824.
corona'ria. $\frac{1}{2}$. Striped. June. Levant. 1596.
a'liba. White. 1882.
ple'na. $\frac{3}{4}$. Striped. April.
Fischeria'na. $\frac{3}{4}$. White. April. Siberia. 1827.
horte'nsis. $\frac{3}{4}$. Striped. April. Italy. 1597.
 Forms of this are *A. fulgens*, *pavonia*,
 and *stellata*.
msnia'ta. $\frac{1}{2}$. Red. May. Gardens.
lancifolia. $\frac{1}{2}$. White. April. N. Amer. 1822.
nemoro'sa. $\frac{1}{2}$. White, red. April. Britain.
 Eng. Bot. ed. 3, t. 11.
cæru'lea. $\frac{1}{2}$. Light blue. May. Gardens.
 Syn., *A. nemorosa* *Robinsoniana*.
fo're-ple'no. $\frac{1}{2}$. White, red. April.
 Britain.
ro'sea. Rose-coloured.
palma'ta. $\frac{1}{2}$. Yellow. May. Portugal. 1597.
fo're-a'lbido. $\frac{3}{4}$. Whitish. May.
fo're-fla'vo. $\frac{3}{4}$. Yellow. May. Portugal.
 1597.
fo're-ple'no. $\frac{3}{4}$. Yellow. May.

- A. parviflora*. $\frac{1}{2}$. White. May. N. Amer. 1824.
quinquefolia. $\frac{1}{2}$. White. April. N. Amer.
 1817.
ranunculoides. $\frac{1}{2}$. Yellow. April. England.
 Eng. Bot. ed. 3, t. 12.
reflexa. $\frac{1}{2}$. Yellow. April. Siberia. 1818.
stellata. See *A. hortensis*.
fo're-ple'no. 1. Red. May. Europe.
fulgens. 1. Red. May. South of Europe.
 1818.
purpu'rea. $\frac{1}{2}$. Purple. April. Italy.
 1597.
umbella'ta. 1. Blue. April. Levant. 1824.

HERBACEOUS.

- A. acutipe'tala*. $\frac{1}{2}$. Blue. May. Switzerland.
 1819.
a'liba. $\frac{1}{2}$. White. June. Siberia. 1820.
alba'na. $\frac{1}{2}$. White. May. Caucasus. 1821.
alpi'na. $\frac{1}{2}$. White. Austria. 1658.
sulphu'rea. $\frac{1}{2}$. Sulphur. May. Europe.
 1816.
angulos'a. $\frac{1}{2}$. Blue. March. N. Amer. Syn.,
Hepatica angulosa.
cape'nsis. 1. Purple. April. Cape of Good
 Hope. 1795. Greenhouse.
ce'rnua. $\frac{1}{2}$. Red, white. May. Japan. 1806.
decapeta'la. 1. Creamy. May. N. W. Amer.
deltoid'ea. White. May. Columbia. 1827.
dicho'toma. 1. Red, white. May. N. Amer.
 1768.
Fanni'ni. White. Natal.
fulgens. See *A. hortensis*.
Gavania'na. Nepal. 1844.
Halle'ri. $\frac{1}{2}$. Purple. April. Switzerland.
 1816. Syn., *Pulsatilla Halleri*.
hepatica. $\frac{1}{2}$. Blue. March. N. America.
 1800. Syns., *Hepatica americana* and
H. triloba.
acutiflora. $\frac{1}{2}$. Blue. March. N. Amer.
 1818.
a'liba. $\frac{1}{2}$. White. March. N. Amer. 1835.
marmora'ta. $\frac{1}{2}$. Blue. Leaves blotched
 with greyish-green. Mentone.
ru'bra. $\frac{1}{2}$. Red. March. N. Amer.
 1855.
japo'nica. 2. Rose. September. Japan.
 1844.
a'liba. White. August.
e'legans. Pale rose. Garden hybrid.
longica'pa. White. June. North India. 1839.
 Half-hardy.
micra'ntha. $\frac{1}{2}$. White, purple. April. Austria.
 1800.
monta'na. 1. Purple. June. Switzerland.
 1830.
multifida. 1. Red or yellow. June. N. Amer.
 Syn., *A. Hudsoniana*.
narcissiflora. 1. White. May. Siberia. 1773.
obso'la. $\frac{1}{2}$. Purple. May. Germany.
obtusifolia. White. June. Himalaya. 1844.
obtusifolia. $\frac{1}{2}$. White. June. Himalaya.
 1843.
pa'tens. 1. Purple or light yellow. June.
 Siberia. 1752.
Nuttallia'na. $\frac{1}{2}$. White. July. N. Amer.
 1827.
ochroleuca. 1. Cream. April. Siberia.
 1752.
Pavonia. See *A. hortensis*.
pennsylvanica. 1. Green. May. N. Amer.
 1756.
polyanthes. White. Himalayas. B. M.
 t. 6840.
pratensis. $\frac{1}{2}$. Dark purple. May. Germany.
 1731. Syn., *Pulsatilla pratensis*.
pulsatilla. $\frac{1}{2}$. Violet. May. England. Eng.
 Bot. ed. 3, t. 9.
a'lbida. $\frac{1}{2}$. Whitish. April. Germany.
 1834.
dahurica. $\frac{1}{2}$. Flesh. May. Dahuria.
 1819.
ilicifolia. Lilac.

- A. pulsatilla rubra*. Reddish-purple. May. Germany. 1834.
 — *Richardsonia* $\frac{1}{2}$. Yellow. June. N. Amer. 1827.
 — *ridularis*. 2. White. 1882.
 — *rivularis*. $1\frac{1}{2}$. White. June. North Ind. 1840.
 — *sibirica*. $\frac{1}{2}$. White. June. Siberia. 1804.
 — *syloëstris*. $\frac{1}{2}$. White. May. Germany. 1596.
 — *trifolia*. $\frac{1}{2}$. White. April. Central and S. Europe. 1597. B. M. t. 6846.
 — *uralensis*. $\frac{1}{2}$. Blue. May. Siberia. 1824.
 — *vernal'is*. $\frac{1}{2}$. Purple. April. Switzerland. 1752. Syn., *Pulsatilla vernalis*.
 — *fo're-lu'teo*. $\frac{1}{2}$. Yellow. April. South of Europe.
 — *virginiana*. $\frac{1}{2}$. White. May. N. Amer. 1772.
 — *vitifolia*. 3. White. September. Nepaul. 1829.

The anemone, the florist's flower of our gardens, is the offspring of the *A. coronaria* (poppy anemone).

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, etc.

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 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 May and June, 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.

Sowing.—Make the beds in a sheltered part of your garden, facing the south; trenching them 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. 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 latter 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.

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 is a proper height, 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 required 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 particularized, 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 *Eci'dium quadrifidum*. 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.

Anemone'opsis. (From *anemone*, and *opsis*, resemblance; on account of its Anemone-like flowers. Nat. ord., *Ranunculaceæ*. Allied to *Cimicifuga*.)

Hardy perennial herb, with handsome flowers resembling *Anemone japonica*. Seeds, division of the root-stock. Any light rich soil.

A. macrophylla. 2 to 3. Lilac. July. Japan. 1879. B. M. t. 6413.

Anemopa'gma. (From *anemos*, the wind, and *paigma*, sport. Nat. ord., *Bignoniaceæ*.)

Handsome stove climbing shrubs. For cultivation, see BIGNONIA.

A. racemosum. Buff. Brazil. 1879.

— *clematidum*. See *Pithecoctenium clematidum*.

Bignonia Chamberlayni, figured in B. R. t. 741, and B. M. t. 2143, is probably a species of this genus.

Anethum. Dill, or Fennel. (From *ano*, upwards, and *theo*, to run; in reference to its quick growth. Nat. ord., *Umbelliferae*.) United with *Pencadanum* in the Genera *Plantarum*.

A genus of no garden value, except the species *A. graveolens*, which is called Dill. It is used for flavouring soups, sauces, etc. The seeds should be sown broadcast or in drills in March or April. Only the young leaves are used. All hardy, readily increased by seed or root division.

A. fœniculaceum. See *Fœniculaceum vulgare*.

— *du'ice*. See *Fœniculaceum dulce*.

— *graveolens*. 3. Yellow. July. Spain. 1570.

— *piperitum*. 6. Yellow. July. Italy. 1824.

— *segetum*. 1. Yellow. July. S. Europe. Jacq. Hort. Vind. t. 132. Syn., *A. pusillum*, Hort.

— *So'wa*. 1. Yellow. July. E. Ind. 1810.

Ange'lica. (In reference to its fabled angelic virtues in medicine. Nat. ord., *Umbelliferae*.)

A genus of no particular garden value. *A. officinalis* was at one time used in confectionery, and was supposed to have medicinal properties.

A. officinalis. 4. July. Green. England. Syn., *A. archangelica*.

— *songrica*. White. Central Asia. 1879.

Ange'lica-tree. *Ara'lia spinosa*.

Angelo'nia. (From *angelon*, its local name in South America. Nat. ord., *Scrophulariaceæ*. Allied to *Hemimeris*.)

Pretty stove herbaceous perennials; seed in heat, sown in February; division of the roots of

several kinds, and cuttings of young shoots in April, inserted in sand under a bell-glass; must not be kept too damp, air must be given daily; loam and peat.

A. angustifolia. 1½. Deep violet. June. Mexico. 1846.

— *cornigera*. 1. Purple. August. Brazil. 1839. B. M. t. 3843.

— *floribunda*. 1. Purple. August. Brazil. 1839.

— *Gardneri*. 1. Purplish-white. May. Pernambuco. 1838. B. M. t. 3754.

— *grandiflora*. 1. Purplish-white. May. Pernambuco. 1838.

— *minuta*. 1. Purplish-white. May. Pernambuco. 1838.

— *sabiceoides*. 2. Light blue. August. S. Amer. 1818. B. M. 2478.

Angia'nthus. (From *ageion*, a vase, and *anthos*, a flower; referring to the inflorescence. Nat. ord., *Compositæ*; Tribe, *Inuloidæ*.)

A. aureus. See *Cassinia aurea*.

— *pusillus*. Dark straw-coloured. July. Australia. 1858. Syn., *Chrysocoryne angianthoides*.

Angio'pteris. (From *ageion*, a vessel, and *pterus*, a wing. Nat. ord., *Filices*.)

Stove ferns, requiring plenty of room to fully develop, and a plentiful supply of water. Soil loam, peat and sand, with thorough drainage.

A. evecta. 2 to 6. June. Tropics of Old World. Hook. Fil. Exot. t. 76.

— *pruinosa*. Java.

— *Teysmanniana*. Java.

Ango'phora. (From *aggos*, a vessel, and *phero*, to bear; in reference to the shape of the fruit. Nat. ord., *Myrtaceæ*.)

Greenhouse evergreen ornamental shrubs; cuttings of ripened shoots under a bell-glass; loam, leaf-soil, peat and sharp sand.

A. cordifolia. 6. Yellow. August. Australia. 1789. Syn., *Eucalyptus hirsuta*, *Metrosideros anomala*, *M. hirsuta*, and *M. hispida* (B. M. t. 1960).

— *lancoolata*. 6. Yellow. May. Australia. 1816.

Angræ'cum. (From *angurek*, the Malay term for air-plants. Nat. ord., *Orchidaceæ*; Tribe, *Vandææ*, *Sarcandtheæ*.)

By offsets in spring, sphagnum moss, and broken pots herds, 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. apiculatum. B. M. t. 4159. See *A. bilobum*.

— *Dormanianum*. Ovaries and tips of sepals flaked vermilion.

— *arcuatum*. ½. White. Natal. Syn., *Listrostachys arcuata*.

— *armenicum*. Yellowish-pink. Sierra Leone. 1838.

— *articulatum*. White. Madagascar. 1872.

— *ashante'nsis*. ½. Cinnamon. June. Ashantee. 1843.

— *avicularium*. ½. White. 1887.

— *bilobum*. ½. White. September. Cape Coast. 1841. Syn., *A. apiculatum*.

— *Ki'rkei*. Zanzibar. 1875.

— *calligerum*. White. 1887.

— *caudatum*. 1½. White, green. August. Sierra Leone. 1834.

- A. carulea* scen. 1½. Green, white. September. India. 1834.
- *cephalotes*. White. Tropical Africa. 1873. Syn., *Listrostachys cephalotes*.
- *Chaillua* num. White. Gaboon, W. Africa. 1866.
- *Christya* num. Whitish. 1880.
- *citra* tum. Cream. Madagascar. 1866. B. M. t. 5624.
- *clande*stinum. ½. Green, white. September. Sierra Leone. 1835.
- *cry*ptodum. White. Madagascar. 1883.
- *desc*endens. G. C. 1882, vol. 17, p. 558.
- *di*stichum. B. M. t. 1781. See *Mystacidium*.
- *ebu*rneum. 1½. Whitish. Madagascar. 1826.
- — *vi*rens. Lip green in the centre. B. M. t. 5170. *A. ebur*neum, of B. R. 1822, and B. M. 4761, is *A. super*bum.
- *Eichleria* num. Light green, lip white. Loango, W. Africa, 1882.
- *Ell*isi. 1. White, buff. Madagascar. 1870.
- *falea*tum. Pure white. Japan. 1815. B. M. t. 2097. Syn., *Limodorum falcatum*.
- *fastu*sum. White. Madagascar. 1881.
- *flor*ulentum. G. C. 1885, vol. 23, p. 787.
- *fra*grams. White. January. Bourbon. 1887. B. M. t. 7161.
- *fun*ale. B. M. t. 4295. See *Dendrophylax funalis*.
- *fusa*tum. Ochre, white. Madagascar. 1882.
- *Germiny*a num. Pure white. Madagascar. 1889. B. M. t. 7061.
- *gladi*folium. White. February. Bourbon. B. R. 1840, t. 68.
- *glom*eratum. White. Sierra Leone. 1884.
- *Grandi*leria num. Ivory white. Comoro Islands. Rev. Hort. 1887, p. 42, f. 9. Syn., *Aeranthus Grandi*lerianus.
- *hyalo*ides. Whitish. Madagascar. 1880.
- *ichneu*meum. Ochreous-white. W. Tropical Africa. Syn., *Listrostachys ichneumonea*.
- *imbr*icata tum. Creamy-white; lip orange and yellow. 1887.
- *Kimballia* num. See *A. polystachys*.
- *Ko*tshyf. White. Zanzibar. 1880.
- *mic*ranthum. B. R. 1772. See *Campylocetron micranthum*.
- *mod*estum. White. April. Madagascar. B. M. 6693.
- *odor*atissimum. White. Sierra Leone. 1832.
- *ophio*plectron. Greenish-yellow, spur, ochre-red. Madagascar. Syn., *Aeranthus ophioplectron*.
- *ornitho*rhyanchum. See *Aeranthus ornithorhynchus*.
- *pell*ucidum. ½. White. November. Sierra Leone. 1842.
- *pert*usum. ½. White. October. Sierra Leone. 1836. B. M. t. 4782.
- *Pescatorea* num. White. Bourbon.
- *polyst*achyum. See *Aeranthus polystachys*.
- *polyst*achys. Whitish-green. 1889. Syn., *A. Kimballianum*.
- *ri*ngens. Yellowish-white. Cameroons. 1878. Syn., *Listrostachys ringens*.
- *rost*ellare. G. C. 1885, vol. 23, p. 726.
- *Sand*elia num. White. Comoro Islands. 1888. Rev. Hort. 1888, p. 516.
- *Scottia* num. White. Comoro Islands. 1878. B. M. t. 6723.
- *Sede*ni. E. Tropical Africa. 1878. Syn., *Listrostachys Sedeni*.
- *sesqui*pedale. 2. White. Madagascar. 1857. B. M. t. 5113.
- *subu*la tum. White. Sierra Leone. 1832.
- *sup*erbum. Green; lip white. Madagascar. Syn., *A. eburneum* of B. R. t. 1522, and B. M. t. 4761.
- *te*nue. Syn., *A. purpurascens*. G. C. 1852, p. 390. A doubtful plant.
- *teret*ifolium. White. Sierra Leone.
- *trid*actylites. Buff. Sierra Leone. 1888.

Anguilla'ria. (From *anguilla*, an eel; in reference to the twisted seeds. Nat. ord., *Melanthaceae*. Allied to *Veratrum*.)

Half-hardy herbaceous plants, requiring a little protection in winter; division of roots, and cuttings, under a hand-light; peat and loam.

A. diol'ca. 1. Purple. May. N. S. Wales. 1826.

— *biglandu*'sa. 1. Purple. May. Australia. 1826.

— *i*'ndica. See *Iphigenia indica*.

Angulo'a. (In honour of *Angulo*, a Spanish naturalist. Nat. ord., *Orchidaceae*.)

Stove orchids, requiring the same culture as *Angræcum*.

A. Clow'sii. 1½. May. Sepals and petals yellow, lip white. Columbia. 1842.

— *fl*'oribus fl'avis. 1½. May. Pale yellow. 1845.

— *du*'bia. White, blotched with purple. U. S. of Columbia. 1882.

— *grandi*'sora. 1. July. S. Amer. 1823.

— *purp*'ura.

— *interm*'edia. Garden hybrid. 1888.

— *Ru*'ckeri. 1½. Yellow, crimson. May. 1845.

— *a*'lba. White. 1888.

— *m*'edia. Yellow, spotted crimson, lip crimson. Columbia. 1887.

— *retu*'sa. Lemon, blotched purple. 1883.

— *sangu*'nea. Red. May.

— *sup*'erba. See *Acinetia Humboldtii*.

— *uni*'flora. Cream-coloured. Columbia. 1844.

There is a variety with pink flowers.

— *ebu*'rnea. White, lip spotted with pink. New Grenada. Will. Orch. Alb. t. 133.

Angu'ria. (One of the Greek names for the cucumber. Nat. ord., *Cucurbitaceae*.)

Stove evergreen climbers; seed and cuttings; peat and loam.

A. Mackaya'na. Vermilion. Guatemala. 1846. Fl. Ser. t. 222.

— *peda*'ta. 20. Yellow. July. S. Amer. 1820.

— *trilo*'ba'ta. 20. Pink. July. Carthage. 1793.

— *trifo*'lia'ta. 10. Yellow. July. St. Domingo. 1793.

— *umbro*'sa. 10. Yellow. July. S. Amer. 1827.

— *Warsce*'wiczii. Scarlet. Panama. 1862. B. M. t. 5304.

Anhalo'nium. (From *an*, without, and *helos*, a nail or spike. Nat. ord., *Cactaceae*.)

Warm greenhouse succulent perennials; soil, sandy loam and finely broken bricks; full exposure to sun; seeds.

A. prisma'ticum. ½. St. Louis, Potosi. Berl. Gart. Zeit. 1885, p. 541.

— *Engelma*'nni. Ill. Hort. 1869, t. 606a.

— *fissu*'ra'tum. Wien. Gart. Zeit. 1887, p. 428.

— *Levi*'nii. Dwarf. Pale rose. Mexico. Gf. 1888, p. 411.

— *prisma*'ticum. See *Mammillaria aloides*.

— *Williamsii*. Gf. 1888, p. 411.

Ania bico'rnis. B. R. 1844, t. 8. See **Tainia.**

Anigoza'nthus. (From *anoigo*, to expand, and *anthos*, flower; in reference to the branching expansion of the flower. Nat. ord., *Hæmodoraceae*.)

- Cool greenhouse herbaceous plants, with curious elongated woolly flowers. Division of roots in spring; one part loam to three of peat.
- A. bicolor*. 3. Scarlet, green. May. Swan River. 1837.
 - *coccinea*. 5. Crimson. June. Swan River. 1837.
 - *avida*. 3. Yellowish-green. May. Australia. 1808. Red. Lil. t. 176. Syns., *A. coccinea*, *A. grandiflora*, and *A. Manglesi*, Maund Bot. t. 67, but not of *Don*.
 - *fuliginosa*. See *Macropodia fuliginosa*.
 - *hu'nilis*. Red or yellow. Swan River.
 - *Mangle'sii* Don. 3. Green. May. Swan River. 1833. Swt. Fl. Gard. ser. 2, t. 265.
 - — *angustifolia*. 3. Green, red. July. Australia. 1836. B. R. t. 2012.
 - *pulcherrima*. 2½. May. Yellow. white. Swan River. 1840.
 - *ru'fa*. 2. Purple. June. Australia. 1824.
 - *tyrianthina*. 3. Purple, white. May. Swan River. B. M. t. 4507.

Animal Matters, without any exception, are beneficial as manures; for they all yield, during putrefaction, gases and soluble substances, that are taken up 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**.

Fish, generally, such as sprats, herrings, pilchards, five-fingers, and shellfish, owe their powerful fertilizing 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. Shellfish 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 eighty per cent. of water, and twenty per cent. solid matter. The latter contains, in 100 parts, when dried—

Carbon	51.950
Hydrogen	7.165
Nitrogen	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 fertilizing 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
Nitrogen	17.710
Oxygen }	24.608
Sulphur }	

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
Nitrogen	17.284
Oxygen }	24.426
Sulphur }	

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.	Carbo-nate 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.

Anisanthus. See *Antholyza*.

A. sple'ndens. See *Antholyza ca'ffra*.

Anisca'ntha. (From *anisos*, unequal, and *akantha*, a spine. Nat. ord., *Chenopodiaceae*.)

Cool greenhouse evergreen shrub; cuttings of young shoots, a little hard at bottom, in April; peat and loam.

A. divarica'ta. 2. N. Holland. 1824.

Ani'se. *Pimpinella ani'sum*.

Hardy annual, used for garnishing or seasoning. Sow during latter end of April on warm south border, and when large enough to handle, thin the plants to six inches apart. The seed is ripe in August or September. It does not bear transplanting well.

A'niseed-tree. *Ill'icium anisa'tum*.

Anisochilus. (From *anisos*, unequal, and *cheilos*, lip, referring to the unequal lips of calyx and corolla. Nat. ord., *Labiatae*.)

Stove ornamental biennial; seeds in heat, or cuttings in sandy soil, under a bell-glass.

A. carnosia. 2. Lilac. June to September. E. Ind. 1778.

Anisomeles. (From *anisos*, unequal, and *melos*, a member. Nat. ord., *Labiatae*.)

Chiefly evergreen stove or greenhouse ornamental shrubs; cuttings of stove species in April, in heat, under a bell-glass. Greenhouse species, under glass, without heat. Sow the annual in March, in heat; loam and peat.

A. furecata. 1. Blue. August. Nepaul. 1824.

Greenhouse. Syn., *Ajuga furecata*.

— *malabarica*. 2. Violet. July. E. Ind. 1817.

B. M. t. 2071.

— *moschata*. 2. Purple. August. N. Holland. 1824.

— *ovata*. 2. Pink. August. E. Ind. 1823. Stove annual. Wight Icon. t. 865.

Anisoptalum Careya'num.
See **Bulbophyllum**.

Anisopia horticola, is a beetle which often attacks the rose-flowers about June. Its maggots live under turf, and feed on its roots.

Annuals are plants which live but one year, and, consequently, require to be raised from seed annually.

Hardy Annuals, or those requiring no protection, are sown where they are to remain in the open borders, from the end of February to the beginning of May. To flower late in autumn, some may be sown in the middle of June. Whether sown in patches or broad masses, whether mixed or separate, must be left to the taste of the sower, guided by his knowledge of the colours of the flowers, which should be well contrasted. Every patch should be properly labelled, which is easily done by having some deal laths, one inch broad, planed smooth, cut into nine-inch lengths, and painted white. On these the name can be written with a lead pencil.

Half-hardy Annuals, such as require artificial heat while seedlings, are sown in a gentle hotbed in March and April. The seedlings, when an inch or two high, to be transplanted into another gentle hotbed, or greenhouse, to remain until the middle of May, then to be transplanted into the borders, and attended like other annuals.

Tender or Greenhouse Annuals, requiring artificial heat and shelter during their whole growth are sown early in March on a hotbed, transplanted when ready to handle, and finally into pots to

bloom in the greenhouse. Some of them if planted out on a warm border in June, will bloom freely and even ripen seed.

Anne'slia grandiflora is a synonym of **Calliandra grandiflora**, and **A. spinosa** of **Euryale ferox**.

Anoda. (From *anodas*, impervious; cells more united than in *Sida*. Nat. ord., *Malvaceae*.)

Half-hardy sub-shrub. For culture, see **CRISTARIA**.

A. crenatiflora. Mexico. Syn., *A. parviflora*.

— *Dillenia*. 3. Purple. July, Mexico. 1725.

Syn., *Sida cristata*. B. M. t. 330.

— *Ochse'ni*. Purple. Chili. 1866.

— *hastata*. White or purple. Mexico. 1799.

Anodonte. (From *Ano*, not, and *odontos*, a tooth; in reference to the stamens. Nat. ord., *Cruciferae*.) The following species of this genus, which have been in cultivation, are now referred to **Alyssum**, viz., **Anodonte dasycarpa**, **A. edentula**, **A. halimifolia**, **A. macrocarpa**, **A. obovata**, **A. rupestris**, and **A. spinosa**.

Anoctochilus. (From *anoikios*, open, and *cheilos*, a lip; in reference to the spreading apex of the lip. Nat. ord., *Orchidaceae*.)

Very handsome stove terrestrial orchids, requiring to be grown under glass-cases or bell-glasses, giving air occasionally to prevent the plants drawing or damping off. The flowers as a rule small and inconspicuous, should be removed as soon as they appear, this will assist colouring of the leaves, which are the chief attraction in these charming and delicate subjects; soil, fibry peat, finely chopped sphagnum, a little loam and sand; propagation by stem cuttings. A strong plant should be selected, cutting below the first joint, and with a root, keeping close until established. Thorough drainage is essential to success, great care being required in watering, etc.

A. argenteus p'tus. See **Physurus pictus**.

— *argyrea*. Brazil. **Physurus?**

— *argyrea*. Java.

— *Boylei*. Olive-green with golden veins. India.

— *Bulle'ni*. Leaves coppery-red striped. Borneo. 1861.

— *chryso'grasus*. Leaves become coppery and green-veined. Java.

— *concinus*. Dark olive-green, veins coppery red. Assam.

— *Dawsoniana* and var. *p'tus*. See **Hæmeria discolor Dawsoniana**.

— *Dayi*. See **Dossinia marmorata Dayi**.

— *Dominii*. Dark olive-green, main ribs pale.

A hybrid between **Goodyera discolor** and **A. Friderici Augusti**.

— *Eldorado*. Dark green, veins lighter. Central America.

— *Friderici Augusti*. Dark green with broad orange stripe down the centre. Syn., **A. xanthophyllus**.

— *Heriotii*. Dark mahogany colour with golden veins. India. 1881.

— *hieroglyphicus*. Dark green with silver grey blotches. Assam.

— *intermedius*. Dark olive-green, veins gold.

— *javanicus*. Pink. Leaves olive-green, pinkish beneath. Java.

- A. Lansbe'rgia*. Dark green, central nerves lighter green, the more external reddish. Malaya. Ill. Hort. 1887, t. 1.
- *latimaculatus*. Dark green with silver markings. Borneo.
- *Lobbiana*. Flowers white with a pinkish lip. Java? Fl. Ser. t. 519.
- *Lo'wi*. A synonym of *Dossinia marmorata*. There is a variety *A. Lowii virescens* with leaves a brighter green.
- *Meine'rtii*. Sumatra. 1893. Syn., *Dossinia Meinertii*.
- *Nevi'leana*. Green with orange-yellow veins.
- *Ordia' nus*. Leaves deep green, with silvery veins. Java. 1869. Jenn. Orch. t. 43, f. 1.
- *Ortgie'sii*. See *Physurus Ortgiesii*.
- *pictus*. See *Physurus pictus*.
- *querceticola*. See *Physurus querceticolus*.
- *regalis*. Velvety-green with golden veins. Syn., *A. setaceus*. June. Java. 1836. B. M. t. 4123. The natives of Ceylon, where it grows in the hedge-rows, much admire this species and give it the regal name of "The King of the Woods;" and well it deserves the title; but yet the leaves are the only part that attract admiration. The flowers are not at all beautiful; the leaves, however are very handsome. The ground colour is of a dark velvety-green, tinged with a metallic lustre, curiously inlaid, as it were, with streaks of golden net-work. If examined with a moderate microscope, when the sun is shining, this golden net-work is really glorious, having the appearance of the richest rubies. But no description can do justice to the beauty of the leaves of this plant. The variety named *pictus*, or painted—brought home, we believe, by Mr. Gibson, from the Khasia Hills, India—has a broad stripe of yellow down the centre of each leaf, in addition to the golden net-work. It is equally beautiful with the original species, but, if anything, more difficult to cultivate. Messrs. Low and Co., of the Clapton Nurseries, have imported another variety, from Borneo, of a stronger growth, and on that account worth cultivating, though not quite so beautiful as the other two varieties.
- *albo-marginatus*. Leaves with white edges.
- *cordatus*. Leaves with broad gold marks.
- *grandifolius*. Light green with a network of golden veins.
- *inornatus*. $\frac{1}{2}$. Flowers white. Java. B. M. t. 5208.
- *pictus*. Leaves with central golden stripe. N. India.
- *Reinwa'rdtii*. Bronze with golden lines. Java.
- *Roxbu'rgii*. $\frac{1}{2}$. White. E. Indies.
- *Rucke'ri*. Leaves with six rows of pale spots. Borneo. 1861.
- *Schaele'ri*. Leaves silver-striped. Costa Rica. 1862. *Physurus?*
- *setaceus*. See *A. regalis*.
- *stridatus*. See *Zeuxine regia*.
- *Turne'ri*. Leaves bronzy, veined with yellow. 1865.
- *Veitchii*. Java? See *Macodes Petola*.
- *zebrinus*. Coppery-lined. India. 1863.

Anoiganthus. (From *anigo*, to expand, and *anthos*, flower. Nat. ord., *Amaryllidaceæ*.)

Greenhouse bulb. For treatment, see CYRTANTHUS.

- A. breviflorus*. 1. Bright yellow. Natal. 1888. Syn., *Cyrtanthus lutescens* of some gardens.

Anomathe'ca. (From *anomos*, singular, and *theca*, a capsule, or seed-pod. Nat. ord., *Iridaceæ*.)

Very neat, Ixia-like, dwarf, bulbous plants, which flower in the sheltered border all summer, in any light garden-soil; they require the protection of a frame in winter, or very warm south border in open air. Propagated from seeds and offsets; light, sandy loam and common soil; bulbs require, in most places, to be kept in a frame during winter. *A. cruenta*, especially, is well fitted for a flower-bed.

- A. cruenta*. 1. Crimson. July. E. Trop. Africa. 1830. B. R. t. 1369.

— *ju'ncea*. 1. Bright pink, with dark spot at base of the perianth. May. Cape of Good Hope. 1791. Syn., *Gladiolus polystachyus*, Andr. Rep. t. 66, G. *excisus*, Jacq. H. Schœn. t. 491. Free flowering, but rarely met with in gardens.

Anomochlo'a. (From *anomos*, lawless, and *chloa*, grass; alluding to its differing from other grasses in having four stamens instead of three, which is the usual number. Nat. ord., *Gramineæ*.)

Stove perennial grass, remarkable for the distinctly stalked leaves. Seeds, divisions. Rich loam.

- A. marantoides*. 1. Green. Brazil. 1862. B. M. t. 5331.

Ano'na. (From *menona*, its local name in the West Indies. Nat. ord., *Anonaceæ*.)

Stove evergreen trees and shrubs with fragrant leaves; cuttings of ripened wood, in strong heat, under a glass, in April; rich loam.

- A. amplexicaulis*. 12. Yellow, green. Mauritius. 1824.
- *asiatica*. 12. Yellow, green. Asia. 1816.
- *Cherimolia*. 18. Brown. August. Peru. 1739. Ill. Hort. 1885, p. 109, t. 563. Syn., *A. tripetala*. B. M. t. 2011.
- *cinerea*. 15. Yellow, green. W. Ind. 1818.
- *glabra*. 16. Brown. August. W. Ind. 1774.
- *laurifolia*. 15. Brown. W. Ind. 1773.
- *longifolia*. 20. Purplish. Guiana. 1820.
- *mexicana*. 12. Yellow, green. Mexico. 1823.
- *mucosa*. 12. Yellow, green. E. Ind. 1820.
- *muricata*. 10. Green, yellow. W. Ind. 1656. The Sour Sop.
- *obtusifolia*. 15. Yellow, green. W. Ind. 1810.
- *patudo'sa*. 4. Green. Guiana. 1830.
- *palustris*. 15. Yellow. S. Amer. 1788. B. M. t. 4226. The cork-wood, or Alligator Apple.
- *punctata*. 12. Yellow, green. Trinidad. 1818.
- *reticulata*. 20. Whitish-yellow, brown. Brazil 1690. B. M. tt. 2911-2. Custard Apple, or Bullock's Heart
- *rhizantha*. 15. Red. Brazil. 1882.
- *senegalensis*. 10. Yellow, green. Guinea. 1824.
- *squamosa*. 20. White, green. S. Amer. 1731. B. M. t. 3095. The Sweet Sop.

Anonymosbractea'ta. See *Zornia tetraphylla*.

Anopla'nthus. See *Phelipæa*.

Anoplophy'tum. See *Tillandsia*.

For *A. stramineum* and *A. vittatum* see *Schlumbergeria virescens*.

Ano'pterus. (From *ano*, upwards, and *pteron*, a wing; alluding to the wing at the top of the seed. Nat. ord., *Saxifragaceæ*.)

A greenhouse evergreen shrub, very ornamental; cuttings under a bell-glass, in heat; sandy loam and peat. Usually in a cold pit or greenhouse, but would probably prove hardy in the South and West of England on a wall, with slight winter protection.

A. glandulosus. 3. April. White tinged with rose. Tasmania. 1846. B. M. t. 4377.

Anre'dera. (Derivation doubtful. Nat. ord., *Chenopodiaceæ*.)

Greenhouse perennial climber.

A. scandens. White. Texas. 1839.

Ansellia. (In honour of *Mr. Ansell*, the botanical collector who accompanied the ill-fated Niger Expedition. Nat. ord., *Orchidaceæ*. Allied to *Aganisia*.)

Stove epiphytal orchids. Division of bulbs after flowering; turfy peat and broken potsherds. With plenty of moisture at root. During the resting season little or no water will be required, the plants being kept in a moist atmosphere.

A. africana. 3. Sepals and petals greenish-yellow with brownish spots; lip yellow. February. Fernando Po. 1844. B. M. t. 4965.

— *confusa*. Greenish-yellow, brown, purple marks on green side lobes of lip. West Tropical Africa. Lind. 2, t. 36. Syn., *A. africana*, B. R. 1846, t. 30.

— *congoensis*. Sepals and petals yellowish-green with brown markings; lip yellow, with white side lobes marked with purple. Congo. Lind. 2, t. 64.

— *gigantea*. Yellow, brown. Natal. 1847.

— *citri'na*. Lip orange-citron. Flowers destitute of spots.

— *lu'tea*. Light yellow. Natal.

— *nilotica*. More dwarf than *A. africana*, but flowers brighter. E. Tropical Africa. Syn., *A. africana*, var. *nilotica*.

Ant. See **Formica**.

Antenna'ria. (From *antennæ*, feelers; in reference to the downy heads of the seeds. Nat. ord., *Compositæ*.)

Dwarf, hardy perennials; division and seeds; common, light soil. In most places the Nepaul species require the protection of a cold pit in winter.

A. alpi'na. 1. Pink. June. Alpine. Europe. 1775.

— *carpa'tica*. 1. Pink. June. Carpathian Mountains. 1775.

— *contorta*. 2. White. July. Nepaul. 1821. B. R. t. 605.

— *dioi'ca*. 1. Pink. June. Britain. 1821. Syn., *Gnaphalium dioicum*. Eng. Bot. ed. 3, t. 747.

— *hyperbo'rea*. 1. Whitish. June. Isle of Skye. 1821. Eng. Bot. ed. 3, t. 748.

— *margarita'cea*. 2. White. July. England. 1821. Eng. Bot. ed. 3, t. 746.

— *plantaginifolia*. 1. White. July. Virginia. 1759. Syn., *A. plantaginea*.

— *tomentosa*. One-twelfth. Summer. Silvery-leaved. Syn., *A. candida*.

— *tripter'nis*. 1. White. August. Nepaul. 1823.

A'nthemis. Chamomile. (From

Anthemon, a flower; in reference to the great number of flowers produced. Nat. ord., *Compositæ*.)

With a few exceptions, they are hardy plants. Division of plant, and seeds; common soil. The single-flowering *A. nobilis* is superior to the double for medicinal properties, but is less frequently cultivated, owing to its producing a smaller bulk of flowers.

HERBACEOUS PERENNIALS.

A. alpi'na. 1. White. July. Austria. 1824.

— *Barrelieri*. 1. White. August. Italy. 1825.

— *Bieberste'ni*. Yellow. Gñ. t. 936.

— *Marschallia'na*. 1 to 2. Yellow. Caucasus. 1879.

— *chamomilla*. See *Matricaria chamomilla*.

— *coronopifolia*. See *Ormenis miata*.

— *fruticulosa*. 2. White. August. Caucasus. 1820.

— *globosa*. See *Chiliophyllum globosum*.

— *grandiflora*. See *Pyrethrum sinense*.

— *iberica*. 1. White. August. Iberia. 1820.

— *incrassata*. See *Anacyclus clavatus*.

— *Kitabe'llii*. 1. White. June. Central Europe. 1820. Syn., *A. carpatica*.

— *Marschallia'na*. 2. Yellow. July. Caucasus. 1816.

— *Rudolphia'na*. 1. Yellow. July. Caucasus. 1824.

— *melampodi'na*. 1. White. August. Egypt. 1819.

— *montana*. 1. White or purplish. July. Central Europe. 1759. Syn., *A. sazattis*.

— *partheniodes*. 2. White. July. China. 1819.

B. R. t. 527. Syn., *A. apiifolia*.

— *petraea*. 1. White. July. Italy. 1825.

— *pubescens*. See *Anacyclus tomentosus*.

— *tinctoria*. 2. Yellow. July. Britain.

— *discoidea*. 1. Yellow. June. Italy. 1800.

— *Triumfetti*. 1. Pale yellow. August. Switzerland. 1819.

— *tomentosa*. 1. White. July. Levant. 1795. Probably the same as *A. peregrina*.

ANNUALS.

A. alzon. 1. White. Summer. N. Greece.

— *altissima*. 4. White. July. South of Europe. 1731. Sibth. Fl. Gr. t. 881.

— *avrea*. 1. Yellow. August. Levant. 1570. Syn., *Anacyclus aureus*.

— *austr'aca*. 1. White. August. Austria. 1759.

— *buphthalmoides*. See *Rumfordia buphthalmoides*.

— *fulva*. See *Achillea*.

— *fusca*. 1. White. July. Portugal. 1805.

— *maritima*. 1. White. July. Mediterranean. 1800. Sibth. Fl. Gr. t. 882.

— *miata*. 1. White. August. France. 1731.

— *mucronulata*. Italy. 1836.

— *ruthenica*. 2. White. June. Taurida. 1823.

EVERGREENS.

A. nobilis (common chamomile). 1. White. August. Britain.

— *no're-ple'no*. 1. White. August. Britain.

— *punctata*. 1. White. August. Barbary. 1818. Biennial.

Anthe'phora. (From *anthos*, a flower, and *phoreo*, to bear. Nat. ord., *Gramineæ*.)

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. elegans. A potal. August. Jamaica. 1776.

— *villo'sa*. August. W. Ind. 1824.

Anthe'ricum. (From *anthos*, a flower, and *kerkos*, a hedge; in reference

to the tall flower stems. Nat. ord., *Liliaceæ*.)

Chiefly hardy bulbs. Rich, light soil, or a mixture of fibrous loam, leaf mould, and coarse sand. Division of roots, or by seeds, sown soon after ripening.

- A. albucos* des. See *Ornithogalum suaveolens*, Jacq. Ic. t. 431.
- *canaliculatum*. 1. White and green. May. Cape of Good Hope. 1774. B. M. t. 1124.
- *ru'fum*. 1. Copper. June. Cape of Good Hope.
- *cœrul'eum*. See *Pasithea cœrulea*.
- *cro'ceum*. 1. White. June. Cape of Good Hope. 1800.
- *echeandio'ides*. 1. Yellow with green keel. November. Mexico? 1833. B. M. t. 6809.
- *falc'atum*. 1. White. July. Cape of Good Hope. 1825. Syn., *A. vespertinum*. B. M. t. 1040.
- *filifol'ium*. See *Urginea filifolia*.
- *flexifol'ium*. 1. White. June. Cape of Good Hope. 1795.
- *floribundum*. 1. White. April. Cape of Good Hope. 1774.
- *fragrans*. See *Urginea fragrans*.
- *frutescens*. B. M. t. 816. See *Bulbine caulescens*.
- *Gerra'rdi*. $\frac{3}{4}$. White, green. Natal. 1876.
- *gracilimum*. 4. White. 1879.
- *graptophyllum*. $\frac{1}{2}$. White. Summer. Socotra. 1882.
- *hirsutum*. 1. White. July. Cape of Good Hope. 1820.
- *hispidum*. 1. White. July. Cape of Good Hope. 1820. Syn., *A. squameum*.
- *Hookeri*. $1\frac{1}{2}$. Yellow. New Zealand. 1848. Syn., *Chrysobactron Hookeri*. B. M. t. 4602.
- *Lilia'go*. $1\frac{1}{2}$. White. May. S. Europe. 1596. Syns., *Phalangium* and *Watsonia Liliago*. St. Bernard's Lily.
- *lilia'strum* and var. *majus*. See *Paradisialiastrum*.
- *longifol'ium*. 1. White. July. Cape of Good Hope. 1824. Jacq. Ic. t. 413.
- *Makoya'num*. 2 to 3. White leaves striped and margined with white. 1880. Gf. t. 1007.
- *pilosum*. See *Ornithogalum hispidum*.
- *plumosum*. See *Bottinæa thysanotoides*. B. M. t. 3084.
- *pomeridia'num*. See *Chlorogalum pomeridia-num*. B. R. t. 564.
- *ramosum*. White. June. S. Europe. 1670. Syn., *A. graminifolium*.
- *revolutum*. 2. White. October. Cape of Good Hope. 1731. B. M. t. 1044.
- *serotinum*. See *Lloydia*.
- *spirale*. See *Eriospermum spirale*.
- *sulphureum*. See *Ornithogalum pyrenaicum*, var. *flavescens*.
- *triflorum*. 1. White. September. Cape of Good Hope. 1782. Syn., *A. bipedunculatum*. Jacq. Ic. t. 410.
- *undulatum*. 1. White. June. Cape of Good Hope. 1825. Jacq. Icon. t. 411.
- *variegatum*. Leaves green, striped with white. S. Africa. 1875. Syns., *A. Wilbrahami* and *Phalangium argenteolineare*.
- *villosum*. 1. White. July. Cape of Good Hope. 1826.

Anthoc'rois. (From *anthos*, a flower, and *kirkis*, a ray. Nat. ord., *Scrophulariaceæ*.)

Handsome evergreen greenhouse shrubs. Cuttings of ripened wood in April, placed in sand under a glass in a mild bottom-heat. Sandy loam and peat, well drained.

A. albicans. 3. White. June. N. S. Wales. 1825.

— *floribunda*. 3. White. N. S. Wales.

— *ilicifolia*. 6. Yellowish-green. June. Swan River. 1843.

— *litorea*. 3. White. June. N. Holland. 1803. B. R. t. 212. Maund Bot. vol. 3, t. 102.

— *viscosa*. 6. White. May. N. Holland. 1822. B. M. t. 2961. Maund Bot. vol. 2, t. 59.

Anthoclei'sta. (From *anthos*, a flower, and *cleistos*, shut up. Nat. ord., *Loganiaceæ*.)

Cuttings in heat; peat and loam.

A. macrophylla. 20. White. Sierra Leone. 1820.

A'nthodon. (From *anthos*, a flower, and *odon*, a tooth. Nat. ord., *Celastrineæ*. Syn., *Salacia*.)

Stove evergreen shrubs. Cuttings of half-ripened wood, under a bell-glass; in hotbed; sandy loam and peat.

A. ellipticum. 12. Yellow, green. Rio Janeiro. 1813.

— *paniculatum*. 12. Yellow, green. Rio Janeiro. 1818.

Antholo'ma. (From *anthos*, a flower, and *loma*, a fringe. Nat. ord., *Tiliaceæ*.)

A stove evergreen tree; cuttings of ripe wood, under glass, in sand and in heat; light, rich loam.

A. montana. 20. White. May. New 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., *Iridaceæ*. Syns., *Cunonia*, *Petamenes*, *Anisanthus*.)

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; it will be safest, however, to lift and winter in dry place. When grown in pots an occasional dose of weak liquid manure will be found beneficial. Light, sandy soil; offsets. Seeds when ripened, or if procurable should be sown soon after being received in a cool house or frame.

A. æthiopica. 3. Scarlet and green. June.

Cape of Good Hope. 1759. Syns., *A. floribunda* and *A. præalta*. B. M. t. 561.

— *bicolor*. 2. Flowers nodding, upper half scarlet, lower yellowish-green. May.

Cape of Good Hope. Syn., *A. æthiopica*,

var. *minor*, B. R. t. 1159.

— *ringens*. Red, yellow. November. Cape

of Good Hope. Syn., *A. vittigera*. B.

M. t. 1172.

— *ca'fra*. 2. Scarlet. June. Cape of Good

Hope. 1828. Syn., *Anisanthus splendens*.

Swt. Fl. Gard., series 2, t. 84.

— *Cunonia*. 2. Scarlet, black. June. Cape

of Good Hope. 1756. Syn., *Anisanthus*

Cunonia. Red. Lil. t. 12.

— *fucata*. 2. Yellow, red. Cape of Good

Hope. 1807. Syn., *Tritonia fucata*.

B. R. 1838, t. 35.

— *montana*. 1. Brown. June. Cape of Good

Hope. 1759.

— *quadrangula'ris*. 2. Yellow, red. April.

Cape of Good Hope. 1760. Syns.,

Gladiolus abbreviatus, Andr. Rep. t. 166;

G. quadrangularis, B. M. t. 567.

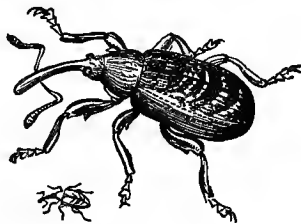
- A. spica'ta*. Flesh-colour. Cape of Good Hope. 1794. Andr. Rep. t. 56.
 — *tubulo'sa*. Crimson. Cape of Good Hope. 1796. Andr. Rep. t. 174.

Anthomyia. A genus of flies, the following species of which are injurious to plants. Descriptions of them will be found under the plants, which they attack.

- A. betæ*. The Beet Fly.
 — *brassicæ* and *radicum*. See *Cabbage Fly*.
 — *cepa'rum*. A synonym of *Phorbia cepetorum*, the Onion Fly.
 — *flora'ris*. The Radish Fly.
 — *lactu'cæ*. The Lettuce Fly.
 — *platu'ra*. The Shallot Fly.
 — *tubero'sa*, attacks the potato.

Anthono'mus 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., *Rubiaceæ*.) Amber Tree.

An ornamental greenhouse evergreen shrub; cuttings in sand, under a bell-glass; peat, loam, and sand.

A. æthio'picum. 2. Male brownish, female green. June. Cape of Good Hope. 1692.

Anthu'rium. (From *anthos*, a flower, and *oura*, a tail; referring to the spadix, or Arum flower-spike. Nat. ord., *Aroideæ*. Allied to *Pothos*.)

A. acan'the. 3. Green or violet. Spring. W. Indies. 1853.

— *acu'tum*. 1. Dark green. Brazil. 1887.

— *æra'nthe*. 3. Spathe green, spadix red-brown. Tropical America.

— *affi'ne*. Yellowish-green. 1855.

— *ama'num*. Spathe green. Venezuela. 1848.

— *andi'colum*. 1½. Spathe olive-green, spadix brownish-purple. Mexico. 1855. Syn., *A. cucullatum*.

— *Andrea'nium*. 1. Spathe scarlet, spadix yellowish, whitish. Columbia. 1876.

Extremely beautiful. Of this species there are numerous varieties and hybrids, e.g., *Allandor'sii*, *atro purpureum*, *flore albo*, *Grusonii*, *Kalbitzii*, *Ortge'sii*, and *Wittmackii*. See Gfl. t. 1293, and Rev. Hort. 1889, p. 169.

— *arabiofo'lium*, from New Caledonia, probably does not belong to this genus.

— *Appun'danum*. Spathe green, spadix violet. Venezuela. 1860.

— *Aubletii*. Green. Guiana. 1870.

— *Augustinum*. Tropical America. 1855.

— *Bakeri*. 1. Green. Berries scarlet. Spring. Costa Rica. 1872.

— *be'llum*. 3. Green, red-brown. Brazil. 1860.

— *Bin'dii*. 1. Olive-green. Autumn. Brazil.

— *Bouchéanum*. Spathe green, spadix violet. Venezuela. 1855.

— *brachygonâ'tum*. Mexico. 1860.

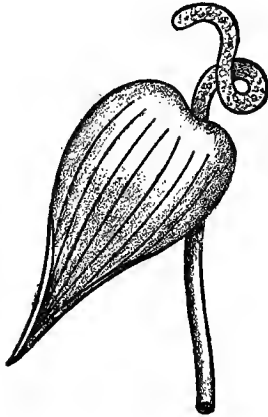
— *brevis'trum*. 2. Purplish. 1887.

— *Bro'wnii*. 3 to 5. Spathe green, reddish; spadix purplish. Columbia. 1877.

— *burforâ'tense*. Bright scarlet. Hybrid. 1889.

- A. ca'ndidum*. See *Spathiphyllum*.
 — *ca'rneum*. Red. Hybrid between *A. Andreamum* and *A. nymphæifolium*. 1884.
 — *Chamberlaini*. 4. Spathe pale dull puce outside, shining crimson within; spadix dull reddish purple. Venezuela? 1888.
 — *Chantiniæ* num. Hybrid between *A. Houletianum* and *A. Andreamum*.
 — *Chantrieri*. White. Hybrid between *A. nymphæifolium* and *A. subsignatum*.
 — *Chelseiensis*. Yellowish at apex, white at base. Hybrid between *A. Veitchii* and *A. Andreamum*.
 — *colocasiefolium*. 2. Spathe green, spadix red-brown. Tropical America. 1871.
 — *cordatum*. Whitish, green. Tropical America. 1854.
 — *cordifolium*. 2½. Green. W. Indies.
 — *coriaceum*. 3. Green. Brazil.
 — *crassifolium*. Spathe light green, spadix dull green. 1883.
 — *crasme'rium*. 2. Green.
 — *crue'ntum*. Blood red. Garden hybrid. 1886. Syn., *A. Andreamum*, var. *roseum*.
 — *crystallinum*. 2. Greenish. Leaves velvety green, with frosted veins. Columbia.
 — *cultrifolium*. 1½. Green. Brazil. 1860.
 — *cuspidatum*. 2 to 3. Reddish, purplish. Columbia.
 — *cymbiforme*. Spathe white, spadix salmon-pink. Columbia? 1889.
 — *Decha'rdi*. See *Spathiphyllum cannaefolium*.
 — *dentatum*. 3. Green. Garden hybrid. 1884.
 — *Desmetia* num. Garden hybrid. III. Hort. 1888, t. 52.
 — *Devansayæ* num. Garden hybrid.
 — *digitatum*. 1. Spathe green, spadix violet. Columbia.
 — *dominicæ* nse. 1. Dominica. 1860.
 — *egregium*. Venezuela. 1860.
 — *Eduar'di*. 2. Leaves green, tinted satin violet.
 — *e'legans*. Spathe green; spadix green or violet. Columbia. 1876.
 — *ellipticum*. Caraccas. 1853.
 — *emarginatum*. 1. Green, brownish. Tropical America.
 — *excellior*. Hybrid between *A. Veitchii* and *A. ornatum*. 1890.
 — *ferriere' nse*. Pale rose to deep red. 1868.
 — *fissum*. 2. Green. Columbia. 1868.
 — *flavidium*. 1. Violet-pink. Columbia. 1886.
 — *floribundum*. See *Spathiphyllum*.
 — *Frœbelii*. Deep carmine. Hybrid between *A. Andreamum* and *A. ornatum*. 1886.
 — *Galeottii*. Brazil. 1853.
 — *Gardichaudia* num. 2½. Green. S. Brazil.
 — *Geitneria* num. 2. Green. Tropical America. 1867.
 — *gladiifolium*. 1½. Spathe green, spadix red-brown. Brazil. 1860.
 — *glaucescens*. Green. Tropical America.
 — *Glazio'vi*. Purple. Brazil. 1880. B. M. t. 6833.
 — *gracile*. Green. Guiana. 1833.
 — *grandifolium*. Caraccas.
 — *Gusta'vi*. 1877. Gf. t. 1076.
 — *Hardya* num. Hybrid between *A. Andreamum* and *A. Eduar'di*. 1889.
 — *Harrisi*. Spathe greenish, spadix violet-brown. Brazil. 1826.
 — — *pulchrum*. Spathe whitish, spadix brownish-crimson; leaves variegated. Brazil. 1879.
 — *A. assimile*, *A. Beyrichia* num, *A. consanguineum*, *A. erythropodium*, *A. ianthopodium*, *A. intermedium*, *A. Jilokii*, *A. longifolium*, *A. rubricaulo*, *A. undulatum*, and *A. Urvilleanum*, are all of them but slight varieties of a long-leaved form of *A. Harrisi*, having a green or reddish-brown spathe, and a reddish-brown or violet spadix.
- A. He'ro*. A hybrid between *A. Veitchii* and *A. ornatum*.
 — *Hookeri*. 3. Spathe green, spadix green or violet. Tropical America. 1840. Syn., *A. Hugelii*.
 — *Houletia* num. Rose red. Hybrid between *A. magnificum* and *Andreamum*.
 — *Humboldtia* num. Spathe yellowish-green, spadix rosy-violet. Venezuela. 1854.
 — *inconspicuum*. 2. Spathe bright green, spadix brownish-violet. Brazil. 1885.
 — *intermedium*. Spathe pale red, spadix rosy. Hybrid between *A. hybridum* and *crystallinum*.
 — *isare' nse*. Garden hybrid. 1888.
 — *Kalbreyeri*. A climber. New Grenada. 1881.
 — *Kellermanni* of gardens is a hybrid. 1888.
 — *Lai'ngi*. Garden variety. 1888.
 — *lanceolata* num. Several varieties of *A. Harrisi* are cultivated under this name. The true *A. lanceolatum* is the same as *A. Widenowii*.
 — *Laucha* num. 2. Brownish-purple. 1857.
 — *Lawrenceæ* num. Garden hybrid. Rev. Hort. 1888, p. 12.
 — *leptostachyum*. Brazil. 1855.
 — *leuconeurum*. Green. Mexico. 1862.
 — *Lhotzkyæ* num. 2. Red-brown, blackish-violet. Brazil. 1860.
 — *Libonia* num. Green. S. America. 1868.
 — *Lindenia* num. 3. Spathe white, spadix white or purplish. Columbia. 1866. Fragrant. Syn., *A. Lindeni* and *A. Lindigi*.
 — *longifolium*. 1. Mexico. 1829.
 — *longipes*. Green. Bahia. 1854.
 — *longispadum*. 3. Guadeloupe. 1888.
 — *lutidum*. 4 to 5. Reddish-brown, purplish. Brazil.
 — *macrolobium*. Hybrid between *A. leuconeurum* and *pedato-radiatum*. 1833.
 — *macrophyllum*. 2½. Green, glaucous purple. W. Indies.
 — *macrospadix*. Guiana. 1862.
 — *Ma'lyi*. 1. Reddish-violet, blackish-violet. Brazil. 1860.
 — *margaritaceum*. 2½. Spathe white, spadix purplish. Columbia?
 — *Mazimiliani*. 3. Spathe green, spadix red-brown. Brazil. 1860.
 — *metalicum*. Green. 1860.
 — *Miquelia* num. 5. Green, purplish. Brazil. 1869. Syn., *A. Fendleri* of gardens.
 — *Moorea* num. Purplish-green. Hybrid between *A. crystallinum* and *A. subsignatum*.
 — *Mortfontanæ* nse. Spathe crimson, spadix white. Hybrid between *A. Andreamum* and *A. Veitchii*. 1885.
 — *nymphæifolium*. Spathe white, spadix purplish. Venezuela. 1854.
 — *ochranthum*. 2. Spathe greenish-yellow, spadix yellow. Costa Rica. 1853.
 — *Olfersia* num. 4. Green, purplish. Brazil.
 — *ornatum*. 2½. Spathe white, spadix purplish-tinted. Spring. Venezuela. 1869.
 — *Ottonia* num. Spathe green, spadix bluish-green, becoming purplish. Brazil. Syn. *A. Saundersii*.
 — *pa'rvum*. Purple-brown. Brazil. 1880.
 — *Patini*. See *Spathiphyllum*.
 — *pedatifidum*. Spadix purple. Brazil. 1866.
 — *pedato-radiatum*. 2. Green. Mexico. 1859.
 — *pentaphyllum*. 1859.
 — *podophyllum*. 3. Green. Mexico. 1859.
 — *polyotum*. Mexico. 1859.
 — *punctatum*. 1½. Greenish. Ecuador. 1886.
 — *purpureum*. 2. Purple. Brazil. 1887.
 — *radicans*. ½. Dull green. Brazil?
 — *recusatum*. Tropical America. 1860.
 — *reflexum*. Tropical America. 1867.
 — *regale*. Green, pale-veined. E. Peru. 1866.
 — *Roe'zii*. 3. White. Andes of Santa Martha.

- A. ro'seum*. Garden hybrid. 1888.
 — *Rothschildia num.* Garden hybrid. 1884.
 — *rube'scens*. Reddish. September. Brazil. 1828.
 — *rugosum*. 2. Spadix violet-brown. Caraccas. 1858.
 — *Sagittaria*. 1860.
 — *sagittatum*. Glaucoous-green. 1860.



- *Scherzeria num.* 1. Spathe and spadix scarlet. Costa Rica.
 — *albolinea tum.* Garden variety. 1888.
 — *andagave'nse*. Back of spathe crimson with white spots, front white, blotched red. Fl. Ser. t. 2454.
 — *bispatha ceum.* Spathes 2, opposite, red. Ill. Hort. 1890, t. 107.
 — *bruxelle'nse*. Ill. Hort. vol. 34, t. 18.
 — *giganteum*. Blood red. 1884.
 — *la cteum*. White. Ill. Hort. t. 607.
 — *maximum, album.* White. Seedling variety. Ill. Hort. 1890, t. 100.
 — *mutabilis*. Spathe white, gradually becoming scarlet. Seedling variety. 1883.
 — *nebulosum*. Spathes 2, white dusted with red.
 — *parisien'se*. Illust. Hort. vol. 34, t. 16.
 — *pygmaeum*. Spathe small, spadix stalked. 1880.
 — *Rothschildia num.* Spathe creamy, red-spotted; spadix creamy. 1880.
 — *Verveana num.* Spathe white, with red tip, 1884. Syn., *A. Verveanum*.
 — *Warouea num.* Spathe white, spotted red; spadix yellow. 1888. Ill. Hort. vol. 35, t. 51. Other forms of this species have been called *atrosanguineum*, *nigricans*, *rotundiflorum*, and *sanguineum*. See Wien. Gart. Zeit. 1889, p. 113.
 — *Willia'msii*. 1. Spathe white, spadix yellowish. Costa Rica. 1874. Syn., *A. Scherzerianum album*.
 — *Sellowia num.* Brazil. 1841.
 — *signatum*. 1½. Green. 1858.
 — *smilacifolium*. Brazil. 1855.
 — *spathiphyllum*. 1½. Spathe white, spadix yellowish. Tropical America. 1875.
 — *splen'didum*. White, tinged pink. Yellow. S. Amer. 1884.
 — *strictum*. 1. Bluish-green. Brazil. Syn., *A. Dombeyanum* of gardens.
 — *subsagittatum*. Venezuela. 1860.
 — *subsignatum*. 1½. Yellow. Central America. 1861.

- A. subulatum*. Spathe white; spadix purple red. Columbia.
 — *tetragonum*. Green. 1860.
 — *trilobum*. 1½. Spathe and spadix reddish-brown. 1877. Syn., *A. trifidum*.
 — *trine'rvium*. 2. Green. Brazil.
 — *triumphans*. Spathe green; spadix white. Brazil. 1852.
 — *undatum*. Purplish. Brazil. 1860.
 — *undulatum*. 1860.
 — *varia'bile*. Spathe green, spadix violet. Brazil. 1832.
 — *Veitchii*. 2½. White. Columbia. 1877. A fine foliage plant.
 — *acuminatum*. Columbia. 1885. Leaves gradually tapering to a point.
 — *Vellozia num.* 1. Spadix brownish-violet. Brazil. 1860.
 — *viola'ceum*. Tropical America. 1859.
 — *leucocarpum*. Mexico. 1859.
 — *viola'scens*. Spathe greenish, spadix dark violet. Venezuela. 1854.
 — *virgosum*. Spathe green, spadix reddish. Brazil. 1860.
 — *viride*. Brazil? 1855.
 — *Wagneria num.* Caraccas. 1853.
 — *Wallisii*. 2½. Green. Columbia.
 — *Walpue'vi*. 2. Venezuela. 1880.
 — *Warouea num.* 3. Green. Columbia. 1878.
 — *Warszewiczii*. 2½. Purplish. 1860.
 — *Wildenowii*. 1. W. Indies. 1860.

Anthyllis. (From *anthos*, a flower, and *ioulos*, down; literally, downy flower. Nat. Ord., *Leguminosae*; Tribe, *Loteae*. Allied to *Trefolium*.) Kidney Vetch.

Hardy herbaceous, or shrubby plants; propagation by seeds, division, and cuttings; the hardy perennial and annual species like a light, well-drained soil; the greenhouse varieties should have a little peat.

HARDY ANNUALS.

- A. cornicina*. 1. White. July. Spain. 1759.
 — *hamosa*. 1. Pale yellow. July. Barbary. 1821. Syn., *A. cornicina* of Poiret, not Linnæus.
 — *lotoides*. 1. Yellow. July. Spain. 1739.
 — *tetraphylla*. 1. White. July. South of Europe. 1640. B. M. t. 108.

GREENHOUSE EVERGREENS.

- A. aspalathis*. 1. Yellow. July. Cape of Good Hope. 1824.
 — *Barbata Jovis*. 4 to 8. Pale yellow. April. South of Europe. 1640.
 — *cytisoides*. 2. White. June. Spain. 1731.
 — *echinata*. 1. Purple. June. South of Europe.
 — *erina'cea*. 1. Purple. April. Spain. 1759. Syn., *Erinacea hispanica*.
 — *Hermanicea*. 2. Yellow. April. Corsica. 1739. B. M. t. 2576.
 — *heterophylla*. 1. Pink. July. South of Europe. 1768.
 — *tenuifolia*. 2. Yellow. July. Cape of Good Hope. 1818.

HERBACEOUS PERENNIALS.

- A. alpine*. 1. Yellow. August. Britain.
 — *eretica*. B. M. t. 1002. See *Ebenus eretica*.
 — *cuneata*. See *Lespedeza*.
 — *Gera'di*. 1. White. August. Provence. 1806.
 — *montana*. 1. Purple. June. Alps. 1759. Swt. Fl. Gard. t. 79.
 — *alba*. 1. White. July. South of Europe. 1818.
 — *onobrychoides*. 1. Yellow. July. Spain. 1817.
 — *polyccephala*. 1. Yellow. July. Barbary. 1829.
 — *vulneraria*. 1. Yellow. July. Britain.

- A. vulneraria albiflora*. 1. White. July. Britain. Syn., *A. rustica*.
 — *hirsutissima*. $\frac{1}{2}$. Red. July. Europe, 1816.
 — *polyphylla*. 1. Yellow. July. South of Europe. 1816.
 — *rubra*. 1. Red. July. Britain.
 — *rubriflora*. $\frac{1}{2}$. Red. July. South of Europe. 1816. Syn., *A. Dillenii*.
 — *Webbia* n. 1. Pale rose. Teneriffe. 1829. B. M. t. 3284.

Antiaris. (From *antja*, its Javanese name. Nat. ord., *Urticaceae*.)

Stove tree, cuttings of firm wood in sand under a bell-glass in bottom-heat; soil, sandy peat, flury loam.

- A. toxicaria*. 40. Green. Java. 1844. This is the Upas Tree of Java, the milky juice of which is used as a poison for arrows, and contains a most deadly substance, *antiarin*. It was formerly thought, from reports made by a Dutch surgeon at the end of the last century, that owing to the exhalation of a poisonous vapour, neither animal nor vegetable life could exist for several miles around the spot where it grew. It has since been proved that for this the tree was not responsible, but that it was due to carbonic acid and other volcanic gases escaping from fissures in the ground in the low valleys of Java. Severe effects have been produced on persons climbing the tree. The juice of an allied species, *A. innoxia* (Hooker's Companion to Bot. Mag. t. 17, *A. toxicaria*, by error), is harmless. The bark of *A. saccidora* is converted into sacks by the natives of Bombay.

Antigonon. (From *anti*, against, or opposite, and *gonia*, an angle. Nat. ord., *Polygonaceae*.)

Very ornamental stove climbers, comparable in beauty with *Bougainvillea*. Difficult to flower, and will probably do better planted out in a well-drained border, the stem being trained as near the glass as possible.

- A. amabile*. Bright rose.
 — *insigne*. Rose-pink. Columbia. 1876. Gard. Chron. vol. 7 (1877), p. 789.
 — *leptopus*. Crimson. Autumn. Mexico. 1868. B. M. t. 5816.
 — *albiflora*. White. 1888.

Antigramma. See *Scolopendrium*.

Antirrhinum. (From *anti*, like, and *rhin*, a snout, or nose; flowers like the snout of an animal. Nat. ord. *Scrophulariaceae*.)

Hardy herbaceous annual and perennial herbs grow freely from seed sown in spring; the best varieties by cuttings, inserted in sandy soil, under a hand-light. 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 very numerous, and many of them very handsome.

- A. alpinum*. See *Linaria alpina*.
 — *asarinum*. 1. White. June. S. France. 1699. B. M. t. 902. Half-hardy evergreen trailer.
 — *fruticans*. See *Nemesia*.
 — *glandulosum*. 2. Roan, yellow. September. California. 1834. B. R. t. 1893. Hardy annual

- A. hispanicum*. 1. Rose, yellow. Summer. Spain. 1878. Syns., *A. latifolium* and *A. rupestre*.
 — *lanigerum*. See *Linaria lanigera*.
 — *linaria*. See *Linaria vulgaris*.
 — *linarioides*. See *Linaria vulgaris*.
 — *macrocarpum*. See *Nemesia chamaedrifolia*.
 — *majus*. 2. Pink, with yellow palate. July. England. Syn., *A. montevidense*.
 — *bicolor*. 2. White. July. England.
 — *coccineus*. 2. Scarlet. July. England.
 — *floropleuro*. 2. Flesh. July. England.
 — *variegatum*. 2. Red. July. England.
 — *medium*. 2. Pink. August. Europe. 1821.
 — *molle*. 1. White, yellow. July. Spain. 1752. Half-hardy evergreen trailer.
 — *Nuttallianum*. 1 to 2. Purple. California. 1888. Gf. t. 1275, f. 3.
 — *ochroleucum*. 4. Pale yellow. July.
 — *odorum*. See *Linaria odora*.
 — *ornatum*. 1. Rose purple. June. Britain. Eng. Bot. ed. 3, t. 954. Hardy annual.
 — *grandiflorum*. 1. Red. July. Spain. 1810. Hardy annual. Syn., *A. calycinum*.
 — *sempervirens*. 2. Pink. August. Pyrenees. 1821. Syn., *A. meonanimum*.
 — *Siculum*. 1. White, or yellowish, rarely purple. July. Sicily. 1804. Syn., *A. Augustifolium*.
 — *spuria*. See *Linaria spuria*.
 — *strictum*. See *Linaria aparinoidea*.
 — *tortuosum*. $\frac{1}{2}$. Purple. June. Italy.

Antler Moth. See *Cerapteryx*.

Antrophyum. (From *Antro*, a cavern, and *phyc*, to grow; referring to its place of growth. Nat. ord., *Filices*.)

Stove Ferns. Division of the roots; sandy loam and peat in a shady situation.

- *cayennense*. Cayenne.
 — *coriaceum*. Himalayas.
 — *lanceolatum*. August. W. Indies. 1793.
 — *latifolium*. Island of Luzon.
 — *obtusum*. Island of Luzon. Very closely allied to *A. Boryanum*.
 — *reticulatum*. Distributed from the Himalayas and Malacca to Aneitum and Queensland.
 — *semicostatum*. Island of Luzon.

Antwerp Hollyhock. *Aitha'ca ficifolia*.

Anubias. (Nat. ord., *Aroideae*.)

- A. heterophylla*. 1. Leaves brightgreen, blotched dull yellow. Congo. 1889.

Acopla reniformis. See *Habenaria reniformis*.

Aotus. (From *A*, not, and *ous*, ear; the ear-like appendages to the calyx are wanting. Nat. ord., *Leguminosae*.)

Handsome small greenhouse evergreen shrubs. Seeds sown in heat. Cuttings of half-ripened wood in April, in sand, under a bell-glass. Sandy loam and peat, with a little charcoal.

- A. gracilis*. April. Anstralia. 1830
 — *gracillima*. 3. Yellow, crimson. May. W. Anstralia. 1844. B. M. t. 4146.
 — *incana*. 2. Yellow. June. Anstralia. 1824.
 — *lanigera*. Crimson, yellow. April. Moreton Bay. 1838.
 — *villosa*. 2. Yellow. April. Anstralia. 1790. B. M. t. 949.
 — *ericoides*. 2. Yellow. June. Anstralia. 1810. Pax. Mag. vol. 5, p. 51.
 — *ferruginea*. 2. Yellow. June. Anstralia. 1820.

A. villosa virgata. 2. Yellow. June. Australia. 1824.

Apargia. See Leo'ntodon.

Apei'ba. (The local name of one of the species in Brazil. Nat. ord., *Tiliaceæ*.)

Stove 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, or ringing the bark which induces to flowering.

A. a'spera. 30. Golden-yellow. May. Cayenne. 1792.

— *lævis*. 10. Green. Cayenne. 1817.

— *Petou'mo*. 40. Yellow. August. Guiana.

1817. Syn., *A. hispida*.

— *Tibou'rbou*. 7. Dark yellow. August. S. Amer. 1756. Syn., *A. hirsuta*.

Ape'ra arundina'cea. An elegant grass, whose panicle has slender drooping branches. 1882.

Aphela'ndra. (From *apheles*, simple, and *aner*, a male; the anthers being one-celled. Nat. ord., *Acanthaceæ*.)

Handsome stove evergreen shrubs. Allied to *Justicia*. Cuttings of small side-shoots, taken off in March or April, inserted in very sandy peat, under a bell-glass, and in a strong bottom-heat. Rough loam, peat, and sand well drained, and liberally supplied with water during summer, until flower-buds appear; kept dryer and cool during winter while resting. A full account of the culture of this genus is given in *The Cottage Gardener*, iv. 395.

A. acutifolia. Vermilion-red. October. Columbia. 1868.

— *amœna*. Leaves deep green, with silvery veins. Brazil. 1888.

— *atrovirens*. Yellow. Bahia. 1884. III. Hort. vol. 31, t. 527.

— *auranti'aca*. 3. Orange, scarlet. December. Mexico. 1844. B. R. 1845, t. 12.

— *Roezlii*. Orange-scarlet. Mexico. 1868. Syn., *A. Roezlii*.

— *Chamissoi'na*. Yellow or scarlet. November. S. Brazil. 1881. B. M. t. 6627. Syn., *A. punctata*.

— *chrysops*. 1887. Syn., *A. squarrosa Leopoldi*.

— *cristata*. 3. Scarlet. August. W. Ind. 1733. Syn., *Justicia pulcherrima*.

— *fasciata*. 1½. Scarlet. Autumn. New Grenada. 1874. III. Hort. 1874, t. 164.

— *fulgens*. 1½. Orange. Autumn. 1847.

— *glabra*. 1½. Yellow. Autumn. S. Amer. 1848.

— *Leopoldi*. Citron yellow. Brazil. 1854.

— *Libonis'na*. Crimson, yellow. Brazil. 1864. B. M. t. 5463.

— *Macedoi'na*. Leaves dark green, nerves lighter, violet purple beneath. Brazil. 1886. III. Hort. vol. 33, t. 583.

— *maculata*. 1. Yellow. Mexico. 1842. B. M. t. 4556.

— *Margarit'æ*. Orange. Leaves dark green above with nerves a lighter green; under surface rose. Belg. Hort. 1883, t. 19.

— *mediaurata*. Leaves green, with yellow central band. Brazil. 1871. Syn., *Graptophyllum mediauratum*.

— *nitens*. 3. Vermilion. May. Columbia. 1867. B. M. t. 5741.

— *Snitzel'ni*. Scarlet. E. Peru. 1876. III. Hort. vol. 23, t. 231.

— *ornata*. Yellow, purple. Brazil. 1864. Belg. Hort. 1865, t. 3.

— *Portei'na*. 2. Orange. Brazil. 1854. Fl. Ser. t. 984.

A. pu'mila. 1½. Scarlet. Summer. Brazil. 1878. B. M. t. 6467.

— *splendens*. Brazil. Gf. t. 1104.

— *punctata*. Yellow. S. America. 1881. III. Hort. n. e. t. 457.

— *squarrosa citri'na*. Yellow. Brazil. 1851. Fl. Ser. t. 809.

— *Leopoldi*. See *A. chrysops*.

— *sulphu'rea*. Yellow. Guayaquil. 1872. B. M. t. 5951.

— *tetragona*. 2. Autumn. 1846.

— *gran'dis*. September. Merida, Venezuela.

— *variegata*. 1½. Yellow. Brazil. B. M. 4899.

Aphele'xis. See Helichry'sum.

A'phis. The plant-louse, or green fly; called sometimes the *pu'cero'n*, 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, is proportioned to their number, and the time they are allowed to infest the subject of their attack; and the amount of that injury may be appreciated by the fact that the hop-louse (*Aphis humuli*) sometimes nearly destroys the entire crop. 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 aphid. 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. The most effectual of all applications for their destruction is tobacco smoke; and the best mode of applying it is to cover the bush with a sheet, and fill the space inclosed with the or smoke, to syringe them with tobacco water.

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, 1 lb. Scotch snuff, 1 lb. quicklime, $\frac{1}{2}$ lb. lamp-black, 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. persica is dark green, and is peculiar to the peach and nectarine.

A. pruni ravages the plum tribes, and is a very light green.

A. fabae, 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 aphid; syringing with soap-suds, on two or three following days, is also effectual.

A. pisi is green, and affects the pea.

A. loni-cera, 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. liquistri, 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 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.

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 aphid, and should be encouraged rather than removed. See **American Blight**.

The following directions are applicable to the destruction of every kind of aphid. 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. 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.

The green fly on plants out of doors, so situated that the smoke of tobacco cannot be so perfectly combined as to destroy them, require a different mode of attack, though the same herb furnishes us with a remedy against the foe, only it must be applied in a different form; that is, as tobacco-water. This can be had at any tobacco manufactory, or it may be made by steeping 4 oz. of tobacco in a gallon of hot water to which a little soft

soap has been added, in order to make it somewhat adhesive, the skin of the aphid being of such a nature as to allow the water to run off. Another receipt given by Miss Ormerod (consulting Entomologist to the Royal Agricultural Society) is:—soft soap 28 lbs., tobacco $\frac{1}{2}$ lb., water 100 gallons. Another mixture is made of 8 parts soft water and 1 part soft soap, boiled until the soap is dissolved, then add a little paraffin oil, and again boil until the whole is thoroughly mixed. Apply it to standard roses, by dipping the infested branches in it during a dry evening, and syringing them the next morning. For roses on pillars, or against walls, use the syringe filled with clear liquor, and applied gently all over the shrubs. Verbenas and Calceolarias in beds are often, during the summer months, much injured, and their beauty deteriorated, by these insects; also roses in beds suffer much from the same cause.

Aphyllanthes. (From *aphyllos*, leafless, and *anthos*, a flower; the flowers on rush-like branches. Nat. ord., *Liliaceæ*; Tribe, *Johnsoniææ*.)

A charming hardy herbaceous perennial. Division of the roots and seeds sown as soon as ripe in cold frame; sandy peat; requires a warm situation, dry during winter.

A. monspeliensis. Blue. June. South of France. 1791. B. M. t. 1132.

Api'cra. (From *apicros*, not bitter. Nat. ord., *Liliaceæ*; Tribe, *Aloineæ*.)

Warm greenhouse succulents, allied to *Aloes*. Increased by suckers and cuttings; soil, sandy loam. They are better kept rather dry during winter.

A. a'spera. 1. Grey. Juns. Cape of Good Hope. 1795.

— *ma'jor*. More robust.

— *asperula*. See *Haworthia asperula*.

— *diarina'ta*. Cape of Good Hope. 1820.

— *conge'sta*. 1. Whitish. 1843.

— *deltoid'ea*. 1. Whitish. May. S. Africa. 1865.

— *foliol'ea*. 1. Grey. July. Cape of Good Hope. 1795.

— *nigra*. See *Haworthia nigra*.

— *pentagon'a*. $\frac{1}{2}$. Grey. Juns. Cape of Good Hope. 1731. B. M. t. 1338. Syn.,

Haworthia pentagona.

— *bullul'a'ta*. $\frac{1}{2}$. Yellow. May. Cape of Good Hope. Syn., *Aloe bullulata*. Jacq. Fr. t. 109.

— *spir'e'lla*. $\frac{1}{2}$. Grey. June. Cape of Good Hope. 1790.

— *Willden'ovii*. $\frac{1}{2}$. Greenish. Syn., *A. spiralis*, Willdenow, not Linnaeus.

— *rigida*. See *Haworthia rigida*.

— *spir'e'lis*. 1. Grey. June. Cape of Good Hope. 1790. Syn., *A. imbricata*. B. M. t. 1455.

A'pios. (From *apion*, a pear; in reference to the form of the roots. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*.)

Hardy tuberos-rooted climbing herbaceous plant, allied to *Glycims*. Division of roots and seeds; rich garden-soil, useful for trellises, etc.

A. tubero'sa. 6. Brown, pink. August. Southern States of N. Amer. 1640. Syn., *Glycine apios*. B. M. t. 1198. Ground nut. — *frute'scens*. See *Wisteria frutescens*.

A'pium. (From *apon*, Celtic word for water; water plant. Nat. ord., *Umbellifereæ*; Tribe, *Ammineæ*.)

Allied to Parsley. Seeds, spring, and superior rich soil, for the culinary kinds; common soil for others. See **CELERY**.

A. chil'e'nse. 1. White. Chili. 1836.

— *grave'olens*. 4. White. July. Britain. Eng. Bot. t. 1210.

— *tri'color*. Leaves glossy green, with a silvery gray central stripe, and creamy white margins. 1882.

Aple'ctrum. (From *a*, not, and *plektron*, a spur; the flower spurless. Nat. ord., *Orchideæ*; Tribe, *Lipariææ*.)

A hardy terrestrial orchid, requiring a damp shady spot in peat and leaf-soil.

A. hyema'le. 1. Greenish-brown. N. Amer. 1827. The corms of this plant are called "Putty Roots" in the United States.

Apoc'ynum. (From *apo*, from, and *kyon*, a dog; poisonous to dogs. Nat. ord., *Apocynaceæ*.)

Hardy herbaceous perennials. Suckers, division when starting growth in spring, and seeds; common garden-soil.

A. androsæmifo'lium. 2. Pale red with darker stripes. July. N. Amer. 1688. B. M. t. 280.

— *cannabi'num*. 3. Yellow. August. N. Amer. 1699.

— *frute'scens*. See *Ichnocarpus*.

— *hypericifo'lium*. 2. White. June. N. Amer. 1758. Jacq. Vind. vol. 3, t. 66. Syn., *A. sibiricum*.

— *vene'tum*. 2. White. June. Adriatic Islands. 1690.

Aponoge'ton. (From *apon*, Celtic for water, and *geiton*, neighbour; indicating its place of growth. Nat. ord., *Naiadaceæ*.)

Ornamental aquatics, the most useful being *A. distachyon*, Caps pond weed or Winter Hawthorn, from the delicious fragrance of its flowers. Quite hardy, and may be cultivated in any shallow pond or tank, not less than 6 to 12 inches under water. Increases freely by offsets, and self-sown seeds. Also useful for small aquaria. Offsets, loam and peat.

A. angustifo'lium. 1. White. July. Cape of Good Hope. 1788. Half-hardy.

— *cri'spum*. 1. White. August. Ceylon. 1820. Stove.

— *dista'chyon*. 1. White. Juns. Cape of Good Hope. 1788. B. M. t. 1293.

— *roseum*. Rosy tinted. 1885.

— *junci'fo'lium*. White. 1847. Stove.

— *monosta'chyon*. 1. Pink. September. E. Ind. 1803. Stove.

— *spatha'ceum ju'nceum*. $\frac{1}{2}$. Pinkish. Autumn. S. Africa. 1879. Half-hardy. B. M. t. 6399.

Apo'rum. See **Dendro'bium**.

Apple. See **Py'rus ma'lus**.

Aptera'nthes. See **Boucero'sia**.

Aquarium 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 warm house; 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 handsomest form of house 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 $4\frac{1}{2}$ -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 heat the air of the house. The roof should be formed with wrought-iron bars, and should be sloped 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. The heat of the water should be never lower than 70°. Abundance of air will be necessary in the hot days of summer, and may be given by means of the side, as well as the roof lights. of This will cause the necessary circulation of air. 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 a square building with a circular tank in the centre, and the corners filled up with eight small tanks, in which are grown plants of a semi-aquatic habit. A walk runs round the central tanks, and is entered by a short one from each side of the square. A walk, too, is formed into each corner; and another 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 some idea of this truly noble aquarium. The old lily-house at Kew is of similar structure, and is now entirely devoted to the culture of Tropical Nymphæas; the smaller tanks in the corners being reserved for the *Nelumbium*, *Sagittaria montevidensis*, *Aroids*, etc., etc. The *Victoria Regia* tank in the new house in the T-range is four-cornered, a little longer than broad, the corners being devoted to such interesting plants as *Azolla*, *Trianæa*, *Salvinia*, *Pistia*, *Pontederia*, etc., etc.

The following are aquatic stove-plants :

Arum venosum.
Cyperus alternifolius.
 ——— *papyrus*.
Damasonium indicum.
Euryale ferox.
Limnocharis Humboldtii.
Menyanthes indica.
 ——— *ovata*.
Nelumbium speciosum.
Nymphæa cærulea.
 ——— *lotus*.
 ——— *pubescens*.
 ——— *rubra*.
 ——— *stellata*.
 ——— *versicolor*.
Philydrum lanuginosum.
Pistia stratiotes.
Pontederia crassipes.
 ——— *cordata*.
 ——— *dilatata*.
Sagittaria lancifolia.
 ——— *obtusifolia*.
Thalia dealbata.
Victoria regia.

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, they may be planted 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. *Nelumbium speciosum* requires a water heat of 84°.

Cyperus, *Papyrus*, *Nelumbium*, *Nymphæa*, *Limnocharis*, *Hydrocharis*, and *Sagittaria*, 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 there, covered with shrubs.

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 two to three 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 six inches thick. Proceed with mixing up and beating barrow-load after barrow-load till the bottom is entirely covered; when the whole should be closely and evenly trodden 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. As soon as it or a portion of it is ready, dab it with the spade 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, eight 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 two or three inches higher, level the natural soil down to it, and let this soil be two 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 about a foot thick. This is intended to encourage the water-plants to root in. 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, planting the species intended for it at the same time; lace them firmly down with some strong tar 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 for it, 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, etc. This can be easily accomplished by puddling the bottom with clay, as mentioned above, and building upon it sloping walls, using Portland cement for mortar. These, if well executed, are very ornamental, and of a neat appearance. If the tank walls are carried up three or four 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 to root in. The after-culture the aquatics will require is, if possible, to change the water frequently, and keep the surface clear from algæ, a very difficult process in hot summers, even with a good supply of water.

The following are some of the best hardy aquatics:—

Stratiotes aloides (water-soldier), native of Britain.

Aponogon distachyon, a very pretty floating aquatic, from the Cape of Good Hope; yet, although from a warm country, it is sufficiently hardy to survive our severest winter. It has very fragrant white flowers.

Botanus umbellatus (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, it may be planted near the edge. Cattle are very fond of its leaves.

Calla palustris, a native of North America, and

Richardia africana, both plants of great beauty. The latter is, on that

account, cultivated as a greenhouse and window plant, and is commonly called the "arum lily." This species is rather tender, but will survive our winter if planted in deep water.

Hottonia palustris, flesh-coloured flowers: a native of Britain.

Menyanthes trifoliata (Buckbean), with white flowers. This is another native species, growing in shallow waters. It is very pretty, and worth cultivation.

Nuphar lutea, a fine water-plant, native of Britain.

Nuphar advena, yellow and red: a fine species, from North America.

Nymphaea alba (White Water-Lily). It loves deep water, with plenty of room, and a muddy bottom to root in. It then will produce numbers of its beautiful, large white flowers.

N. alba, var. *rosea*, one of the finest of our hardy water plants, flowers like the type, but of a beautiful delicate rose (Sweden).

N. odorata and var. *rosea*, flowers large and fragrant (N. America).

N. tuberosa, nearly allied to the above, flowers white (N. America).

N. tuberosa, var. *flavescens* (Martacea), is one of the most desirable of this family. It is perfectly hardy, producing rich yellow flowers in profusion.

N. flava, and *N. pygmaea* are not hardy unless in the southern counties.

Typha latifolia. Though not so showy as some species, this plant is worth growing, producing its large flower-heads abundantly in shallow waters.

Besides these there are: *Alisma plantago* and *A. ranunculoides*; *Elisma natans*; *Lobelia Dortmanna*; *Myriophyllum spicatum* and *verticillatum*, *Polygonum amphibium*, *Sagittaria sagittifolia* and fl. pl., *Vallisneria spiralis*, *Brasenia peltata*, *Hydrocharis morsus-ranae*, *Pontederia caerulea* and *P. cordata*, *Orontium aquaticum*, *Ranunculus Lingua*, *Cladium mariscus*, *Sparganiums*, etc., etc.

Aquila'ria. (From *aquila*, an eagle, locally called Eagle-wood in Malacca. Nat. ord., *Thymelaeaceae*.)

The Eagle-wood is the inside of the trunk of *Aquila'ria malaccensis* and *A. Agallochum*—esteemed a cordial in Asia. Cuttings in heat in sand, and under a bell-glass. Sandy loam, with a little peat.

A. malaccensis. 6. Whitish-green. Malacca. 1823. A stove evergreen shrub. Syn., *A. ovata*.

Aquile'gia. Columbine. (From *aquila*, an eagle; in reference to the

form of the petals. Nat. ord., *Ranunculaceae*; Tribe, *Helleboreae*.)

A useful ornamental genus of hardy biennial or perennial herbaceous plants eminently fitted for choice mixed borders and beds. Seeds sown in pans, in cold frame in March or open air in April, occasionally bloom the first season but generally the second. Each species should, if possible, be kept a good distance apart, so liable are they to cross with each other. *A. alpina* is a rare and choice rock plant.

A. alpina. 1. Blue. May. Alps of Switzerland. 1731. Swt. Fl. Gard. t. 218.

Syn., *A. grandiflora*.
— *anemoneoides*. 1. Purple. July. Altaia. 1827.

— *arctica*. See *A. formosa*.

— *atropurpurea*. Dark purple. May. Siberia. B. R. t. 922. Syn., *A. daverica*.

— *Fischeriana*. 1. Purple. June. Siberia. 1827.

— *Bertoloni*. 1. Blue violet. June. Syn., *A. Reuteri*.

— *bicolor*. See *A. sibirica*.

— *brachyeras*. 3. May. North of Europe. 1838.

— *canadensis*. 2. Scarlet. June. N. America. 1640. B. M. t. 246.

— *aurca*. Greenish-yellow. California. 1872. Syn., *A. aurea*.

— *lutea*. 1. Pale yellow. May. N. America. 1835.

— *chrysantha*. 2 to 4. Yellow. California. 1873. Syn., *A. leptoceras chrysantha*.

Gf. t. 895. B. M. t. 6073.

— *flavescens*. Same as *A. canadensis aurea*.

— *caerulea*. White, blue. Rocky Mountains. 1864. Spurs very long. Syn., *A. leptoceras* and *A. macrantha*. Flor. Mag. t. 254.

— *caeruleo-chrysantha*. Garden hybrid. 1899.

— *hybrida*. Blue, white. Of garden origin.

— *stabella*. Garden variety. Rev. Hort. 1887, p. 548, f. 110.

— *na'na alba*. Dwarf, white. Garden variety.

— *formosa*. Yellow. Spurs red. July. Rocky Mountains and California. Syn., *A. arctica* and *eximia*. B. M. t. 6552 should be *A. Hookeri*.

— *fragrans*. 3. Yellow striped. May. Himalayas. 1839. Maund Bot. vol. 4, t. 181.

— *Garnieriana*. See *A. sibirica*.

— *glandulosa*. 2. Lilac. June. Siberia. 1822. Maund Bot. t. 219.

— *concolor*. 2. Violet. July. Altaia. 1822.

— *atrascol*. Bluish-white. June. Siberia. 1789.

— *juvunda*. 1. Blue. June. Siberia. 1844. B. R. 1847, t. 19.

— *glauca*. 2. White tinted with pink. June. Himalayas. 1839. B. R. 1840, t. 46.

— *grandiflora*. See *A. alpina*.

— *Hookeri* is the correct name for the plant figured in B. M. t. 6552 as *A. formosa*.

— *hybrida*. 2. Purple. Siberia. B. M. t. 1221.

— *juvunda*. B. R. 1847, t. 19. See *A. glandulosa*, var. *juvunda*.

— *kanavie'nsis*. 1. White, blue. June. Himalayas. B. M. 4693.

— *leptoceras*. See *A. caerulea*. B. M. t. 4407.

— *longissima*. Yellow, straw, or reddish. Texas and Mexico. 1888.

— *macrantha*. Fl. Ser. t. 531. See *A. caerulea*.

— *ni'gricans*. 1. Purple. Transylvania. Belg. Hort. vol. 4, t. 1.

— *olympica*. 1. Mauve-blue, White. 1880.

— *oxysepala*. Siberia. 1890.

— *parviflora*. 1. Purple. June. Siberia. 1819.

— *pubiflora*. Pale purple. June. India. 1839.

- A. pyrenæica*. 1. Blue. July. Pyrenees. 1818. Flor. Mag. 1867, p. 322.
 — *Reuteri*. See *A. Bertolini*.
 — *sibirica*. 2. Bright lilac, petals sometimes white. Siberia. 1806. Swt. Fl. Gard. ser. 2, t. 90. Syns., *A. bicolor*, *A. Garnieriana* and *A. speciosa*.
 — *Stinne'ri*. $\frac{1}{2}$. Red, green. May. Guatemala. 1841. B. M. t. 3919.
 — *speciosa*. See *A. sibirica*.
 — *spectabilis*. Violet. Siberia. 1804.
 — *Staudtii*. Garden hybrid. 1888.
 — *thaliotrifolia*. 2. Blue. Summer. Tyrol. 1879. Gl. t. 961, f. 1.
 — *viridiflora*. 2. Green, yellow. June. Siberia. 1780.
 — *viscosa*. 2. Purple. June. Montpellier. 1752. Belg. Hort. vol. 4, t. 1.
 — *vulgaris*. 2. Variously coloured. June. Britain. Eng. Bot. ed. 3, t. 46.
 — *alba*. Pure white.
 — *atra*'ta. Dark violet. Germany. 1890.
 — *corniculata*. Blue, white. June. Europe.
 — *degener*. 2. Blue, white. June. Europe.
 — *elegans*. 1. Purple. June. Europe.
 — *hybrida*. Lilac purple, white.
 — *inversa*. 2. Blue, white. June. Europe.
 — *stellata*. 2. Blue, white. June. Europe.
 — *Vermeed'na*. Leaves variegated.
 — *Wittmannia'na*. Lilac purple, white.

A'rabis. Wall-*cross*, Rock-*cross*. (Derivation doubtful. Nat. ord., *Cruciferae*; Tribe, *Arabadeæ*.)

Pretty dwarf rock plants; division; seeds in March or August in pans in cold frame or open air; cuttings under hand-lights; common soil. Hardy perennial trailers, except where otherwise specified.

- A. albidata*. 1. White. January to May. Caucasus. 1798. Syn., *A. caucasicca*. B. C. t. 1459.
 — *variegata*. $\frac{3}{4}$. White. February. Gardens.
 — *alpestris*. 1. White. July. Switzerland. 1819. Hardy biennial.
 — *alpina*. 1. White. March to May. Switzerland. 1596. B. M. t. 226.
 — *Clusia'na*. 1. White. May. Pyrenees. 1596.
 — *na'na*. 1. White. May. Switzerland. 1819.
 — *ambigua*. 1. White. July. Siberia. 1824. Hardy biennial.
 — *arenosa*. $\frac{3}{4}$. Rose or purplish. April to July. France. 1866.
 — *bellidifolia*. 1. White, yellow. June. Switzerland. 1773.
 — *blepharophylla*. Rosy-purple. Spring. California. 1874. Will flower in January in a cool frame, where it seems to do better than in the open border. B. M. t. 6087.
 — *cærulea*. 1. Pale blue. June. Switzerland. 1793.
 — *ciliata*. 1. White. June. Ireland. Hardy biennial. Eng. Bot. ed. 3, t. 117.
 — *collina*. White or pale purple. Naples. B. M. t. 3021.
 — *crispata*. 1. White. May. Carniola. 1818.
 — *curtisii'liqua*. 1. White. June. North of Europe. 1825. Hardy biennial.
 — *dasyca'rypa*. 1. White. June. Podolia. 1827.
 — *flexuosa*. Naples. 1832.
 — *lasioloba*. 2. White. June. Mexico. 1820. Hardy biennial.
 — *lilacina*. 1. Lilac. August. Europe. 1836.
 — *longifolia*. 1. White. June. Persia. 1820.
 — *hucida*. $\frac{1}{2}$. White. June. Hungary. 1790.
 — *variegata*. 1. White. June. Gardens.
 — *mo'lis*. 2. White. May to July. Caucasus. 1817.

- A. nutans*. 1. White. May. Switzerland. 1658. B. M. 2219.
 — *ovirivensis*. 1. Pale red. June. Carinthia. 1824. Jacq. Ic. t. 125.
 — *pendula*. White. May to June. Siberia. Jacq. Vind. vol. 3, t. 34.
 — *petraea*. $\frac{3}{4}$. White. June. Austria. 1800.
 — *hasulata*. 1. Purple. June. Britain. Syn., *Cardamine hastulata*.
 — *hispida*. 1. White. June. Scotland.
 — *præcox*. $\frac{3}{4}$. White. April to June. Hungary.
 — *variegata*. 1. White. June. Gardens.
 — *procurrens*. $\frac{3}{4}$. White. June. Hungary. 1818.
 — *variegata*. White. Handsome rock-trailer.
 — *py'mila*. 1. White. June. Austria. 1816. Jacq. Flora Austr. t. 281. Syns., *A. bellidiflora*, Crantz, not Jacquin, and *A. ciliaris*.
 — *retrofracta*. Blush. June. N. Amer. 1827.
 — *rosea*. 1. Rose. May to July. Calabria. 1832. B. M. t. 3246.
 — *Schivereckia'na*. 1. White. June. Austria. 1826.
 — *stellata*. 1. White. June. Italy. 1817.
 — *stenoptala*. 1. White. June. 1818. Hardy biennial.
 — *stolonifera*. 1. White. June. Carniola. 1818.
 — *striata*. Cream. May. England. Eng. Bot. ed. 3, t. 114.
 — *Todaroi*'s. May. 1881.
 — *toxophylla*. 1. White. July. Volga. 1823. Hardy biennial.
 — *undulata*. 1. White. June. South of Europe. 1810. B. C. t. 1710.
 — *verna*. 1. Purple. May. S. Europe. 1710. Hardy annual.

A'rachis. Earth-nut, or Monkey-nut. (From *a*, not, and *rachis*, a branch; Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*.)

Economic stove annual. Seeds, sandy loam.

- A. hypogæa*. 1. Procumbent. Yellow. May. W. Ind. and W. Africa. 1812.

Ara'lia. (Meaning unknown. Nat. ord., *Araliaceæ*.)

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. aculeata*. White. Nepaul. 1820.
 — *arbo'rea*. 15. Green. Jamaica. 1820.
 — *armata*. See *Panax*.
 — *capitata*. 12. Green. W. Ind.
 — *Chabrie'rii*. See *Eleoedendron orientale*.
 — *chinensis*. 5. White. 1838. Syn., *A. canescens*.
 — *coccinea*. See *Leea*.
 — *cochlearia*. Leaves light green, stem and petiole marbled. S. Sea Islands. 1882.
 — *concinna*. New Caledonia. 1879. Syns., *A. spectabilis*, and *Delabra speciosa*.
 — *crassifolia*. 10. Green. New Zealand. 1846.
 — *pi'cta*. See *Panax longissimum*.
 — *Delana'na*. See *Panax fruticosum*, var. *Delanana*.
 — *digita'ta*. See *Hectapleurum venulosum*.
 — *Du'ncani*. Mauritius.
 — *e'dulis*. 5. Green. Japan. 1843.
 — *elegantissima*. Polynesia. 1873.
 — *exco'lea*. See *Leea coccinea*.
 — *ferruginea*. 40. White. Trinidad. 1826.
 — *ficifolia*. Leaves green, with purplish midribs. Polynesia. 1876.
 — *fra'grans*. White. Nepaul. 1818.
 — *ge'nana*. New Caledonia. 1875. Ill. Hort. vol. 30, t. 477.
 — *Gheisbre'ghtii*. See *Monopanax*.
 — *glomerata*. See *Brassatiopsis speciosa*.

- A. gracilima*. See *A. Veitchii gracillima*.
 — *granatensis*. Columbia. 1874.
 — *Guilfoylei*. Polynesia. 1876.
 — *hi'pida*. 8. White. July. N. Amer. 1799. Hardy deciduous. Syn., *A. Muhlenbergia* na.
 — *japonica*. See *Fatsia*.
 — *kerchovana*. S. Sea Islands. 1883.
 — *leptophylla*. 1862.
 — *longipes*. 1883.
 — *macrophylla*. 6. White. Norfolk Island. 1831. Greenhouse evergreen.
 — *maculata*. Leaves green, petioles blackish purple, dotted with green. Polynesia.
 — *Maximowiczii*. Japan. 1874. Syn., *Acanthopanax rictinifolium*.
 — *micans*. 40. White. Trinidad. 1846.
 — *monstrata*. Leaflets white-margined, grey blotched. Polynesia. 1880.
 — *no'bilis*. 1882.
 — *Osyana*. Polynesia. 1870.
 — *palmetta*. 10. Moluccas.
 — *papyrifera*. See *Fatsia*.
 — *peltata*. Tropical America. 1869.
 — *pentaphylla*. 20. White. Japan. 1810. Greenhouse evergreen. Syn., *Panax spinosa*.
 — — *variegata*. Leaves margined with cream-colour. Japan. 1874.
 — *pubescens*. 6. White. W. Ind. 1818.
 — *quercifolia*. New Britain. 1880.
 — *quinquefolia*. Garden seedling.
 — *racemosa*. 4. White. July. N. Amer. 1658. Hardy herbaceous.
 — *reginae*. New Caledonia. 1879.
 — *reticulata*. Leaves dark green with lighter veins.
 — *rotunda*. Polynesia. 1882.
 — *sambucifolia*. 5. White. August. N. Holland. 1823. Greenhouse evergreen.
 — *Scheffleri*. New Zealand. Greenhouse species.
 — *sciadophyllum*. See *Sciadophyllum Brownii*.
 — *Shepherdii*. Green. New Zealand. 1842.
 — *spectabilis*. See *A. concinna*.
 — *spinosa*. 8. White. Virginia. 1688. Hardy deciduous.
 — *spinulosa*. Dark green, margined with reddish crimson spines. 1881.
 — *ternata*. New Britain. 1879.
 — *Thibautii*. See *Oreopanax*.
 — *trifolia*. See *Pseudopanax Lessoni*.
 — *umbraeulifera*. 40. White. E. Ind. 1818.
 — *Veitchii*. Leaves brownish. New Caledonia. 1867.
 — — *gracilima*. Leaves with white midribs. Polynesia. 1876. Syn., *A. gracillima*.

Araucaria. (From *Araucanos*, the name of the people in whose district *Araucaria imbricata* grows in Chili. Nat. ord., *Coniferae*.)

A noble genus of chiefly cool conservatory or greenhouse evergreen trees. Seeds of *A. imbricata* are wholesome when roasted. Seeds when procurable; cuttings of the leading shoots under a bell-glass, in a cool place, but shaded. Good, friable loam. *A. imbricata* wants no protection. *A. brasiliensis* is tender. *A. Cunninghamii* will live in sheltered places near the sea. *A. excelsa* ornamental in a conservatory.

- A. Balaensis*. 130 to 160. New Caledonia. 1875. Ill. Hort. new ser. t. 197.
 — *Bidwellii*. Bunya-Bunya Pine. 150. Moreton Bay.
 — *brasiliensis*. 70 to 100. Brazil. 1819. Fl. Ser. t. 2262.
 — — *gracilis*.
 — — *Ridolfiana*.
 — *Cookii*. 200. New Caledonia. 1851. B. M. t. 4635. Syn., *A. columnaris*.

- A. Cunninghamii*. 100. Moreton Bay. Syn., *Attingia Cunninghamii*. Cunningham's or Moreton Bay pine.
 — — *glauca*.
 — — *longifolia*.
 — *elegans*. New Caledonia. 1866.
 — *excelsa*. 120. Norfolk Island. Fl. Ser. t. 2304-5. Syn., *Attingia excelsa*. Norfolk-Island pine.
 — — *glauca*. Leaves silvery; glaucous.
 — — *robusta*.
 — *Goldieana*. New Caledonia. Flor. and Pom. 1877, p. 89.
 — *imbricata*. 50 to 100. Chili. 1796. Fl. Ser. t. 1577-1580. Monkey Puzzle, or Chili pine.
 — — *variegata*.
 — *Muellerae*. 50. New Caledonia. 1866. Ill. Hort. vol. 29, t. 449.
 — *Ruilei*. 50. Papan Archipelago. Syn., *Eutaeta Ruilei*. Ill. Hort. new ser. t. 204.
 — — *elegans*.

Araucaria. (Native name. Nat. ord., *Asclepiadaceae*.)

Stove or warm greenhouse evergreen climbers. Cuttings of firm stubby side shoots in summer in sandy soil, under a glass in a gentle heat. Seed sown in a hotbed in spring. Soil, sandy loam and fibry peat, with good drainage. *A. sericeifera* is a good greenhouse climber for pillars or rafters, and when planted out in light rich soil flowers and fruits freely. A variety called *atibicans undulatus*, from South America, is said to have lived for several years against a wall in the Fulham nursery.

- A. angustifolia*. Green, white, purple. Uruguay. 1865.
 — *graveolens*. White. October. Brazil. Syns., *Physianthus auricomus*, B. M. t. 3891, *Schubertia graveolens*, B. R. 1846, t. 21. *Schubertia grandiflora* of gardens. The flowers turn yellowish in decaying, and some have regarded this as a yellow-flowered variety.
 — *sericeifera*. White; pale rose in bud. August. Buenos Ayres. 1830. Syns., *Physianthus abens*, B. M. t. 3201; B. R. t. 1759.

Arboretum is a collection of trees and shrubs capable of enduring exposure to our climate, and arranged either for pleasure or instruction. An arboretum should be arranged with a view to picturesque beauty, and not according to a system, as in Botanic Gardens.

Arbour is a seat surrounded by lattice work, and 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, etc., they are described as French or Italian arbours.

Arbor vitæ. *Thuja*.

Arbutus. Strawberry-tree. (From *arboise*, a Celtic word for rough fruit. Nat. ord., *Ericaceae*; Tribe, *Arbutaeae*.)

Seeds, budding, inarching, the first being generally adopted. The finer sorts may also be budded, inarched, or grafted upon the common *A. Unedo*. Common soil for the hardy species; sandy loam and peat for those which require the protection of a greenhouse in winter. All these are hardy evergreens which are not otherwise described.

- A. alpina*. See *Arctostaphylos alpina*.
 — *Andra'chne*. 10. White. April. Levant. 1724. B. R. t. 113.
 — *serratifolia*. 6. Yellowish. Greenhouse evergreen. B. C. t. 580. Syn., *A. serratifolia*.
 — *canarie'nsis*. 8. Whitish-green. June. Canaries. 1796. B. M. t. 1577. Greenhouse evergreen. Syn., *A. longifolia*, Andr. Rep. t. 664.
 — *densiflora*. 20. White. Mexico. 1826. Greenhouse evergreen.
 — *hybrida*. 10. White. September. Garden hybrid. About 1800. Syn., *A. andrachnoides*. B. R. t. 619.
 — *laurifolia*. 20. White. Mexico. 1825. Greenhouse evergreen.
 — *Menzie'sii*. White. N. Amer. September. 1827. Syn., *A. procera*.
 — *Mille'ri*. 10. White. September. Hybrid. 1825.
 — *molli's*. 6. Rose. June. Mexico. Greenhouse shrub. B. M. t. 4595.
 — *mucronata*. See *Pernettya mucronata*.
 — *pilo'sa*. See *Pernettya pilosa*.
 — *phyllyreafolia*. See *Pernettya phyllyreafolia*.
 — *pu'mila*. 4. White. Magellan. 1825. Greenhouse evergreen.
 — *speciosa*. Mexico. 1837.
 — *tomentosa*. See *Arctostaphylos tomentosa*.
 — *nu'da*.
 — *U'nedo*. 10. White. October. Ireland. The Strawberry Tree. Eng. Bot. ed. 3, t. 882.
 — *ori'spa*. 8. White. October.
 — *Croc'mit*. Red.
 — *integrifolia*. 6. Pink. October.
 — *ple'na*. 5. White. October.
 — *salicifolia*. 6. White. October.
 — *schizopetala*. 7. White. October.
 — *ru'bra*. 10. Pink. October.
 — *uva-u'rsi*. See *Arctostaphylos uva-u'rsi*.
 — *va'rians*. Paxt. Fl. Gard. II., p. 118, f. 197.
 — *xalapensis*. 6 to 9. Reddish-white. April. Mexico. Journ. Hort. Soc. vol. 5, p. 193.

Arcade is a walk arched over with trellis-work, and this covered with climbers.

Archangel, or White Dead Nettle. *Lamium al'bum*. Yellow Archangel, *Lamium Galeo'bdolon* or *Galeobdolon lu'teum*.

Archangelica. (From *arche*, chief, and *angelica*, from its supposed virtues. Nat. ord., *Umbelliferae*; Tribe, *Seselinæ*.)

A. officinalis. 4. Green. July. England. Eng. Bot. ed. 3, t. 608.

This is the same as *Angelica archangelica*. There are two other species, but worthless. Seeds in April; common soil.

Arctostaphylos. (From *arktos*, a bear, and *staphyle*, a berry. Bears eat the fruit of some species. Nat. ord., *Ericaceæ*; Tribe, *Arbutææ*.)

Handsome hardy or half-hardy evergreen, trailing or shrubby plants, requiring treatment similar to *Arbutus*.



- A. alpina*. 1. Flesh. April. Scotland. Deciduous trailer. Syn., *Arbutus alpina*. Black Bearberry.
 — *californica*. A variety of *A. uva-u'rsi*.
 — *cordifolia*. See *A. tomentosa*.
 — *discolor*. Calyx red; corolla white. Mexico. 1837. B. M. t. 3904, *A. nitida*, by error, half-hardy.
 — *glau'ca*. 8 to 24. Fruit red. California.
 — *ni'tida*. 4. White. May. Mexico. 1836. Half-hardy evergreen shrub. B. R. 1845, t. 32.
 — *pu'ngens*. 1. White. February. Mexico. 1839. Half-hardy evergreen shrub. B. M. t. 3927.
 — *tomentosa*. White. December. N. Amer. 1826. B. R. t. 1791. Evergreen shrub. Syns., *A. cordifolia* and *Arbutus tomentosa*. B. M. t. 3320.
 — *hi'spida*. White. December. Mouth of the Columbia River. B. M. t. 3320.
 — *nu'da*. A variety with glabrous branches.
 — *uva-u'rsi*. 1. White. April. Britain. Evergreen trailer. Syn., *Arbutus uva-u'rsi*. Eng. Bot. ed. 3, t. 881.

Arctotheca. (From *arktos*, a bear, and *theca*, a capsule; seed-pod, or capsule, as rough as a bear. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*. Allied to *Arctotis*.)

Greenhouse herbaceous perennials. Division and seeds; peat and loam. *A. repens* does well in the open border in summer.

- *hi'rtia*. 1. Yellow. July. Cape of Good Hope. 1820.
 — *re'pens*. 1. Yellow. July. Cape of Good Hope. 1793. Syn., *Arctotis repens*, Jacq. H. Schoenb. t. 306.
 — *grandiflora*. 1½. Yellow. July. Cape of Good Hope. 1833. Syn., *A. grandiflora*.

Arctotis. (From *arktos*, a bear, and *ous*, an ear. Shaggy fruit. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*.)

A very ornamental genus of half-hardy perennial and biennial plants. Most of them may be grown effectively in the open border during the summer and autumn months. Easily propagated by cuttings in summer in sand under a bell-glass, in a shady, cool place, and also by seeds in spring. All greenhouse perennials except where otherwise specified.

- A. acaulis*. 1. Yellow, red. May. Cape of Good Hope. 1759. Syns., *A. scapigera*,

- A. tricolor*, *A. undulata* (B. R. t. 122), and *A. speciosa* (B. M. t. 2182).
- A. arbore'scens*. 2. White, pink. July. Cape of Good Hope. 1818.
- *argentea*. 1. Orange. August. Cape of Good Hope. 1774. Biennial.
- *aspera*. 3. Yellow. August. Cape of Good Hope. 1710.
- — *angustifolia*. 2. Purple. August. Cape of Good Hope. 1739. Jacq. H. Schœn. t. 168. Syns., *A. angustifolia* and *A. decumbens*.
- — *arbore'scens*.
- — *cichor'cea*. 1. White, red. July. Cape of Good Hope. 1812. Syn., *A. bicolor*.
- — — *incisa*. 1. Yellow. July. Cape of Good Hope. 1795. Jacq. H. Schœn. t. 169. Syn., *A. auriculata*.
- — — *scabra*. 2. White, orange. June. Cape of Good Hope. 1812. Syn., *A. maculata*.
- — — *undulata*. See *A. aureola*.
- *aurea* ta. 1. Orange. August. Cape of Good Hope. 1710. Syns., *A. aspera*, var. *undulata*, B. M. t. 6835, and *A. cuprea*.
- *bellidiflora*. 2. White, red. May. Cape of Good Hope. 1816. Jacq. H. Schœn. t. 380. Syn., *A. paniculata*.
- *ca'ndida*. 1. Yellow, purple. July. Cape of Good Hope. 1794. Greenhouse. Jacq. H. Schœn. t. 170. Syn., *A. glaucophylla*.
- *cinera'ria*. 2. Yellow, orange. July. Cape of Good Hope. 1824. Jacq. H. Schœn. t. 174.
- *decu'rrens*. 2. White, red. July. Cape of Good Hope. 1794. Jacq. H. Schœn. t. 165.
- *elatior*. 2. Yellow, purple. July. Cape of Good Hope. 1820. Jacq. H. Schœn. t. 172.
- *fa'stuosa*. 2. Orange, red. June. Cape of Good Hope. 1795. Biennial. Jacq. H. Schœn. t. 166.
- — *spinulosa*. 2. Orange. June. Cape of Good Hope. 1795. Annual. Jacq. H. Schœn. t. 167. Syn., *A. spinulosa*.
- *fla'ccida*. 1. White, red. June. Cape of Good Hope. 1794. Annual.
- *lævis*. 2. Orange, purple. June. Cape of Good Hope. 1774. Syns., *A. glabrata* (Jacq. H. Schœn. t. 175), *A. grandiflora*, and *A. squarrosa*.
- *Leichtlinia'na*. 3. Golden-yellow. (Probably is the same as *A. revoluta*.)
- *leptorh'za*. Orange-yellow, coppery outside. Cape of Good Hope. Annual.
- — *brevisca'pa*. Flower stalk short.
- — *longisca'pa*. Flower stalk long.
- *melanoc'cla*. 1. White. Purple. June. Cape of Good Hope. 1812.
- *plantagi'nea*. See *Venidium semipapporum*, var. *plantagineum*.
- *repens*. See *Arctotheca repens*.
- *re'ptans*. 1. White, orange. July. Cape of Good Hope. 1795.
- *revolu'ta*. 1. Orange, with darker centre. June. Cape of Good Hope. 1820. Jacq. H. Schœn. t. 173. B. M. t. 6835.
- *ro'sea*. 1. Pink. September. Cape of Good Hope. 1793. Jacq. H. Schœn. t. 162. Syn., *A. stœchadifolia*, var. *decumbens*.
- *Schrade'ri*. Pink. May. Cape of Good Hope. 1832. Annual.
- *virga'ta*. 1. Yellow. July. Cape of Good Hope. 1816. Hardy annual.

Arcua'tion. The same as **Layering**.

Ardi'sia. (From *ardis*, a spear-head; in reference to the sharp-pointed divisions of the flower. Nat. ord., *Myrsinaceæ*.)

Mostly useful stove or greenhouse evergreen trees or shrubs. 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. Stove evergreens, except where otherwise specified. Weak manure-water given occasionally until the berries begin to colour will be found beneficial.

- A. acuminata*. 7. July. Guiana. 1803.
- *canaliculata*. 6. July. 1821. B. C. t. 1083.
- *canarie'nsis*. 10. Red. July. Canaries. 1820. Greenhouse.
- *capitata*. Greenish-white; berries bright red. Fiji. 1887.
- *colorata*. 10. Red. July. E. Ind. 1816.
- *complanata*. 6. Pink. Penang. 1824.
- *cori'cea*. 7. Scarlet. Antilles. 1824.
- *crenula'ta*. 3 to 6. Red. July. Mexico. 1809.
- *cri'spa*. 2. E. Ind. Berries scarlet. 1809. Syns., *A. crenata*, B. M. t. 1950, *A. crenulata*, Lodd., and *A. lentiginosa*.
- — — *e'legans*. 10. Red. August. E. Ind. 1809. Andr. Rep. t. 623.
- *exce'lsa*. See *Heberdenia excelsa*.
- *horto'rum*. White. Japan. 1866. Berries red. Gf. 1865, t. 491.
- *hymena'ndra*. See *Hymenandra Wallichii*.
- *hu'milis*. 3. Red. July. Ceylon. 1820. Syns., *A. litoralis*, Andr. Rep. t. 630, *A. solanacea*, B. M. t. 1677, and *A. umbellata*.
- *japo'nica*. 1. White. June. Japan. 1884.
- *lanco'la* ta. 6. Red. July. E. Ind. 1809.
- *lateriflora*. 6. White. W. Ind. 1793.
- *litora'lis*. 4. Red. July. E. Ind. 1809.
- *maeroca'rrpa*. 5. Flesh. Nepal. 1824. Greenhouse.
- *mamilla'ta*. Dwarf. White, tinged rose; berries rose-red. China. 1887.
- *meta'llica*. Rose. Sumatra. 1881. III. Hort. vol. 28, t. 421. Leaves with a violet tint on the upper surface.
- *odontophylla*. 6. Pale salmon-red. July. Bengal. 1834.
- *Olive'ri*. Rose-purple, white eye. July. Costa Rica. 1876. B. M. t. 6357.
- *panicula'ta*. 12. Red. July. E. Ind. 1818. B. R. t. 638; B. M. t. 2364.
- *pi'cta*. 1835.
- *pube'scens*. 6. July. 1820. Greenhouse.
- *puncta'ta*. 10. White. July. China. 1823.
- *pyramida'lis*. 25. Red. July. Santa Cruz. 1818.
- *serrula'ta*. 3. Red. July. China. 1821.
- *thyrsiflora*. 5. Pink. Nepal. 1824. Greenhouse.
- *tinifolia*. 10. Red. July. W. Ind. 1820.
- *villo'sa*. Whitish. October. China.
- — — *mo'llis*. Has fine red berries.
- *Walli'chii*. 2. Red. July. E. Ind.

Ardui'na. (In honour of *P. Arduini*, curator of the economical garden of Padua, in the time of Linnæus. Nat. ord., *Apocynaceæ*.) Now referred to **Carissa**.

A. bispinosa. See *Carissa Arduina*.

Are'ca. The Cabbage Palm. (Called *arec*, in Malabar, when an old tree. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

Ornamental and very effective stove palms. Loam, peat, leaf-soil, and sand will be found the best mixture. Seeds in good bottom-heat. 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.

- A. d'iba*. 30. Mauritius. 1842.

- A. Al'icia*. N. Australia.
 — *au'rea*. Petioles yellow. Seychelles Islands. 1868.
 — *Bau'eri*. See *Rhopalostylis Baueri*, B. M. t. 5935.
 — *Ca'techu*. 30. White. E. Ind. 1690. B. and W. 276.
 — *conci'nna*. 8 to 12. Ceylon.
 — *crini'ta*. See *Acanthophaenix crinita*.
 — *ex'lis*. 30. W. Ind. 1823.
 — *fla'va*. Stem and petioles yellow. Madagascar. 1877.
 — *giga'ntea*. See *Pinanga ternatensis*.
 — *glandulo'sa*. 30. Moluccas.
 — *hu'milis*. 6. White. E. Ind. 1814.
 — *lute'scens*. See *Hypophorbe indica*.
 — *ma'micota*. 30. S. Amer. 1822.
 — *monosta'chya*. See *Bacularia monostachya*.
 — *monta'na*. 30. S. Amer. 1820.
 — *no'bilis*. See *Oncosperma Van Houtteanum*.
 — *Normanbyi*. See *Ptychosperma Normanbyi*.
 — *olera'cea*. See *Oreodoxa oleracea*.
 — *purpu'rea*. Stem and petioles bronzy-purple. Madagascar. 1877. Ill. Hort. n.s. t. 298.
 — *ru'bra*. Of gardens, see *Dietyosperma rubra*.
 — *sa'pida*. See *Rhopalostylis Baueri*, Rev. Hort. 1878, p. 350.
 — *seychella'rum*. See *Phœnicophorum*.
 — *specio'sa*. See *Hypophorbe amaricanalis*.
 — *tria'ndra*. 20. E. Ind. 1825.
 — *pumi'ta*. 10. Java. B. M. t. 6025. Syn., *A. pumila*.
 — *Verschaffé'ltii*. See *Hypophorbe*.

Arena'ria. (From *arena*, sand; in reference to the sandy soil in which the plant grows. Nat. ord., *Caryophyllaceæ*; Tribe, *Alsineæ*. Allied to *Alsine*.)

All hardy herbaceous perennials, except when otherwise described. Seeds; division of the plant; ordinary garden-soil.

- A. austri'aca*. ½. White. July. Austria. 1793.
 — *batea'rica*. ½. White. July. Majorca. 1787. Hardy evergreen trailers.
 — *bifo'ra*. ½. White. March. Switzerland. 1818. Jacq. Ic. t. 83.
 — *brevica'lis*. See *A. lanceolata*.
 — *caespito'sa*. ½. White. July. Switzerland. 1826. Syn., *A. verna caespitosa*.
 — *calyci'na*. See *A. Mediterranea*.
 — *calycu'la*. ½. White. July. Hungary. 1817.
 — *canade'n'sis*. ½. Red. July. N. Amer. 1812. Hardy annual.
 — *can'e'scens*. ½. White. July. 1817.
 — *capilla'cea*. ½. White. July. Piedmont. 1819. Hardy annual.
 — *capilla'ris*. ½. White. July. Siberia. 1820.
 — *cherlerioi'des*. See *Alsine lanceolata*.
 — *cili'a'ta*. ½. White. July. Ireland. Eng. Bot. ed. 3, t. 238. Syn., *A. multicaulis*.
 — *contro'e'rsa*. ½. White. July. Portugal. 1817. Hardy annual. Syn., *A. coimbricensis*.
 — *dahu'rica*. 1. White. July. Dahuria. 1824.
 — *de'nsa*. See *A. gracilis*.
 — *fascicu'la'ta*. ½. White. July. Scotland. Hardy annual.
 — *filifo'lia*. ½. White. July. Arabia.
 — *formo'sa*. ½. White. June. Dahuria. 1824.
 — *Gera'rdi*. See *A. verna*.
 — *glabe'rri'ma*. ½. White. July. Caucasus. 1816.
 — *glandulo'sa*. ½. Purple. June. Europe. 1820. Hardy annual. Jacq. H. Schoenb. t. 355.
 — *glomera'ta*. See *Alsine*.
 — *graminifo'lia*. ½. White. July. Siberia. 1817. Syn., *A. proce'ra*.
 — *gra'cilis*. ½. White. July. Hungary. 1824. Syn., *A. densa*.
 — *grandifo'ra*. ½. White. July. Switzerland. 1783. Syns., *A. juniperina* and *A. triflora*.

- A. grave'olens*. White. July. 1820. Syn., *A. pubescens*.
 — *gypsophylloides*. ½. White. Asia Minor. 1823.
 — *He'lmii*. ½. White. July. Siberia. 1826.
 — *hirsu'ta*. ½. White. July. Caucasus. 1820.
 — *imbrica'ta*. See *A. tetragetra*.
 — *juniperi'na*. See *A. grandiflora*.
 — *lanceola'ta*. ½. White. June. Switzerland. 1823. Syn., *A. brevicaulis*.
 — *laricifo'lia*. ½. White. June. Switzerland. 1816. Syn., *Alsine laricifolia*.
 — *longifo'lia*. ½. White. July. Siberia. 1823.
 — *macroca'rpa*. ½. White. July. N. Amer. 1810.
 — *mar'i'na*. See *Spergularia salina*.
 — *margina'ta*. See *Spergularia marina*.
 — *mediterra'nea*. ½. White. July. Barbary. 1816. Hardy annual. Syn., *A. calycina*.
 — *mollugi'na*. ½. White. July. Spain. 1816. Syn., *Alsine molluginæa*.
 — *monta'na*. ½. White. June. France. 1800. B. M. t. 1118.
 — *mucrona'ta*. ½. White. June. Mediterranean. 1823. Hardy annual. Syns., *A. mediterranea*, *A. triandra*, and *Alsine mucronata*.
 — *multica'u'lis*. See *A. ciliata*.
 — *nardi'fo'lia*. ½. White. July. Siberia. 1827.
 — *memoro'sa*. ½. White. S. Amer. 1832. Hardy evergreen undershrub.
 — *norve'gica*. ½. White. July. Orkney and Shetland Islands. Hardy evergreen plant. Eng. Bot. ed. 3, t. 237.
 — *otitoi'des*. White. July. Siberia. 1820.
 — *pe'n'dula*. White. July. Hungary. 1816.
 — *pep'ioides*. White. June. Britain. Evergreen creeper.
 — *pinifo'lia*. White. July. Caucasus. 1823.
 — *polygonoi'des*. Red. July. Switzerland. 1822.
 — *proce'ra*. See *A. graminifolia*.
 — *procu'mbens*. Purple. July. Egypt. 1801. Half-hardy deciduous trailer.
 — *pub'e'scens*. See *A. graveolens*.
 — *purpura'scens*. ½. Pink. May. Pyrenees. 1869.
 — *purpu'rea*. White. July. Spain. 1823. Hardy annual.
 — *ramoso'ssima*. White. July. Hungary. 1816. Hardy biennial.
 — *recur'va*. White. July. Alps. 1822.
 — *ri'gida*. ½. White. July. Siberia. 1823.
 — *rostra'ta*. ½. White. August. Hungary. 1816.
 — *rotundifo'lia*. ½. White. July. Siberia.
 — *rube'lla*. ½. Red. July. Scotland. Syn., *Alsine rubella*, Eng. Bot. ed. 3, t. 242.
 — *ru'bra*. See *Spergularia rubra*.
 — *sali'na*. See *Spergularia rubra*.
 — *saxa'tilis*. ½. White. July. Germany. 1732.
 — *sea'bra*. ½. White. July. Alps. Europe.
 — *segeta'lis*. 1. White. July. France. 1805. Syn., *Alsine segetalis*.
 — *seta'cea*. See *Alsine*.
 — *stria'ta*. ½. White. July. Switzerland. 1683.
 — *stri'cta*. See *Alsine recurva*.
 — *subula'ta*. ½. White. June. Caucasus. 1822.
 — *tenuifo'lia*. ½. White. July. England. Hardy annual. Syn., *Alsine tenuifolia*.
 — *Barre'le'ri*. ½. White. July. South of France. 1820.
 — *hy'brida*. ½. White. July. South of France. 1827.
 — *visco'dula*. ½. White. July. France. 1818.
 — *tetraque'tra*. ½. White. August. Pyrenees. 1731. Syn., *A. imbricata*.
 — *trifo'ra*. See *A. grandiflora*.
 — *tria'ndra*. See *A. mucronata*.
 — *ubigino'sa*. ½. White. July. W. Europe. 1817. Syns., *Spergularia stricta* and *Alsine stricta*.
 — *ve'r'na*. ½. White. May. Britain. Syn., *A. Gerardi*.

A. verticilla'ta. See *Acanthophyllum verticilla'tum.*

Are'nga. (Derivation uncertain. Nat. ord., *Palmeæ*; Tribe, *Areceæ.* Syn., *Saguerus.*)

Useful and highly interesting stove palms. Rich loam, leaf-soil, and sand. Seeds.

A. saccharifera. 40. June. Moluccas. 1829. Bent. and Tr. t. 277. Syn., *Saguerus Rumphii.*

— *W'ghtii.* India. 1882.

Arethu'sa. (A classical name; one of Diana's nymphs, who was transformed into a fountain. Nat. ord., *Orchideæ*; Tribe, *Neottieæ*; Sub-tribe, *Arethuseæ.*)

A handsome hardy terrestrial orchid; damp shady spots in peaty soil, mixed with charcoal and sphagnum; division.

A. bulbosa. ♀. Rose-purple. June. Carolina. B. M. t. 2204.

— *citia'ris.* See *Bartholina pectinata.*

— *phica'ta.* Andr. Rep. t. 321. See *Pogonia phicata.*

— *rosea.* Syn., *Crybe rosea.* B. R. t. 1872.

Are'tia. (Named in honour of a Swiss professor, *Are'tius.* Nat. ord., *Primulaceæ.*) This is now regarded as a sub-genus of *Androsace*, with perennial species. The species in cultivation are *A. alpina*, *argentea*, *helvetica*, and *pubescens.*

A. Vitatia'na. B. C. t. 166. See *Dionysia.*

Arga'nia. (From *argam*, its aboriginal name. Nat. ord., *Sapotaceæ.*)

Fine greenhouse evergreen tree; layers and cuttings, warm pit, in autumn or spring; the latter under a bell-glass. The specific gravity of the wood is so great that it sinks in water.

A. siderocylon. 14. Greenish-yellow. July. Morocco. 1711. Syn., *Elæodendron Argan*, *Rhamnus pentaphyllum* and *siculus*, and *Siderocylon spinosum.*

Argemo'ne. (From *argema*, a cataract of the eye; in reference to its supposed medicinal qualities. Nat. ord., *Papaveraceæ.*)

Showy border, annual and perennial herbs. The seed of *A. mexicana* 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. albiflora. 2. White. July. Georgia. 1821. B. M. t. 2342.

— *Barclaya'na.* 5. Cream. June. Mexico. 1827. Half-hardy herbaceous perennial. Syn., *A. intermedia.*

— *grandiflora.* 3. White, with yellow anthers. July. Mexico. 1827. Hardy herbaceous perennial. B. R. t. 1264.

— *hispidata.* 2. White. California. 1879. B. M. t. 6402.

— *mexicana.* 2. Yellow. July. Mexico. 1592. B. M. t. 243.

— *ochroleuca.* 2. Sulphur. July. Mexico. 1827. Swt. Fl. Gard. t. 242.

Argenteus. Silvery.

Argola'sia plumo'sa. See *Lanaria plumosa.*

Argyreia. Silver-weed. (From *argyrios*, silvery; in reference to the silvery hue of the leaves. Nat. ord., *Convolvulaceæ.*)

Elegant stove or warm greenhouse evergreen climbers. Cuttings, half-ripened wood, irrsand, under a bell-glass, in April, and in nice hotbottom-heat; rich loam and peat.

A. acuta. White. July. India. 1838. Syn., *A. festiva.*

— *bona-nox.* See *Rivea bona-nox.*

— *capitata.* Purple. July. E. Ind. 1823.

— *cuneata.* 5. Purple. August. E. Ind. 1822.

B. R. t. 661.

— *cymosa.* 10. Pink. Malabar. 1823.

— *hirsuta.* 10. Lilac. June. E. Indies. 1850.

B. M. t. 4940.

— *Hookeri.* Rose-coloured. Himalayas.

— *malabaria.* Cream, throat pink. July.

E. Ind. 1823.

— *ornata.* See *Rivea ornata.*

— *poma'cea.* Pink. Mysore. 1818.

— *speciosa.* 10. Red. July. E. Ind. 1818.

B. M. t. 2446.

— *splendens.* 1. Pink. November. E. Ind.

1820. Syn., *Ipomœa splendens*, B. M. t. 2623, and *Lettsomia splendens.*

— *uniflora.* See *Rivea hycocrateriformis.*

— *zeylanica.* Rosy, crimson eye. India, Ceylon. 1869. Syn., *Calonyction sanguineum* and *Rivea zeylanica.*

Argyrochæ'ta. See *Parthenium.*

Argyrophy'ton Dougla'sii. See *Argyroxiphium sandwicense.*

Argyroxiphium. (From *argyros*, silver, and *xiphion*, a corn-flag; on account of the silvery leaves, which in form resemble those of a *Gladiolus.* Nat. ord., *Compositæ.*)

An exceedingly ornamental greenhouse perennial. Seeds. Rich sandy loam and leaf-mould.

A. sandwicense. Sandwich Islands. 1872. Syn., *Argyrophyton Douglasii.* Ic. Pl. t. 75.

A'ria. See *Py'rus.*

Arisæ'ma. (From *aron*, an arum and *sana*, a standard; in reference to the close affinity to Arum. Nat. ord., *Araceæ.*)

Interesting cool greenhouse tuberous-rooted perennials. Division of their tubers; loam and peat. For general culture, see ARUM.

A. anothum. ♀. Greenish, and brown. Perak. 1890.

— *atrorubens.* Spathe green outside, purple and white within. May. N. America. Syn., *Arum triphyllum*, var. *zebrinum.*

B. M. t. 950.

— *concinnum.* 2. Spathe striped white and green, or white and purple; spadix green or purple. Spring. Sikkim. 1871. B. M. t. 5914.

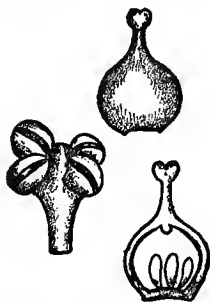
— *curvatum.* 2 to 4. Spathe green and purple-brown; spadix green. Spring. Himalayas. 1871. Syn., *A. helliborifolium.*

B. M. t. 5931.

— *dracocnium.* 2. June. Green. N. Amer.

1759. Hardy. B. R. t. 668.

A. fimbria'tum. Spathe brownish purple, with whitish longitudinal bands; spadix whip-like, covered with purplish threads. G. C. 1884, vol. 22, p. 680.



FLOWERS OF ARISEMA DRACONTIUM.

- *galea'tum*. Spathe green, with white ribs; spadix white. Sikkim. May. 1879.
- *Griffi'thii*. 1 to 1½. Spathe brown-violet, with green veins; spadix brown-violet. Sikkim. Spring. 1879. A remarkably handsome plant. Syn., *A. Hookerianum*, probably hardy.
- *macrosp'a'tha*. Pink. July. Morelia. 1839. Greenhouse.
- *Murra'yi*. 1½. March. Bombay. 1847. Stove. B. M. t. 4388.
- *nepetnho'i'des*. Spathe ochre, brown and green; spadix yellowish. E. Himalayas. 1879. B. M. t. 6446.
- *papill'sum*. Green, white. Ceylon. 1864.
- *pulchrum*. 1½. Spathe green and white; spadix green. Spring. India. 1879.
- *ringens*. ½. May. Japan. 1800.
- *præcox*. Green, white, purple. Japan. B. M. t. 5267.
- *Sieboldii*. Japan. 1857.
- *speciosum*. 2. Purple, greenish. March. Temperate Himalayas. 1872. G. C. 1879, vol. 12, p. 585.
- *terna'tum*. ¾. Purple. May. Japan. 1774. Half-hardy.
- *triphyl'lum*. ¾. Brown. May. N. Amer. 1664. Hardy. Syns., *A. zebrina* and *Arum triphyl'lum*.
- *utile*. 1 to 1½. Spathe purple-brown, with green ribs; spadix purple-brown. Sikkim. Spring. 1879. B. M. t. 6474.
- *Wightii*. Green. Ceylon. 1864.
- *Wra'yi*. 1½. Green, white. Perak. 1889.

Arisa'rum. (Derivation doubtful. Nat. ord., *Aroidæ*.)

- Curious hardy herbaceous perennials, of little horticultural value, peaty soil, division, or seeds.
- A. probosc'æum*. Rootstock creeping. Spathe greyish below, olive-green above. February. S. Italy. B. M. t. 6634.
 - *vulga're*. 1. Rootstock tuberous. Spathe livid purple. May. S. Europe. 1596. B. M. 6023. Syn., *Arum Arisarum*.

Ari'stea. (From *arista*, a point or beard; in reference to the rigid points of the leaves. Nat. ord., *Iridaceæ*; Tribe, *Sisyrinchieæ*.)

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.

- A. capita'ta*. 3. Blue. July. Cape of Good Hope. 1790. B. M. t. 605 (excluding synonyms). Syn., *A. major*. Andr. Rep. t. 160.
- *cyanea*. ¾. Blue. June. Cape of Good Hope. 1759. B. M. t. 458.
- *melaleu'ca*. 1. Pale blue. June. Cape of Good Hope. 1796. B. M. t. 1277.
- *platycar'vis*. 1. Blue. Pondoland. 1887.
- *pusilla*. ¾. Blue. July. Cape of Good Hope. 1806. B. M. t. 123.
- *spira'vis*. 1. Pale blue. May. Cape of Good Hope. 1795. B. M. t. 520.

Aristoloch'ia. Birthwort. (From *aristos*, best, and *locheia*, parturition; its supposed medicinal character. Nat. ord., *Aristolochiaceæ*.)

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, under a bell-glass. Sandy loam for the hardy; peat and loam for the tender kinds.

HARDY.

- A. arka'nsa*. 20. Purple. July. Arkansas. 1824. Deciduous climber.
- *bæ'tica*. 6. Purple. June. Spain. 1596. Deciduous climber.
- *chilensis*. 6. Purple, green. September. W. Ind. 1832. Deciduous half-hardy.
- *clemat'itis*. 2. Yellow. July. Britain. Herbaceous perennial.
- *l'nga*. 2. Purple. July. South of Europe. 1548. Deciduous trailer.
- *macrad'nia*. Green, brown. May. Mexico. 1846.
- *pa'lidia*. 2. White, purple. Italy. 1840. Herbaceous perennial.
- *pistoloch'ia*. 2. Purple. July. South of Europe. 1597. Deciduous trailer.
- *sagitta'ta*. 1. Purple. July. N. Amer. 1819. Herbaceous perennial.
- *serpenta'ria*. 1. Dark purple. July. N. Amer. 1632. Deciduous trailer.
- *sina'rum*. Green. China. 1859.
- *st'pho*. 30. Yellow, brown. July. N. Amer. 1763. Deciduous climber.
- *toment'sa*. 20. Purple. July. N. Amer. 1799. Deciduous climber.

GREENHOUSE.

- A. alti'ssima*. Yellow, brown. June to August. Sicily. B. M. t. 6536.
- *arborescens*. 20. Yellow, purple. July. America. 1737. Evergreen shrub.
- *ciliata*. Purple, yellow. Buenos Ayres.
- *glau'ca*. 6. Purple. Barbary. 1785.
- *h'erta*. 2. Purple. June. Asia Minor. 1759. Herbaceous perennial.
- *rotunda*. 2. Dark purple. July. South of Europe. 1596. Herbaceous perennial.
- *salpin'ca*. Cream, veined purple. Lip with central yellow blotch. Paraguay. 1886.
- *sempervi'rens*. 4. Purple. June. Candia. 1727.

STOVE.

- A. acuminata*. 10. Purple. Mauritius. 1822.
- *anguel'da*. 5. White, brown. December. New Grenada. 1845. Twining evergreen.
- *arbo'rea*. Brown, purple. New Grenada. 1862.
- *barbata*. Brown, reticulated with green, and bearded with dark purple hairs. Venezuela. 1870.
- *bilobata*. 10. Purple. 1824.
- *bractea'ta*. 3. Purple. July. E. Ind. 1793. Evergreen trailer.
- *brasiliensis*. 20. Yellow. Brazil. 1620.
- *caudata*. 5. Lurid. June. Brazil. 1823. Deciduous twiner.

- A. caudata foetens*. 20. Purple, yellow. June. W. Ind. 1832.
 — *cilio'sa*. 6. Purple, yellow. September. Brazil, 1829.
 — *dyspe'ta*. White, deep purple. Columbia. 1871.
 — *cordifo'lia*. 80. Creamy-yellow, lurid purple. Mexico. 1871.
 — *cymbi'fera*. 20. Purple. July. St. Paul. 1829.
 — *deltoid'ea variega'ta*. Leaves variegated with white. Columbia. 1870.
 — *Ducha'rtei*. Cream-white, brown. Upper Amazons. 1868. Syn., *A. Ruiziana*.
 — *e'legans*. Yellowish-green, white, and red-purple. Brazil. 1885. B. M. t. 6909.
 — *floribu'nda*. Purplish-red, with yellow veins. Brazil. 1868.
 — *foetida*. 20. July. Mexico. 1822.
 — *galea'ta*. Climber. Cream-coloured, with purplish veins. New Grenada. 1878.
 — *Gibe'rtii*. Yellow, purple. Paraguay.
 — *giga'ntea*. 20. Yellow, brown. July. Brazil.
 — *gt'gae*. 6. White, brown. June. Guatemala. 1842. Deciduous climber.
 — *Goldie'a'na*. Climber. Flowers enormous, measuring 26 in. in length, by 11 in. diameter; outside greenish, inside deep yellow with chocolate veins. Old Calabar River. 1867. The native children use the flowers as hats.
 — *grandifo'ra*. 20. Jamaica. 1824.
 — *hast'a'ta*. 16. July. Cuba. 1822.
 — *hi'ans*. Bronzy-green, veined and spotted purple-brown. Venezuela. 1887.
 — *hyperbo'rea*. 20. Purple. May. India. 1836.
 — *i'ndica*. 10. Purple. July. E. Ind. 1780.
 — *labio'sa*. 20. Purple, green, yellow. July. Brazil. 1821.
 — *leucone'u'ra*. Purple-brown. September. Magdalena. 1858.
 — *longicauda'ta*. Climber. Creamy-white with purple veins. British Guiana. 1890.
 — *longifo'lia*. Purple-brown. Climber. Hong Kong. B. M. t. 6884.
 — *ma'xima*. 20. Purple. July. New Spain. 1759.
 — *odorati'ssima*. 10. Purple. July. Jamaica. 1737.
 — *ornithoce'phala*. 20. Purple, brown. October. Brazil. 1838.
 — *pa'durifo'rmis*. 10. Caraccas. 1823.
 — *randi'cula*. Tawny, with purple-brown veins. Stove climber. B. M. t. 6934.
 — *ri'ngens*. 20. Purple, green, yellow. July. Brazil. 1820. Syn., *A. brazilensis*.
 — *Rozbu'rgii*. September. India. 1881.
 — *sacca'ta*. 20. Purplish-red. September. Sylhet. 1829. Deciduous climber.
 — *suriname'nsis*. See *A. trilobata*.
 — *Thwait'e'sii*. 3. Yellow. March. Old Calabar. 1854.
 — *tricauda'ta*. Dark purple-brown. August. Mexico. 1866.
 — *tri'fida*. 15. Green. Caraccas. Deciduous climber.
 — *triloba'ta*. 6. Purple. June. S. Amer. 1775. Syn., *A. surinamensis*.
 — *unguifo'lia*. Brownish-purple. June. Labuan. 1880.
 — *Westla'ndi*. Climber. Greenish-yellow, veined purple-brown. China. 1888. B. M. t. 7011.

Aristote'lia. (In memory of the great Aristotle. Nat. ord., *Tiliaceae*.)

- A. Ma'equi* 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. Brathwa'tei. White. New Hebrides. 1881.
Ma'equi. 4. Whitish-green. May. Chili. 1785. Wats. Dendr. 1, t. 44.

- A. Ma'equi variega'ta*. 4. Whitish-green. May. Gardens.
 — *racemo'sa*. 6 to 20. New Zealand. 1873.

Armeni'aca. See **Prunus**. *A. vulgari's* is the Apricot.

Arme'ria. Thrift. (The Latin name for a species of Pink. Nat. ord., *Plumbaginaceae*.)

All ornamental hardy herbaceous perennials, except when otherwise specified. Division of the plant; seeds in spring; sandy, loamy soil. The tender kinds require a well drained soil, and should receive the protection of a frame, or pit, during winter.

- A. alpi'na*. 1. Purple. July. Carinthia.
 — *arenaria*. 1. Pink. June. France.
 — *ba'tica hirta*. 1. Pink. July. N. Africa. 1820. Greenhouse.
 — *caepito'sa*. 1. Pink. June. South of Europe. 1817. Gf. t. 1192. Syn., *A. humilis*.
 — *cephalo'tes*. 1. Rose. June. S. Europe. 1800. B. M. t. 4128. Syns., *A. formosa*, *latifolia*, *mauritanica*, and *pseudo-armeria*.
 — *denticula'ta*. 2. Flesh. June. Naples. 1816.
 — *diantho'des*. 1. Pink. June. Europe. 1810.
 — *fascicula'ta*. 2. Purple. July. Portugal. Greenhouse evergreen shrub. B. R. 1841, t. 21.
 — *hirta*. See *A. ba'tica hirta*.
 — *hu'milis*. See *A. caepitosa*.
 — *ju'ncea*. †. Rose pink. June. South Europe.
 — *juniperifo'lia*. †. Pink. June. Spain. 1818.
 — *latifo'lia*. See *A. caepitosa*.
 — *litorea'lis*. 1. Pink. July. South of Europe.
 — *maritima*. See *A. vulgari's*.
 — *maurita'nica*. See *A. cephalotes*.
 — *pinifo'lia*. 1. Pink. June. Portugal.
 — *plantagi'nea*. 1. Red. June. South of Europe. 1818. Eng. Bot. ed. 3, t. 1154.
 — *leuca'ntha*. White flowered. Syns., *A. alliacea*, *plantaginea alba*, and *A. scorzonarifolia*.
 — *pu'ngens*. 1. Pink. June. Spain. 1818.
 — *undula'ta*. White. Greece. 1888.
 — *vulgari's*. 1. Red. July. Europe. Syns., *A. maritima* and *Statice Armeria*. Eng. Bot. ed. 3, t. 1152.
 — *a'tha*. †. White. September. Gardens.
 — *coccine'a*. †. Red. September. Gardens.

Arne'bia. (Arabic name of the plant. Nat. ord., *Boraginaceae*.)

Pretty, hardy herbaceous plants. *A. echinoides* propagated by the offsets taken with a heel in autumn, in sand under a bell-glass, and by root cuttings pegged in saucers of sand in warm pit. Seeds.

- A. cornu'ta*. 1½. Yellow, brown. Afghanistan. 1888.
 — *echinoid'es*. †. Yellow. June. Armenia. B. M. t. 4409.
 — *Griffithii*. †. Orange, black. Afghanistan. Annual. B. M. t. 5266.
 — *hispidi'ssima*. 2. Blue. May. Egypt. 1817. Syn., *Anchusa asperissima*.

A'rnica. (From *arnakis*, lamb-skin; in reference to the texture of the leaves. Nat. ord., *Compositae*; Tribe, *Senecionideae*. Allied to Groundsel.)

Hardy, dwarf herbaceous plants; division of the plants in spring or autumn. Seeds. They like a little peat incorporated with the soil.

- A. Aro'nium*. See *Doronicum latifolium*.
 — *bellidia'strum*. See *Aster bellidiastrum*.
 — *Chamisso'ris*. 2. Yellow. July. N. America.
 — *Ch'i'ui*. See *Doronicum glaciale*.

- A. cordata*. See *Doronicum columnae*.
 — *coriacea*. See *Doronicum corsicum*.
 — *doronicum*. See *Senecio Doronicum*.
 — *foliosa*. 2. Pale yellow. August. United States.
 — *glacialis*. Yellow. July. Switzerland. 1823.
 — *lanigera*. See *Senecio lanatus*.
 — *montana*. 1. Yellow. July. Europe. 1731. B. M. t. 1749. Mountain Tobacco. Syn., *A. helvetica*.
 — *scorpioides*. See *Doronicum latifolium*.

Arno'ldia. See *Dimorphothe'ca*.

Arnop'o'gon. See *Urospe'rmum*. (Nat. ord., *Compositæ*; Tribe, *Cichoraceæ*.)

- A. asper*. See *Urospermum picroides*, var. *asperum*.
 — *capensis*. See *Urospermum picroides*, var. *capense*.
 — *Dalechampi*. See *Urospermum Dalechampi*.
 — *picroides*. See *Urospermum picroides*.

Aro'nia. See *Pyrus*.

Aro'nicum alta'icum. See *Doronicum altaicum*.

Arpophyllum. (From *arpe*, a scimitar, and *phyllon*, a leaf; the leaf is scimitar or sword-shaped. Nat. ord., *Orchidaceæ*.)

Stove evergreen epiphyte. Soil, turfy loam, fibrous peat and charcoal, with thorough drainage.

- A. cardinale*. 1. Rose. Summer. New Grenada. *Pescatorea*, vol. 1, t. 45.
 — *giganteum*. 2. Dark purple, rose. April. Mexico. *Warr. Sel. Orch.* t. 39.
 — *spicata*. 1. Purple. April. Guatemala. 1839. B. M. t. 6022.

Arraca'cia. (Its Spanish name in South America. Nat. ord., *Umbelliferae*; Tribe, *Ammineæ*. Allied to *Conium*.)

Half-hardy perennial, producing large tuberos esculent roots, not unlike parsnips, but of a better quality, highly esteemed in South America, where it is prepared in the same manner as potatoes. Division of the roots; rich loam.

- A. esculenta*. 2. White. July. Santa Fè. 1823. Syn., *Conium Arracacha*. B. M. t. 3092.

Arrhenathe'rum. (From *arrhen*, a male, and *ather*, a point; on account of the awns on the male spikes. Nat. ord., *Gramineæ*; Tribe, *Avenæ*.)

Perennial grasses; seeds; division. Common soil, as for any other grass.

- A. avenaceum*. 5. June. Britain. Syns., *Avena elatior* and *Holcus avenaceus*. *Eng. Bot.* ed. 3, t. 1742.
 — *muticum*. 4. Apetal. July. Scotland.
 — *podocum*. 3. Apetal. July. Germany.

Arrow-head. *Sagitta'ria*.

Arrow-root. *Maranta arundinacea*.

Arta'botrys. (From *artao*, to suspend or support, and *botrys*, grapes; in reference to the way the fruit is supported by the curious tendrils. Nat. ord., *Anonaceæ*.)

In Java the leaves of this plant are held to be invaluable against cholera. Stove evergreen shrub. Cuttings of ripened wood in sand, under a bell-glass, and in bottom-heat, in March or April. Sandy loam and peat, with a little rotten dung.

- A. odoratissima*. 6. Reddish-brown. July. Malay Archipelago. 1768. B. E. t. 423. Syn., *Anona hexapetala*.

Arta'nthe. See *Piper*.

Artane'ma. (From *artao*, to support, and *nema*, a filament; in reference to a tooth-like process growing on the longer filaments. Nat. ord., *Scrophulariaceæ*. Allied to *Torenia*.)

A greenhouse evergreen shrub. Seeds; cuttings of the half-ripened shoots in autumn or spring. May be grown in the open during summer, but it will require the shelter of a frame or pit in winter. Sandy loam and a little peat.

- A. fimbriatum*. 3. Pale blue. August. Moreton Bay. 1830. Sweet Fl. Gard. ser. 2, t. 234. Syn., *Torenia scabra*, B. M. t. 3104.

Artemi'sia. Wormwood. (From *Artemis*, one of the names of Diana. Nat. ord., *Compositæ*; Tribe, *Anthemideæ*.)

Various species of *Artemisia*, 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 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. The dwarf growing silvery leaved species are favourite rock plants.

- A. abrotanum*. 4. Yellow, green. August. Europe. 1548. Hardy deciduous shrub.
 — *hu'mile*. 1½. Yellow, green. September. South of Europe.
 — *tobolekiana*. 5. Yellow, green. September.
 — *Adamsii*. 10. Yellow, green. October. China. 1732. Syn., *A. tenuifolia*.
 — *A'fra*. 3. White. August. Greenhouse evergreen shrub. *Jaqc. H. Schen.* t. 467
 — *alpi'na*. 1. Yellow, green. July. Caucasus 1804.
 — *anethifolia*. 4. Yellowish-green. Autumn. Siberia. 1816.
 — *apri'ca*. See *A. frigida*.
 — *arborescens*. 10. July. Levant. 1640. Hardy evergreen shrub. *Sibth. Fl. Gr.* t. 856
 — *argentea*. 1½. Yellow, green. June. Madeira. 1777. Greenhouse evergreen shrub.
 — *armeni'aca potentillæfolia*. 1. July. Siberia. 1818. Syn., *A. potentillæfolia*.
 — *arragone'nsis*. 1. Yellow, green. July. Spain. 1839. Half-hardy evergreen. Syn., *A. Valentina*.
 — *austri'aca*. 1. White. October. Austria
 — *orientalis*. 2. Yellow, green. July. Armenia. 1816. Syn., *A. orientalis*.
 — *re'pens*. 1. Brown. June. Tartary. 1805. Hardy trailer. Syn., *A. repens*.
 — *bie'nnis*. Yellowish. October. 1823. Coppermine River, N. America. B. M. t. 2472. Syn., *A. hispanica*, *Jaqc. Ic.* t. 172.
 — *camphora'ta sassa'tilis*. 3. Brown. July. Hungary.
 — *ca'na*. 3. Yellow. August. N. America. 1800.

- A. caucasicca*. See *A. lanata*, var. *caucasicca*.
 — *chine'nsis*. 4. Yellow. July. China. 1818.
 Chinese Moza.
 — *cœrule'scens*. 2. Bluish. August. S. Europe.
 Hardy evergreen shrub.
 — *drac'u'neulus*. 2. White, green. July. South
 of Europe. 1548.
 — *fr'i'gida*. 1. Yellow, green. August. Siberia.
 1826. Syn., *A. aprica*.
 — *furca'ta*. See *A. trifurcata*.
 — *ga'lica*. See *A. maritima*.
 — *glacia'lis*. 1. Yellow, green. July. Switzer-
 land. 1739.
 — *hispa'nica*. See *A. biennis*.
 — *in'o'dora*. See *A. Marschalliana*.
 — *Juda'ica*. 2. Yellow. August. 1774. Half-
 hardy evergreen.
 — *lacinia'ta*. N. China.
 — *lactifo'ra*. 2. Pale white. November. Nepaul.
 1823.
 — *Lednice'nsis*. 2. Yellow. July. Carpathia.
 1826. Hardy deciduous shrub.
 — *lan'da cauca'sica*. Corolla woolly at top.
 Caucasus.
 — *mar'i'tima*. 1. Reddish. August to Septem-
 ber. Britain. Syn., *A. gallica*.
 — *Marschallia'na*. 1. Yellow. Caucasus. 1816.
 Syn., *A. inodora*.
 — *mutell'i'na*. 1. Yellow, green. July. Alps.
 Europe. 1815. Syn., *A. Wulfenii*.
 — *norve'gica*. 1. Yellow. July. Norway. 1818.
 — *orienta'lis*. See *avstriaca*, var. *orientalis*.
 — *Pallasia'na*. 1. Yellow, green. July.
 Siberia. 1820.
 — *pectina'ta*. 1. Brown. June. Dahuria. 1806.
 Hardy annual.
 — *peduncula'ris*. See *A. splendens*.
 — *po'nica*. 3. Yellow. September. Austria.
 1870.
 — *potentilla'fo'lia*. See *A. armeniaca*, var. *poten-
 tillæfolia*.
 — *ramo'sa*. 2. Canaries. 1816. Greenhouse
 evergreen.
 — *re'pens*. See *A. austriaca*, var. *repens*.
 — *rupe'stris*. †. Brown. August. Norway.
 1743.
 — *saxa'tilis*. See *A. camphorata*.
 — *scopa'ria*. 3 to 5. Whitish. Autumn. S.
 Europe.
 — *ser'i'cea*. 2. White. June. Siberia. 1796.
 — *spica'ta*. 1. Brown. June. Switzerland. 1790.
 — *Stelleria'na*. †. Yellowish. Kamtschatka.
 — *sp'e'ndens*. See *A. peduncularis*.
 — *tanacetifo'lia*. 1‡. Brownish. Summer. Si-
 beria. 1768.
 — *tau'rica*. 1. White, green. July. Tauria.
 1818.
 — *tenuifo'lia*. See *A. Adamsii*.
 — *Tournefo'rtiana*. 2. Greenish. Rechb. Hort.
 vol. 1, t. 5.
 — *trifurca'ta*. 1. Yellow, green. July. Siberia.
 1820. Syn., *A. furcata*.
 — *Valenti'na*. See *A. arragonensis*.
 — *vulga'ris*. 1. Silvery. August. Eng. Bot.
 ed. 3, t. 732. Common wormwood.
 — — *au'rea*. Leaves yellow. 1879.
 — — *variegata*. 2. Purple. August. Gardens.
 — *Wulfenii*. See *A. mutellina*.

**Arthropodium Madagasca-
 rie'nsis**. See *Phyllarthron Boje-
 riana*.

Arthropodium. (From *arthron*, a
 joint, and *pous*, a foot; in reference to
 the flower-stalks being jointed. Nat.
 ord., *Liliaceæ*. Allied to *Anthericum*.)

Greenhouse herbaceous perennials. Seeds, off-
 sets, and suckers. Sandy loam, and a little
 peat.

- A. cirrha'tum*. 3. White. May. New Zealand.
 1821. B. M. t. 2350.
 — *fimbria'tum*. 2. White. July. Australia.
 1822.
 — *ne'o-caledo'nicum*. 1‡. White. May. New
 Caledonia. 1877.
 — *panicula'tum*. 3. White. May. N. S. Wales.
 1800. Greenhouse bulb. B. M. t. 1421.
 Syn., *Anthericum paniculatum*, *Arthro-
 podium minus* of B. R. t. 866, but not of
 R. Brown.
 — *pe'ndulum*. 2. White. July. Anstralia. 1822.
 Red. Lil. t. 360. Syn., *Phalangium pen-
 dulum*.

Arthropteris. (From *arthron*, a
 joint, and *pterus*, a fern; alluding to the
 articulated stripes. Nat. ord., *Filices—
 Polypodiaceæ*.)

Greenhouse ferns. See **FERNS**.

- A. albo-puncta'ta*. I. of Bourbon.
 — *fl'ipes*. New Zealand.

Arthroste'mma. (From *arthron*, a
 joint, and *stemma*, a crown; the flower-
 stalks being jointed. Nat. ord., *Melasto-
 maceæ*. 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.

- A. fra'gile*. 3. Rosy. June. Mexico. 1846.
 Stove evergreen. Journ. Hort. Soc., vol.
 3, p. 75.
 — *ni'tidum*. 2. Pale lilac. June. Buenos
 Ayres. 1830. Greenhouse evergreen.
 B. M. t. 3142.
 — *vers'icolor*. †. Pink. September. Brazil.
 1825. Stove evergreen. B. M. t. 3678.
 Syn., *Rhezia versicolor*, B. R. t. 1066.

Arthrotaxis is often erroneously
 used for **Athrotaxis**.

Artichoke. (*Cynara scolymus*.)
 The word artichoke is 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,
alcoalos, 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 exuda-
 tions 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. Crown or Globe
 earliest. Drumhead is the best. The
 artichoke is sometimes called the *globe
 artichoke*, on account of the round out-
 line 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 con-
 taining 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 the strongest, and such as 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 as 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 seaweed, 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 a manure 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-rotted 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.

Artocarpus. Bread-fruit. (From *artos*, bread, and *carpos*, fruit. The fruit, baked, resembles bread. Nat. ord., *Urticaceae*; Tribe, *Artocarpeae*.)

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 requiring a moist tempera-

ture. Cuttings of ripened wood in sand, under a hand-light, and in a brisk bottom-heat, difficult to manage. Light, rich loam, leaf-soil and sand. The flowers of all the species are whitish-green.

- A. Cannadn.* Leaves bronzy-crimson, tinted purplish. Society Islands. 1875. Fl. and Pom. 1875, p. 211.
 — *heterophylla*. 60. E. Ind. 1778.
 — *incisa*. 50. South Sea Islands. 1793. B. M. t. 2869-71.
 — *nucifera*. 50. E. Ind. 1793.
 — *integrifolia*. 60. June. E. Ind. 1778. B. M. t. 2833-4. Jack-tree.
 — *laciniatus*. Polynesia.
 — *metallicus*. Leaves bronzy above, reddish-purple beneath. Polynesia.

A'rum. (From *aron*, supposed to be an ancient Egyptian word. Nat. ord., *Aroideæ*.)

All are propagated by division of the roots; best done when the plants cease growing, in autumn, or when they commence growing, in spring. Sandy loam will suit most of them; the stove species should have a portion of peat. All are herbaceous perennials, except where otherwise particularized.

HARDY.

- A. atro-rubens*. 1. Brown. July. N. Amer. 1758.
 — *balbiferum*. 3. Purple. April. Bengal. 1813.
 — *byzanti-num*. Spathe green or purple. Crete. 1859.
 — *concinna*. Syria. 1859.
 — *Dioscoridis*. Spathe spotted inside. 1. Levant.
 — *dracunculium*. 1. Green. June. N. Amer. 1759. B. R. t. 668.
 — *dracunculus*. 3. Brownish-purple. July. South Europe. 1548.
 — *elongatum*. Spathe green and purple outside, blackish purple within. Crimea. 1882.
 — *gratum*. Spathe spotted inside. Taurus. 1859.
 — *hygrophilum*. Greenish. Asia Minor. 1860.
 — *italicum*. 2. Light yellow. June. Italy. 1863.
 — *Liepoldii*. Spathe spotted inside. Asia Minor. 1859.
 — *longispatum*. Spathe yellowish. Dalmatia. 1860.
 — *maculatum*. 3. Spathe greenish. Leaves spotted. Britain.
 — *Malvi*. Spathe greenish. Montenegro. 1869. Syn., *A. Zelebori*.
 — *marmoratum*. Leaf mottled with various shades of green and white. Island of Naxos. 1859.
 — *Nickei*. Spathe greenish. Levant. 1859.
 — *nitidum*. Spathe blackish inside.
 — *numidicum*. Algeria. 1859.
 — *orientale*. Levant. Syn., *A. alpinum*.
 — *palma*. 2. 1825.
 — *Petteri*. Greenish. Dalmatia. 1860.
 — *phitiscum*. Spathe spotted inside. Syria. 1859.
 — *picum*. 2. Corsica. 1801.
 — *proboacdeum*. 1. July. Apennines. 1818.
 — *spectabile*. 1. Spathe spotted inside. Asia Minor.
 — *syriacum*. 1. Spathe spotted inside. Syria. 1860.
 — *tenaxilium*. 1. White. June. South Europe. 1570.
 — *triphyllosum*. 1. Brown. June. N. Amer. 1864.
 — *variola*. Spathe spotted inside. Dalmatia. 1859.
 — *zebrinum*. 1. Brown. June. N. Amer. 1864.

GREENHOUSE.

- A. crinitum*. 1. Brown. April. Minorca. 1777.
 — *detruncatum*. Greenish-yellow, spotted purple. Asia Minor. 1889.
 — *palestinum*. Dark purple. Jerusalem. 1864, re-introduced 1880.
 — *ringens*. 1. June. Japan. 1800.
 — *saccharinum*. Blackish purple. 1889.
 — *ternatum*. See *Pinellia tuberifera*.

STOVE.

- A. campanulatum*. 2. Purple. May. E. Ind. 1817.
 — *colocasia*. See *Colocasia antiquorum*.
 — *divaricatum*. 2. Green. July. E. Ind. 1759. Tuberous-rooted.
 — *hederaeformis*. 1. Purple. June. W. Ind. 1793. Epiphyte.
 — *indicum*. See *Colocasia indica*.
 — *integrifolium*. 3. Green. June. 1825. Evergreen.
 — *lingulatum*. 6. W. Ind. 1793. Epiphyte.
 — *marginatum*. 2. E. Ind. 1820.
 — *obtusilobum*. 2. 1824.
 — *oriense*. 1. Purple. June. S. Amer. 1820. Tuberous-rooted.
 — *pedatum*. 1. S. Amer. 1820.
 — *pentaphyllum*. 1. E. Ind. 1818.
 — *ramosum*. 3. June. 1810. Evergreen.
 — *sagittifolium*. 2. 1824.
 — *sarmentosum*. Brazil. 1835.
 — *spirale*. 1. Brown. May. China. 1816.
 — *trilobatum*. 1. Purple. June. Ceylon. 1714. Tuberous-rooted.
 — *auriculatum*. 1. Purple. June. Ceylon. 1714. Tuberous-rooted.
 — *venosum*. B. R. t. 1017. See *Sauromatum guttatum*.

Aru'ndina. (From *arundo*, a reed. Nat. ord., *Orchidaceæ*.)

- A. bambuseifolia*. 3 to 5. Magenta, orange, white. July. N. E. India. Warn. Orch. Alb. 3, t. 139. Syn., *Cymbidium bambusifolium*.

Arundina'ria. (From *arundo*, a reed. Nat. ord., *Gramineæ*.)

Hardy, or nearly hardy evergreen shrubby grasses. Indispensable for sub-tropical gardening; very ornamental, as isolated tufts in sheltered positions. Deep rich soil, with plenty of moisture; division; usually grown under the name of *Bambusa*.

- A. falcatula*. 3 to 6. India. Syn., *Bambusa gracilis* of gardens.
 — *khasiana*. 1½ to 2. India. 1881.
 — *Maximowiczii*. Japan. See *Bambusa Simonsii*.
 — *Metake*. 4 to 6. Japan. Syn., *Bambusa japonica*.

Arundine'lla. (Diminutive of *arundo*, a reed. Nat. ord., *Gramineæ*.)

- A. anomala*. Japan. 1889. Dwarf grass suitable for lawns and requiring to be cut only twice yearly.

Aru'ndo. Reed. (A word of doubtful derivation; perhaps from the Latin word *arundo*, a reed. Nat. ord., *Gramineæ*.)

A charming group of hardy plants of easy culture in damp, sheltered situations. *A. conspicua*, which is the hardiest, does well in ordinary garden soil, but inferior in beauty to the Pampas grass.

- A. conspicua*. 3 to 8. Pale straw colour. New Zealand. 1843. Very ornamental, holding its large panicles for several months.

- A. do'nae*. 10. July. South Europe. 1648. There is a form with variegated leaves.
 — — *versif' color*. 3. July. South Europe. 1648. Fl. Ser. tt. 1425-6.
 — *maurita'nica*. 12. N. Africa. Greenhouse. Mediterranean need.

Asafœ'tida. *Narthex asafœ'tida*.

A'sarum. *Asarabacca*. (From *a*, not, and *saron*, feminine; the application not obvious, but perhaps because too violent a medicine for women. Nat. ord., *Aristolochiæ*.)

Interesting hardy herbaceous plants, more curious than pretty. Division in spring; common border or rockery, a little peat added to the soil will be found beneficial.

- A. albiv'niûm*. Green, purple; leaves white-veined. Japan. 1864.
 — *arifolium*. 1. Brown. June. N. Amer. 1823. Syn., *A. grandifolium*.
 — *canad'ense*. 1. Brown. June. Canada. 1713. B. M. t. 2769.
 — *caudat'um*. Brownish-red. July. California. 1830. This may be the same as *A. Hookeri majus*.
 — *europ'um*. 1. Dull brown. May. England.
 — *geophilum*. 2. Red-purple, spotted white, edged golden yellow. November. S. China. 1888. B. M. t. 7168. Cool greenhouse.
 — *grandifolium*. See *A. arifolium*.
 — *macranthum*. Pale brown, yellow, purple. Kelung, Formosa. 1877. B. M. t. 7022.
 — *parviflora*. Purple, green. Japan. 1863.
 — *Thunb'rgii*. 3. Purplish-green. May. Japan. 1839. Syn., *Heterotropa asaroides*. B. M. t. 4933.
 — *virginicum*. 1. Brown. May. Virginia. 1759.

Ascarici'da. See *Vernonia*.

Ascle'pias. Swallow-wort. (The Greek name of *Æsculapius* of the Latins. Nat. ord., *Asclepidaceæ*.)

All hardy herbaceous and sub-shrubby perennials, except when otherwise specified. The hardy species, most of which are highly ornamental border plants, by seeds and division in spring; 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, and sown in heat, in February. Peat and loam, but most of the latter.

- A. acuminat'a*. 2. Red, white. July. N. Amer. 1826. Syn., *A. laurifolia*.
 — *amœ'na*. 3. Purple. July. N. Amer. 1732.
 — *amplexican'lis*. 2. Red. July. N. Amer. 1816.
 — *angustifolia*. See *A. Michauxii*.
 — *arborescens*. See *Gomphocarpus*.
 — *atrosanguinea aurea*. Blood-red, corona yellow. Bolivia. 1831.
 — *ciné'ra*. 2. Brown. July. N. Amer. 1825.
 — *citri'folia*. Jacq. Ic. t. 343. See *A. variegata*.
 — *connivens*. See *A. phytolaccoides*.
 — *cornu'ti*. See *A. Syriaca*.
 — *Curusa'vica*. 3. Scarlet. July. S. Amer. 1692. Stove herbaceous. B. R. t. 81.
 — *a'lba*. 1. White. July. S. Amer. Stove herbaceous.
 — *decumbens*. See *A. tuberosa*.
 — *Douglassii*. 2. Red. Autumn. West America. 1846.
 — *exaltat'a*. See *A. phytolaccoides*.
 — *giga'ntea*. See *Calotropis*.
 — *hybrida*. See *A. purpurascens*.

- A. incarnat'a*. 2. Purple. July. Canada. 1710. B. R. t. 250.

- *laurifolia*. See *A. acuminata*.
 — *linc'aria*. 2. White. July. Mexico. 1802. Greenhouse herbaceous.
 — *linifolia*. See *A. verticillata*, var. *linifolia*.
 — *longifolia*. See *Gomphocarpus longifolius*.
 — *mezica'na*. 3. White. July. Mexico. 1821. Greenhouse evergreen.
 — *Michauxii*. 3. White. July. Mexico. 1817. Syn., *A. angustifolia*.
 — *nivea*. 3. White. August. N. Amer. 1730.
 — *obtusifolia*. 3. Purple. July. N. Amer. 1820. Syn., *A. purpurascens* of some authors, but not of Linnæus.
 — *parviflora*. See *Metastelma parviflora*.
 — *paup'ercula*. 2. Red. July. N. Amer. 1817.
 — *phytolaccoides*. 3. Purple. July. N. Amer. 1812. Syn., *A. connivens*.
 — *polystach'ia*. 4. White. July. N. Amer. 1825.
 — *pulchra*. See *Oxypetalum pulchrum*.
 — *purpurascens* of Linnæus. 3. Purple. July. N. Amer. 1732. Syn., *A. hybrida*.
 — *quadrifolia*. 1. White, red. July. N. Amer. 1820.
 — *ro'sea*. 1. Red. July. Mexico. 1824. Greenhouse herbaceous.
 — *rubra*. 1. Red. July. Virginia. 1825.
 — *scandens*. See *Dœmia*.
 — *Sullivanti*. Deep purple. Closely allied to *A. syriaca*.
 — *syriaca*. 4. Purple. July. N. Amer. 1629. Syn., *A. Cornuti*.
 — *tenacissima*. See *Gymnema*.
 — *tuberosa*. 2. Orange. August. N. Amer. 1680. Hardy tuber. Swt. Fl. Gard. ser. 2, t. 24. Syn., *A. decumbens*.
 — *variegata*. 4. White. July. N. Amer. 1597. B. M. t. 1182.
 — *verticillata*. 3. White, yellowish-green. July. N. Amer. 1759.
 — *vinifolia*. 3. White. July. Mexico. 1818. Greenhouse herbaceous. Syn., *A. vinifolia*.
 — *vestita*. 3. Yellowish-green. October. N. Amer. 1844.
 — *viminatis*. See *Sarcostemma Swartzianum*.

Ascy'rum. (From *a*, not, and *skyros*, roughness; plants not hard to the touch. Nat. ord., *Hypericineæ*.)

All, but one, half-hardy evergreens; cuttings of small shoots, pretty hard; placed in very sandy soil, under a bell-glass, any time during summer; peat and loam; they do well in the open during summer, but require the protection of a frame through the winter.

- A. amplexican'le*. 2. Yellow. August. N. Amer. 1823.
 — *Cruza-Andr'e's*. 2. Yellow. July. N. Amer. 1759. St. Andrew's cross.
 — *hypericoides*. 2. Yellow. August. N. Amer. 1759.
 — *puberulum*. 1. Yellow. July. Georgia. 1806. Half-hardy herbaceous.
 — *stana*. 2. Yellow. August. N. Amer. 1816. St. Peter's Wort.

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 effect-

ing a slow combustion is to bank the burning substance over with earth, leaving only a small orifice, to admit sufficient air to keep up a smouldering fire.

Ashes are usually recommended as a manure most useful to heavy soils. As fertilizers 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 an. 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 (do.)	0.2
Sulphuric acid (combined with lime)	0.2
Phosphoric acid (do.)	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 beet-root.

Ash-tree. *Fraxinus excelsior.*

Asiatic-poison Bulb. *Cri'nium asiaticum.*

Asimina. (A Canadian name, not explained. Nat. ord., *Anonaceæ*.)

A. triloba is a fit companion to such plants as *Daphnes*, *Ill'icium*, etc. Sometimes by seed, but chiefly by layering the branches, towards the end of summer. Peat and loam. Seedlings require protection until of a good size.

A. grandiflora. 3. White. June. Georgia. 1820.
— parviflora. 3. Brown. May. N. Amer. 1806.
— pygmaea. 2. White. N. Amer. 1812.
— triloba. 15 to 30. Dull brown, yellow. May. Pennsylvania. 1736. Syn., *Anona triloba*, B. M. t. 6854. Papaw or custard apple of the United States.

Aspalathus. (From *a*, not, and *spao*, to extract; in reference to the difficulty of extracting its thorns from a wound. Nat. ord., *Leguminosæ*; Tribe, *Genistææ*.)

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. Rare in cultivation.

A. affinis. 3. Yellow. July. Cape of Good Hope. 1822.
— albens. 4. White. July. Cape of Good Hope. 1774. Syn., *A. candidans*.
— arachnoides. Shrubby, erect. Corolla silky.
— araneosa. 3. Yellow. July. Cape of Good Hope. 1795. B. M. t. 829.
— argentea. 2. Yellow. July. Cape of Good Hope. 1759.
— asparagoides. 3. Yellow. July. Cape of Good Hope. 1812.
— astroides. 2. Yellow. July. Cape of Good Hope. 1813.
— callosa. 3. Yellow. July. Cape of Good Hope. 1812. B. M. t. 2329.
— caudicans. See *A. albens*.
— carnossa. 3. Yellow. July. Cape of Good Hope. 1795. B. M. t. 1289.
— capitata. 2. Yellow. July. Cape of Good Hope. 1823.
— chenopoda. 3. Yellow. July. Cape of Good Hope. 1759. B. M. t. 2225.
— cilicaris. 2. Yellow. July. Cape of Good Hope. 1799.
— crassifolia. 2. Yellow. July. Cape of Good Hope. 1800. Andr. Rep. t. 358.
— ericifolia. 2. Yellow. July. Cape of Good Hope. 1789.
— galioides. 2. Yellow. July. Cape of Good Hope. 1817.
— genistoides. 2. Yellow. July. Cape of Good Hope. 1816.
— globosa. 3. Orange. July. Cape of Good Hope. 1802.
— hispidata. See *A. thymifolia*.
— hystrix. 2. Yellow. July. Cape of Good Hope. 1824.
— indica. See *Indigofera aspalathoides*. Wight Icon. t. 332.
— loricifolia. 2. Yellow. July. Cape of Good Hope. 1823. Syn., *A. loricina*.
— lotoides. 2. Yellow. July. Cape of Good Hope. 1816. Syn., *A. quinquefolia*.
— mucronata. See *Viborica armata*.
— multiflora. See *A. thymifolia*.

- A. pedunculata*. 6. Yellow. July. Cape of Good Hope. 1775. B. M. t. 344. Syn., *A. squarrosa*.
 — *quinquefolia*. See *A. lotoides*.
 — *sericea*. 2. Yellow. July. Cape of Good Hope. 1816.
 — *spinosa*. 2. Yellow. July. Cape of Good Hope. 1824.
 — *squarrosa*. See *A. pedunculata*.
 — *subulata*. 2. Yellow. July. Cape of Good Hope. 1789.
 — *thymifolia*. 2. Yellow. July. Cape of Good Hope. 1825. Syns., *A. hispida* and *multiflora*.
 — *uniflora*. 3. Yellow. July. Cape of Good Hope. 1812.

Asparagus. (From *a*, intense, and *sparasso*, to tear; in reference to the strong prickles of some species. Nat. ord., *Liliaceæ*; Tribe, *Asparageæ*.)

A handsome genus of climbing or erect shrubs or herbs, some of which are amongst the most elegant of foliage plants, and are largely used for cutting and as room decorative plants. All warm greenhouse species, unless where otherwise stated; these require a rich sandy soil and plenty of moisture; division. The hardy species require a rich garden-soil, propagated chiefly by seeds and division. *A. officinalis* is well known in our kitchen gardens.

- A. acutifolius*. 2. Whitish-green. Spain. 1640. Evergreen; hardy. Sibth. Fl. Gr. t. 337.
 — *æthiopicus*. 3. White. Cape of Good Hope. 1816. Evergreen shrub. Syn., *A. lanceus*.
 — *ternifolius*. White. August. South Africa. 1872.
 — *africanus dependens*. 4. White. June. Cape of Good Hope. 1819. Evergreen climber.
 — *albus*. 12. White. Spain. 1540. Hardy against a wall.
 — *amarus*. See *A. maritimus*.
 — *aphyllus stipularis*. 4. White. June. South of Europe. 1800. Hardy evergreen climber. Red. Lil. t. 252. Syn., *A. horridus*.
 — *asiaticus*. 3. White. Asia. 1759. Evergreen shrub.
 — *Broussonetii*. 10. May. Canaries. 1822.
 — *capensis*. 4. Green. April. Cape of Good Hope. 1691. Evergreen shrub. Jacq. H. Schœn. t. 266.
 — *Coope'ri*. Whitish. S. Africa. 1862. Climber.
 — *cormorensis*. Very slender. Leaves emerald green. 1885.
 — *cri'spus*. 3. Whitish-green. Summer. Cape of Good Hope. 1792. Jacq. H. Schœn. t. 97. Syns., *A. decumbens* and *fleuosus*.
 — *davuricus*. 3. Green. April. Davuria. 1823. Syn., *A. glycyca'rpus*.
 — *decinata'rus*. 5. Whitish-green. Cape of Good Hope. 1759. Half-hardy.
 — *decu'mbens*. See *A. crispus*.
 — *dependens*. See *A. africanus dependens*.
 — *falcata'rus*. 3. Whitish-green. India. 1792.
 — *falcifo'rme*. See *A. medeloides falcifo'rme*.
 — *fexu'osus*. See *A. crispus*.
 — *glycyca'rpus*. See *A. davuricus*.
 — *grandiflo'rus*. See *A. umbellatus*.
 — *horridus*. See *A. aphyllus stipularis*.
 — *la'nceus*. See *A. æthiopicus*.
 — *larici'nis*. White. May. Cape of Good Hope. 1816.
 — *longiflo'rus*. 3. White. July. Siberia. 1827.
 — *maritimus*. 3. Green. July. France. 1824. Syn., *A. amarus*.
 — *medeloides falcifo'rme*. Greenish-white. S. Africa. 1869. Syns., *A. falcifo'rme*, Bot. Ref. t. 47, and *Myrsiphyllum falcifo'rme*.
 — *Nivenia'nis*. Whitish-purple. May. Cape of Good Hope. 1811.

- A. officinalis*. 4. Greenish-white. August. England. Eng. Bot. ed. 3, t. 1515. Hardy.
 — *pectinata'rus*. Red. Lil. t. 407. See *A. scandens*.
 — *plumo'sus*. White. South Africa. 1876.
 — *na'vus*. South Africa. 1880.
 — *racemosa*. 3. Whitish-green. E. Ind. 1808. Evergreen shrub. Wight Icon. t. 2056.
 — *ramosissimus*. Cream colour. South Africa. 1862.
 — *retrofractus*. 4. White. July. Cape of Good Hope. 1759. Evergreen climber.
 — *arbo'reus*. Gard. 1890, p. 255.
 — *sarmento'sus*. 6. Whitish-green. August. Ceylon. 1810. Evergreen climber.
 — *scandens*. 6. Green. Cape of Good Hope. 1795. Evergreen climber. Bot. Ref. t. 21. Syn., *A. pectinatus*.
 — *Smithia'nis*. Teneriffe. 1529. Evergreen shrub.
 — *Sprengeri*. Natal. Gf. 1890, p. 490.
 — *stipula'ceus*. 4. White. Cape of Good Hope. 1821. Evergreen climber.
 — *subulata'rus*. 3. Cape of Good Hope. 1811. Evergreen shrub.
 — *sybiaticus*. See *A. tenuifolius*.
 — *tenuifolius*. 2. Green. July. Hungary. 1819. Syn., *A. sylvaticus*. Hardy.
 — *tenuissimus*. Foliage light green. South Africa. 1881.
 — *tricarinata'rus*. Red. Lil. t. 451. See *A. verticillatus*.
 — *umbellata'rus*. White. July. Teneriffe. 1828. Herbaceous climber. Syn., *A. grandiflorus*.
 — *umbellulata'rus*. Greenish. Mauritius. Syn., *A. crispus*.
 — *verticillaris*. 2. White. July. Caucasus. 1752. Syn., *A. tricarinatus*. Hardy.
 — *virgata'rus*. 5. Green. South Africa. 1862.

Asparagus (*Asparagus officinalis*) was, by the old gardeners, called *sparage*, and by the modern vulgar, *grass*, or *sparrow-grass*. The small heads are sometimes spoken of as *sprue*.

Varieties.—Those most esteemed at the present time are Conner's Colossal, Giant, and Mammoth Emperor. There are also a few sub-varieties, which derive their names from the place of their growth, and are only to be distinguished for superior size or flavour, which they usually lose on removal from their native place.

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 supply will of course be regulated by the demand, eight square perches will be capable of afford-

ing 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, as sometimes practised, for the purpose of taking up every alternate row for forcing. It thus leaves a permanent crop on the level ground in two rows, at four feet distance. Between these summer crops may be planted, such as French beans, lettuce, spinach, or cauliflowers. Finer heads are to be expected by this wide-row system; but the most complete and neatest way is to line out beds, four and a half feet wide, in which to sow four rows of seeds, one foot apart, as directed above, leaving three-feet alleys. This will be found the best, for small gardens in particular.

Culture in Seed-bed.—If dry weather, the bed should be refreshed with moderate but frequent waterings; and, if sown as late as April, shade is required, by means of branches, old pea-stakes, etc., during the meridian of hot days, until the seeds germinate. 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; other-

wise 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 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 moss. 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 apart. 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 are to be three feet wide. The first season after planting the beds, a crop of radishes may be sown upon them without much 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, and lettuces are there sown or planted in succession for the summer months.

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. We recommend the heads to be allowed to grow about six inches above the ground before they are cut, and then to be cut level with the surface. By this mode, first suggested by Mr. Weaver, the whole shoot is eatable, all risk of injuring other rising shoots is avoided, and the flavour is much superior to that cut when only just rising above the surface. 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, and have the closest heads; those having quick-opening heads, or are small or flat, are never to be left. More are to be selected than would be necessary if each stem would assuredly be fruitful; but, as some of them only bear unproductive blossoms, that contingency must be allowed for. Each chosen shoot must be fastened to a stake, which, by keeping it from injury by winds, etc., more surely insures a crop of seed. The seed is usually ripe in September, when it must be collected, and left in a tub for four or six weeks, for the pulp and husk of the berry to decay, 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.

Aspa'sia. (From *aspazomai*, I embrace; the column embraced by the labellum. Nat. ord., *Orchidææ.*)

Stove epiphytal orchids, best grown in baskets containing sphagnum, peat, and broken crocks, with charcoal; rather dry during winter, and moister when growing.

- A. epidendroïdes*. 1. Whitish-yellow. Panama. 1833. B. M. t. 3962.
- *luna* ta. 1. Green, white, brown. February. Brazil. 1844. Pax. Fl. G. vol. 1, p. 108.
- *tu'tea*. Yellow. March. Guiana. 1838.
- *papilionæcea*. 3. Yellowish, brownish, orange, violet. Costa Rica. 1876.
- *principi'pissa*. Light green, buff. 1888.
- *psittacæna*. Green, brown, purplish. Ecuador. 1878.
- *variegata*. 1. Green and yellowish-red. February. Panama. 1836. B. M. t. 3679.

Aspen. *Po'pulus tre'mula.*

Aspe'rula. Woodruff. (The diminutive of *asper*, rough; in reference to the rough leaves. Nat. ord., *Rubiaceæ.*)

All hardy herbaceous plants, except where otherwise described. Division when growth commences in spring. Seeds; common soil. They do not dislike shade generally. *A. odorata* being especially useful for bare spaces under dense pine trees, etc. *A. trichodes* from seed.

- A. alpi'na*. 1. White. July. Caucasus. 1820.
- *arcadiænsis*. 1. Red. April. Arcadia. 1819. B. M. t. 2146.
- *arista* ta. 1. Yellow. July. South of Europe. 1823.
- *azu'rea setosa*. 1. Pale blue. Caucasus. 1867. Syn., *A. orientalis.*

- A. brevifolia*. 1. Purple. July. Europe. 1825. Half-hardy evergreen trailer.
- *calab'rica*. See *Putoria calab'rica.*
- *crassifolia*. See *A. tomentosa.*
- *cynan'chica*. 1. Pinkish. July. England. Eng. Bot. ed. 3, t. 661.
- *saxa'tilis*. 1. Flesh-coloured. July. Spain. 1821. Syn., *A. pyrenaica.*
- *galio'des*. 1. White. July. South of Europe. 1710.
- *tyra'ica*. 1. White. May. Levant. 1829.
- *hirsu'ta*. 1. White. June. Portugal. 1819. Syn., *A. repens.*
- *hi'rta*. 1. Purple. July. Pyrenees. 1817.
- *inca'na*. Purple. June. Crete. 1823. Sibth. Fl. Gr. t. 11.
- *læviga'ta*. 1. White. June. South of Europe. 1775.
- *longifo'ra*. 1. Yellowish-purple. July. Hungary. 1821.
- *longifo'ria*. 1. Red. July. South of Europe. 1820. Sibth. Fl. Gr. t. 118.
- *monta'na*. 1. Pink. July. Hungary. 1801.
- *ni'tida*. 1. Pink. August. Greece. 1829. Sibth. Fl. Gr. t. 124.
- *odora'ta*. 1. White. June. Britain. Eng. Bot. ed. 3, t. 660. Sweet-scented Woodruff.
- *orienta'lis*. See *A. azurea setosa.*
- *pyrena'ica*. See *A. cynan'chica*, var. *saxatilis.*
- *ri'gida*. 1. Red. July. Greece. 1819. Sibth. Fl. Gr. t. 121.
- *scab'ra*. 1. White. July. Italy. 1824.
- *scutella'ris*. 1. Russia. 1838.
- *supi'na*. 1. Pink. June. Caucasus. 1821.
- *taur'na*. 1. White. April to June. Italy. 1739.
- *tincto'ria*. 1. White, pink. July. Europe. 1764.
- *tomentosa*. 1. Red. July. South of Europe. 1817. Syn., *A. crassifolia.*
- *tricho'des*. 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, etc., 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*, one part *coal-ashes*, and one of *sand*, sifted fine. In a dry place, on a dry day, mix them, and leave a hole in the middle of the heap, as plasterers 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. (From *Asphodelus*, Nat. ord., *Liliaceæ.*)

Nearly allied to *Asphodelus*, but easily distinguished by their erect leafy stems; common

garden-soil. Division, and seeds. *A. lutea*, *liburnica* and *taurica* are especially fine.

- A. brevicaulis*. Yellow, with green veins.
 — *damascéna*. 2. White. Asia Minor.
 — *liburnica*. 2. Yellow. June. South of Europe. 1812. B. C. t. 915. Syn., *Asphodelus capillaris*, Red. Lil. t. 380, and *A. creticus*.
 — *lutea*. 3. Yellow. June. Sicily. 1596. B. M. t. 773. Syn., *Asphodelus luteus*.
 — *siberica*. 2. Pale yellow. May. Siberia. 1829. B. R. t. 1507. Syn., *Asphodelus sibericus*. There is also a form with double flowers.
 — *prolifera*. 1. White. August. Armenia. 1824. Hardy annual. Syn., *Asphodelus proliferus*.
 — *taurica*. 2. White, with green stripes. June. Tauria. 1812. Red. Lil. t. 470. Syn., *Asphodelus tauricus*. The plant in B. C. t. 1102 is not true *A. taurica*.
 — *tenuior*. 2. Yellow. July. Siberia. 1824. Syn., *Asphodelus tenuior*.

Aspho'delus, Asphodel. (From *a*, not, and *sphallo*, to supplant; the stately flowers not easily surpassed. Nat. ord, *Liliaceæ*.)

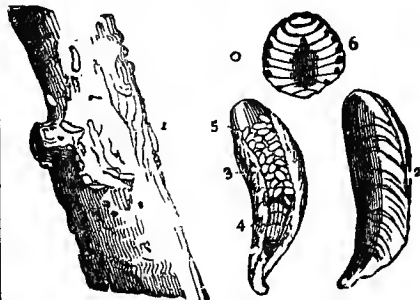
Useful, hardy herbaceous perennials, except where otherwise specified. Division and seeds, which may be raised from seed; common soil. *A. intermedium* requires the protection of a cold pit in winter.

- A. aestivus*. See *A. fistulosus*, var. *tenuifolius*.
 — *albus*. See *A. ramosus*, var. *albus*.
 — *asiaticus*. White. June. Levant. 1824.
 — *capillaris*. See *Asphodeline liburnica*.
 — *clavatus*. See *A. fistulosus*, var. *clavatus*.
 — *comosus*. 2. White, green. N. W. Himalaya. 1887.
 — *creticus*. See *Asphodeline liburnica*.
 — *fistulosus*. 1½. White. July to August. South of Europe. 1596. B. M. t. 984.
 — *clavatus*. 1. White. July. E. Ind. 1808. Stove annual.
 — *tenuifolius*. 2. White. July. Spain. 1820. Syn., *A. aestivus*.
 — *intermedium*. See *A. ramosus*, var. *intermedium*.
 — *luteus*. See *Asphodeline lutea*.
 — *microcarpus*. See *A. ramosus*, var. *microcarpus*.
 — *prolifera*. See *Asphodeline prolifera*.
 — *ramosus*. 4. White. April. South of Europe. 1829.
 — *albus*. 2. White. April. South of Europe. 1820.
 — *intermedium*. 2. White. July. Canaries. 1822. Half-hardy perennial.
 — *microcarpus*. Dalmatia. 1831.
 — *sibiricus*. See *Asphodeline lutea*, var. *sibirica*.
 — *tauricus*. See *Asphodeline taurica*.
 — *tenuior*. See *Asphodeline tenuior*.
 — *Villarsii*. 2. White. Eastern France. 1888.

Aspidio'tus conchifor'mis. Mussel Scale. This infests the bark of Apple and Pear trees. It receives the name of Mussel Scale from the form of the scale which covers the mother Coccus and her eggs; it is transversely wrinkled and of rich dark brown colour, paler at the narrow end.

About May the eggs hatch and the young Cocci spread about the tree, chiefly selecting the younger branches; it is just previous to this that the insect may

be best dealt with. The best plan to get rid of this pest, is to scrape off thin slices of the infested bark and burn them, afterwards brushing the tree over with paraffin, and scrubbing it with a



hard brush. Our illustration, for which we are indebted to the *Gardener's Chronicle*, represents:—Fig. 1, a portion of a branch infested with Mussel Scale, natural size; 2, a scale seen from above, magnified; 3 to 5, the same seen from below, containing a mother Coccus (4) and her eggs (5); 6, the insect magnified—the small *o* by its side shows the natural size.

Aspidi'stra. (From *aspidiseon*, a little round shield; shape of flower, or probably, in reference to the mushroom-shaped stigma by which *Apidistreae* are characterized. Nat. ord., *Liliaceæ*.)

Greenhouse evergreen perennials; useful ornamental foliaged plants for rooms and corridors; suckers; loam, leaf-soil, and sand-soil. It is questionable whether these would not all be hardy in the south of England.

- A. elatior* and *elatior variegata*. See *Plectogyne variegata*.
 — *lurida*. 1. Purple. July. China. 1832. B. R. t. 628.
 — *punctata*. 1. Purple. March. China. B. R. t. 977.

Aspidium. (From *aspidion*, a little buckler; in allusion to the form of the indusium. Nat. ord., *Filices—Polypodiaceæ*.)

Spores or seed, and division of the roots, chiefly the latter; doing so before they begin to grow freely. 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. acrostichoides*. 2. N. America. Syn., *Polystichum acrostichoides*.
 — *grandiceps*. Tips of frond crested. Garden variety.
 — *incisum*. Pinnæ acute.
 — *aculeatum*. 1 to 3. Cosmopolitan. A variable species.
 — *alpinum*. 1. South of Europe. 1825.

- A. angula*'re. 1. Cosmopolitan. The varieties of this in cultivation are very numerous.
 — *grā n̄diceps*. A narrow form, with crested tips.
 — *atoma*'rium. 1. N. America. 1820.
 — *bulbi*'ferum. 1. N. America. 1638. Reproduced by buds formed on the fronds.
 — *denta*'tum. 1. June. Wales.
 — *d̄ilata*'tum. 2. June. Britain.
 — *dumeta*'sum. 1. July. Britain.
 — *fra*'gile. 1. July. Britain.
 — *Hadle*'ri. April. Switzerland. 1824.
 — *irri*'gium. 2. July. Britain.
 — *Lonchi*'tis. 1 to 2. Britain. Syn., *Polystichum Lonchitis*.
 — *monta*'num. 1. June. Switzerland. 1819.
 — *muni*'tum. 1 to 2. California. Syn., *Polystichum munitum*.
 — *r̄gium*. 1. July. Britain.
 — *rh̄t̄t̄eum*. $\frac{1}{2}$. June. Britain.

GREENHOUSE.

- A. æmulum*. 2. July. Madeira. 1779.
 — *arista*'tum. 1 to 2. Japan to Australia. Syn., *Polystichum aristatum*.
 — — *confi*'solum. Fronds finely cut.
 — — *variega*'tum. Rachis striped with a lighter green.
 — *cap̄ense*. 1 to 2. June. Cape of Good Hope. Syn., *A. coriaceum* and *Polystichum capense*.
 — *falcine*'llum. 1. May. Madeira. Syn., *Polystichum falcinellum*.
 — *fenicula*'ceum. 1 to 2. Sikkim. Syn., *Polystichum feniculaceum*.
 — *frondo*'sum. $\frac{1}{2}$. Madeira. Syn., *Polystichum frondosum*.
 — *laserpitio*'livium. 2. Japan. Syn., *Lastrea Standishii* and *Polystichum laserpitiofolium*.
 — *lepidocaulon*. 1. Japan. Syn., *Polystichum lepidocaulon*.
 — *mohrioides*. 1. Patagonia. Syn., *Polystichum mohrioides*.
 — *pu*'ngens. 2 to 3. Cape Colony. Syn., *Polystichum pungens*.
 — *tr̄pter*'on. 2 to 3. Japan. Syn., *Polystichum tripterum*.
 — *va*'rium. $\frac{1}{2}$ to 2. Japan. Syn., *Lastrea varia* and *Polystichum varium*.

STOVE.

- A. ala*'tum. July. E. Indies.
 — *ama*'bile. 2. Ceylon. Syn., *Polystichum amabile*.
 — *anom*'alum. 3 to 5. Ceylon. Syn., *Polystichum anomalum*.
 — *auricula*'tum. 1 to 2. India. Syn., *A. ocellatum* and *Polystichum auriculatum*.
 — — *le*'ntum. Pinnæ lobed. India.
 — — *margina*'tum. Texture more coriaceous.
 — *cicuta*'rium. 2. July. Jamaica. 1820.
 — *crista*'tum. See *Nephrodium cristatum*.
 — — *Clintonia*'num. See *Nephrodium cristatum Clintonianum*.
 — *deci*'rens. 2. May. Isle of Luzon.
 — *exalta*'tum. 4. July. Jamaica. 1798.
 — *falca*'tum. 1 to 3. E. Asia. Syn., *Cyrtomium falcatum*.
 — — *caryoti*'deum. Syn., *Cyrtomium caryotideum*.
 — — *Fortu*'nei. Narrower than type. Syn., *Cyrtomium Fortunei*.
 — *flexu*'m. 2 to 3. Juan Fernandez. Syn., *Polystichum flexum*.
 — *gra*'nde. May. Isle of Luzon.
 — *heracleio*'livium. June.
 — *Hoocke*'ri. June. E. Indies. Syn., *A. nephrodioides* and *Cycloodium Hookeri*.
 — *indivi*'sum. 2. July. Jamaica. 1824.
 — *lati*'folium. May. Isle of Luzon.
 — *macrophy*'llum. 3. August. W. Indies. 1816.

- A. meniscio*'des. 3 to 5. W. Indies. Syn., *A. confertum* and *Cycloodium meniscioides*.
 — *mucrona*'tum. 1 to 2. W. Indies. Syn., *Polystichum mucronatum*.
 — *pa*'pens. 2. July. Jamaica. 1784.
 — *pectina*'tum. 1. July. W. Indies. 1826.
 — *pu*'ngens. 2 to 3. Cape Colony. Syn., *Polystichum pungens*.
 — *repa*'ndum. 2. Island of Luzon.
 — *rhizophy*'llum. $\frac{1}{2}$. July. Jamaica. 1820.
 — *semicorda*'tum. 2 to 4. Tropical America. Syn., *Polystichum semicordatum*.
 — *singaporia*'num. April. Malacca.
 — *triangu*'lum. 1. W. Indies. Syn., *Polystichum triangulum*.
 — *trifolia*'tum. 2. July. W. Indies. 1769.
 — — *heracleio*'livium. More cut than the type.
 — *vivipa*'rum. 2. July. Jamaica. 1824. Syn., *A. trapezoides*.

Asple'nium. Spleenwort. (From *a*, not, and *splen*, spleen; referring to its supposed medicinal properties. Nat. ord., *Filices*.)

For general management, see ASPIDIUM and FERNS. In propagating from the spores on the back of a frond, prepare a pot well-drained, with some peaty soil; shake the spores all over it; cover with a square of glass; and set the pot in a shady place until the plants are up.

- G = greenhouse species; S = stove species.
A. absci'ssum. 1. Trop. America. Syn., *A. firmum*. S.
 — *acumina*'tum. 2. Sandwich Islands. Syn., *A. polyphyllum*.
 — *acu*'tum. 2. April. Teneriffe. 1818.
 — *adia*'tum-n̄grum. 1. August. Britain. Eng. Bot. ed. 3, t. 1874.
 — — *acu*'tum. 1. Ireland. Eng. Bot. ed. 3, t. 1875.
 — — *caudi*'folium.
 — — *crista*'tum. Crested. 1881.
 — — *grā n̄diceps*. $\frac{1}{2}$ to 1. Crested.
 — — *cazphy*'llum. $\frac{1}{2}$. Segments acute.
 — *affi*'ne. 2. Mascaren Islands. Syn., *A. spathulitum*. S.
 — *ala*'tum. S. America. 1864. S.
 — *alisma*'folium. 1. Philippines. Syn., *Anisogonium alismæfolium*.
 — *a*'ternans. $\frac{1}{2}$. India. Syn., *A. Dalhousie*. G.
 — *alterna*'tum. 1. July. Australia. 1824.
 — *alterni*'folium. See *A. germanicum*.
 — *ambi*'guum. 1. W. Indies.
 — *amboi*'nse. 1. S. Sea Islands. 1887.
 — *angusti*'folium. 1. July. N. America. 1812.
 — *anisophy*'llum. 2. S. Africa. G.
 — *ap̄icidens*. See *A. Vieillardii*.
 — *arborescens*. 3 to 4. Mauritius. 1826. Syn., *Diplazium arborescens*. S.
 — *Arno*'ttii. 1. Sandwich Islands. 1877. Syn., *A. diplazioides* and *Diplazium Arnottii*. G.
 — *aspidio*'des. 2. Trop. America. Syn., *A. multisectum*. G.
 — *athyri*'um. 2. August. N. America. 1823.
 — *attenua*'tum. 1. Queensland. G.
 — *av*'reum. See *A. Geterach*, var. *avreum*.
 — *auricula*'tum. 2. Trop. America. 1820. S.
 — *auri*'tum. $\frac{1}{2}$ to 1. Trop. America. S.
 — *australa*'sicum. See *A. nidus*.
 — *Bapti*'sti. 1. S. Sea Islands. 1880. S.
 — *Belange*'ri. 2. Malay Peninsula. Syn., *A. Veitchianum* and *Darea Belangeri*. S.
 — *biauri*'tum. 1. July. W. Indies. S.
 — *biparti*'tum. 2. August. Jamaica. 1820. S.
 — *bisc*'ctum. 2. July. Jamaica. 1821. S.
 — *brachy*'pterum. $\frac{1}{2}$. Madagascar. Syn., *Darea brachypterum*. S.
 — *brazili*'ense. 1. July. Brazil. 1822. S.
 — *brevis*'orum. 3. S. Africa. Syn., *Athyrium brevisorum*. S.

- A. bulbiferum*. 1 to 2. July. New Zealand. 1820. Syn., *A. lazum*. G.
- — *Fabianum*. Sori submarginal. Syn., *A. Fabianum*.
- *calophyllum*. June. Island of Luzon. S.
- *Campbellii*. G. C. v. 24, p. 7.
- *canariense*. July. Canary Islands. 1824. G.
- *caudatum*. Polynesia. G.
- *Ceterach*. $\frac{1}{2}$ to $\frac{3}{4}$. Britain. Syn., *Ceterach officinarum*. Eng. Bot. ed. 3, t. 1883.
- — *aurum*. Canary Islands, Syns., *A. aureum* and *Ceterach aureum*.
- *ciudadum*. 1. August. W. Indies. 1820. S.
- *Colensoi*. 1 to 2. New Zealand. Syn., *A. Hookerianum*. G.
- *compressum*. 2 to 3. St. Helena. S. or G.
- *constmale*. Chili. Half-hardy.
- *contiguum*. 2. Sandwich Islands. G.
- — *flsuum*. S. Sea Islands. 1880.
- *crenatum*. 2. N. Europe.
- *cultrifolium*. 1. W. Indies. 1820. S.
- *cuneatum*. 1. W. Indies. 1832. S.
- *Dalhouisia*. See *A. alternans*.
- *decussatum*. 3 to 6. Polynesia. See *Anisogonium decussatum*. S.
- *denticulatum*. 1. W. Indies. 1820. G.
- *dentes*. S. Africa. 1790. G.
- *depressum*. 1. August. S.
- *difforme*. Fronds deep green. New Zealand. 1867. G.
- *dumidum*. September. W. Indies. 1827. S.
- *diversifolium*. 2 to 4. Norfolk Island. Syns., *A. diversifolium* of some gardens, and *Darea dimorpha*. G.
- *diplaziodites*. See *A. Arnottii*.
- *diversifolium*. See *A. dimorphum* and *A. maximum*.
- *ebenum*. 1. July. N. America. 1779.
- *elegantulum*. Japan.
- *elongatum*. June. Malacca. 1840. S.
- *erosum*. June. W. Indies. S.
- *esculentum*. 5 to 9. India. 1822. Syn., *Anisogonium esculentum*. S.
- *extensum*. 1 to 2. Andes of Columbia and Peru. G.
- *falcatum*. 1. Polynesia. 1825.
- *fejeeense*. 2. Fiji. S.
- *fernandezianum*. Montevideo. 1869. G.
- *ferulaeum*. $\frac{1}{2}$. Columbia. S.
- *filicoides*. One-twelfth. New Grenada. 1881. S.
- *filix-femina*. 1 to 3. Britain. Syn., *Athyrium filix-femina*. The varieties of this species are endless; the best are: *acrocladon*, *acuminatum*, *apiculatum*, *Applebyanum*, *Barnesii*, *calothrix*, *contortum*, *corona*, *corymbiferum*, *crispum*, *dissertatum*, *Elworskii*, *Friedlae*, *Friselicia*, *grandiceps*, *Jonesii*, *mini-num*, *Mooresii*, *multifidum*, *pannosum*, *plumosum*, *Pritchardii*, *ramosum*, *scopulorum*, *subulatum*, and *Victoriae*.
- *flsuum*. S. Europe. 1825.
- *flabellifolium*. 1. July. Australia. 1820. G.
- — *maius*. Larger.
- *flaccidum*. 1 to 3. New Zealand. Syns., *A. odontites* and *Darea flaccida*.
- *fontanum*. 1. July. England. Eng. Bot. ed. 3, t. 1872. Syn., *A. Halleri*.
- — *refractum*. Pinnae larger, reflexed.
- *formosum*. 1. W. Indies. 1822. S.
- *fragrans*. 1. August. Jamaica. 1793. S.
- — *feniculaeum*. Segments narrower.
- *Franconis*. 1 to 3. Mexico. Syn., *Diplazium Franconis*. S.
- *furcatum*. 1 to 2. Tropics of both hemispheres. Syn., *A. praemorsum*. S.
- *Gardneri*. $\frac{1}{2}$. Ceylon. 1873. S.
- *germanicum*. $\frac{1}{2}$. N. Europe. Eng. Bot. ed. 3, t. 1881. Syn., *A. alternifolium*.
- *Goringianum pectinatum*. See *A. macrocarpum*.
- *grandifolium*. 3 to 5. Trop. America. 1793. Syn., *Diplazium grandifolium*.
- A. Grevillei*. 1. India. S.
- *Halleri*. See *A. fontanum*.
- *Hemionitis*. $\frac{2}{3}$. S. Europe. Syn., *A. palmatum*.
- — *crispatum*. Crested and tasselled. Madeira. 1864. Syn., *A. palmatum cristatum*.
- — *multifidum*. Azores.
- *heterocarpum*. 1 to 3. S. E. Asia. S. or G.
- *horratum*. 1884.
- *incisum*. 1. Japan. G.
- *javanicum*. See *Allantodia Brunoniana*.
- *laetum*. W. Indies. S.
- *laetum*. W. Indies. S.
- *Laffanum*. Bermuda. 1880.
- *lanceolatum*. 1. W. Europe. Eng. Bot. ed. 3, t. 1873.
- — *crispatum*. Margins curled.
- — *micradon*. Very finely toothed.
- *laevatum*. 1. Himalayas. Syns., *A. subsinuatum* and *Diplazium lanceum*. G.
- *laserpitifolium*. 1 to 5. Polynesia. G.
- *lineatum*. 1 to 2. Mauritius. S.
- *longiorum*. New Grenada. 1881. S.
- *longissimum*. 2 to 9. Malacca. 1840. S.
- *lunulatum*. $\frac{1}{2}$ to 2. Tropics of both Hemispheres. Syn., *A. erectum*. S.
- *macrocarpum*. 1 to 3. Himalayas. G. Syn., *A. Goringianum pictum*.
- *macrophyllum* of some gardens. See *A. nitens*.
- *marianum*. 1. Britain. Eng. Bot. ed. 3, t. 1876. Amongst the many varieties of this may be mentioned: *coronans*, *crenatum*, *mirabile*, *plumosum*, *ramo-plumosum*, *ramosum*, *sub-bipinnatum*, and *Thomsonae*.
- *maximum*. 4. N. India. Syns., *A. diversifolium* and *Diplazium decurrens*. S.
- *melanocaulon*. 1. N. America. 1812. S.
- *Michauxii*. 2. N. America. 1823.
- *monanthemum*. 1. S. Africa. 1790. G.
- *montanum*. 1. N. America. 1812. G.
- *multisetum*. See *A. aspidioides*.
- *myriophyllum*. Mexico. 1861. Syn., *A. flabellulatum*.
- *ni dus*. 2. India. 1820. Syn., *A. musca*.
- — *australe sicum*. Australia. Syn., *Thamnopteris australasicum*.
- *nitens*. $\frac{2}{3}$. Mauritius. Syn., *A. macrophyllum* of gardens. S.
- *nitidum*. 2 to 3. India. G.
- *noxae-caledoniae*. New Caledonia. 1866. G.
- *obtusatum*. 1. New Zealand, and Australia. G.
- — *difforme*. Pinnae cut to the rachis.
- — *laevatum*. W. Indies. G.
- *obtusifolium*. W. Indies. 1838. S.
- *obtusidulum*. New Hebrides. 1861. S.
- *oligophyllum*. Brazil. 1841. S.
- *otites*. Tropical America. 1841. S. A form of *A. pulchellum*.
- *oxyphyllum*. 1 to 2. Himalayas. Syns., *Athyrium oxyphyllum* and *Lastrea eburnea*. G.
- *paleaceum*. Australia. 1879. S.
- *palmatum*. See *A. Hemionitis*.
- *persicifolium*. Island of Luzon. S.
- *petraeche*. $\frac{1}{2}$. France. 1819.
- *pinnaeum*. Ic. Pl. t. 222. See *A. trilobum*.
- *pinnatifidum*. $\frac{1}{2}$. Pennsylvania. G.
- *planicaule*. 1. Himalayas. 1841. G.
- *plantaginum*. 1. W. Indies. 1819. Syn., *Diplazium plantagineum*. S.
- *polyodon*. New Zealand. 1843. G.
- *polyphyllum*. See *A. acuminatum*.
- *praemorsum*. See *A. furcatum*.
- *pulchellum*. $\frac{1}{2}$. Tropical America. S.
- *pulchrum*. Jamaica. S.
- *pumilum*. 1. W. Indies. 1823. S.
- *rachirrhizon*. Tropical America. Syn., *A. rachirrhizon*, S.

- A. radicans*, 3 to 6. Tropical America. Syn., *A. giganteum*, *Diplazium radicans*, and *D. umbrosum*. S.
- *resc'tum*. 1. Mauritius. 1820. S.
- *rhizo'phorum*. 1 to 2. Tropical America. S.
- *rhizophy'lum*. 1. N. America. 1680. G.
- *myriophy'lum*. Broader.
- *rutafol'ium*. 1. Cape Colony. Syn., *A. prolongatum* and *Darea rutafolia*. G.
- *ruta-muraria*. †. Britain. Eng. Bot. ed. 3, t. 1880.
- *salicifol'ium*. 1. W. Indies. G.
- *salicinum*. 1. E. Indies. 1839. G.
- *Sandersoni*. †. Natal. 1880. S.
- *scandens*. 1. Sumatra. 1887. S.
- *schizodon*. See *A. Vieillardii*.
- *Schku'rii*. 3. Ceylon. Syn., *Diplazium Schku'rii*. S.
- *scolopendroides*. Island of Leyte. 1840. S.
- *Sesoi*. †. Tyrol.
- *septentrionalis*. 1. Britain. Eng. Bot. ed. 3, t. 1882.
- *serratum*. 2. August. W. Indies. 1793. S.
- *serrulatum*. June. India. S.
- *Shepherdii*. 1 to 2. S. America. Syn., *Diplazium Shepherdii*. G.
- *inaequilaterum*. Pinna unequal-sided.
- *spinulosum*. 1. Amer. Syn., *Athyrium spinulosum* and *Cystopteris spinulosa*. G.
- *splendens*. 1. Cape Colony. G.
- *stria'tum*. 1. W. Indies. 1793. S.
- *sulcatum*. July. W. Indies. 1827. S.
- *stylaticum*. 2. India. S.
- *thelypteroides*. 1. N. Amer. 1823. Syn., *Athyrium thelypteroides*.
- *Thwaitesii*. 1. Ceylon. Syn., *Diplazium Thwaitesii*. S.
- *trichomanes*. †. Britain. Eng. Bot. ed. 3, t. 1878.

Varieties of this are: *cristatum*, *incisum*, *multifidum*, and *ramosum*.

- *trilobum*. †. S. Brazil. Syn., *A. parvulum*.
- *umbrosum*. 3 to 5. Madeira to Himalayas. Syn., *Allantodia australe* and *Athyrium umbrosum*. G.
- *varians*. †. Himalayas. G.
- *Vieillardii*. New Caledonia. 1871. Syn., *A. apicidens* and *A. schizodon*. S.
- *jacile*. †. New Caledonia. 1881. S.
- *viride*. 1. Britain. Eng. Bot. ed. 3, t. 1877.
- *vittiferme*. Island of Luzon. Syn., *A. sundense*. S.
- *viriparum*. 1. Mauritius. 1820. S.
- *vulcanicum*. 1 to 3. Malay Islands. Syn., *A. heterodon*. S.
- *zamaefolium*. 2. Caraccas. 1820. S.
- *zeylanicum*. 1. Ceylon. Syn., *Diplazium zeylanicum*. S.

Asprella. (Diminutive of *asper*, rough. Nat. ord., *Gramineæ*.)

A. hystrix. Hardy annual. Wien. Gart. Zeit. 1889, p. 228, f. 45.

Assam Tea. *The'a assame'nsis*.

Assonia. See *Do'mbeya*.

Astartea. (A classical name, after *Astarte*, a goddess of the Phœnicians and Syrians, called in Scripture *Ash-taroth*. Nat. ord., *Myrtaceæ*.)

A pretty greenhouse evergreen shrub. Cuttings of small shoots, half-ripe, in sandy soil, under a bell-glass, and kept shaded for a time; sandy loam and peat.

A. fasciculata. 6 to 9. White. May. West Australia. 1830.

Astelia. (From *astelos*, wanting a

pillar; in allusion to its having no stem or trunk. Nat. ord., *Liliaceæ*; Tribe, *Dracœnæ*.)

Rare greenhouse tufted perennials, with long grass-like, hairy leaves. Divisions in spring. Peat and loam, about half and half.

- A. Banksii*. Greenish. New Zealand. Hort. Vanh. t. 5.
- *bivittata*. New Zealand. 1864.
- *Cunninghamii*. Green. February. North Island, New Zealand. B. M. t. 5175. This species might prove hardy in the South of England.
- *Solanarii*. Greenish. New Zealand. 1864. B. M. t. 5503.

Astelma. See *Heli'pterum*.

Astephanus. (From *a*, without, and *stephanos*, a crown; in reference to the stamens. Nat. ord., *Asclepiadaceæ*).

Greenhouse twining evergreen plants; division and cuttings in sandy soil in heat; peat, leaf-soil, and sandy loam.

- A. linearis*. 4. White. July. Cape of Good Hope. 1816.
- *triflorus*. 4. White. July. Cape of Good Hope. 1816.

Aster. 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., *Compositæ*; Tribe, *Asteroideæ*.)

To this family we are indebted for many of our autumn ornaments in our flower-borders. The greenhouse species are evergreen shrubs, propagated by cuttings, under a hand-glass, in sandy peat, and flourishing in peat and loam. The hardy species are deciduous herbaceous plants, propagated by division, and flourishing in common garden-soil.

- A. a'cris*. 2. Lilac. August. Central Europe. 1731. Syn., *A. dracunculoides*, *hyssofolius*, *linifolius*, and *punctatus*.
- *aculeatus*. See *Olearia ramulosa*.
- *acuminatus*. 2. Pale red. September. N. America. 1806. B. M. t. 2707.
- *alpinus*. 1. Purple. June. Europe. 1658. B. M. t. 199.
- *flor'eb'udo*. 1. White. July. Europe. 1828.
- *ramosus*. 1. Blue. June. Europe.
- *speciosus*. A fine large flowered variety.
- *altai'cus*. 1. Blue. June. Siberia. 1804. Syn., *A. angustifolius*. Jacq. H. Schœnb. t. 370.
- *alwart'ensis*. B. M. t. 2321. See *Erigeron pulchellum*.
- *am'ellus*. 2. Purple. August. Italy. 1596. B. R. t. 340. Italian starwort. Syn., *A. Albus*, B. R. t. 1656, *amelloides*, and *Ibericus*.
- *angustifolius*. 2. Pale blue. August. South of Europe. 1596.
- *bessara'bicus*. Purple. September. Russia. 1834.
- *amethyst'us*. 3. Bright lilac. October. United States. Syn., *A. bostoniensis*.
- *aragone'nsis*. 1. Blue. June. Spain. 1826. Syn., *A. lusitanicus*.
- *argophy'lus*. B. M. t. 1563. See *Olearia argophylla*.
- *azur'eus*. 3. Violet. United States.
- *bellidia'strum*. 1. White. June. Austria. 1870. Syn., *Bellidiastrum Micheltii* and *Doronicum Micheltii*.

- A. bicolor*. 3. Changing from white to purple.
Bigelo'vii. 2. Purple, yellow. Summer. Colorado. 1878. Hardy. Syn., *A. Townshendii*. B. M. t. 6430.
- *cabul'icus*. See *Microglossa albescens*.
 — *canescens*. 2. Violet. September. N. America. 1812. Syn., *Diplopappus incanus*. B. M. t. 3382.
- *canus*. 2. Purple. August. Hungary. 1816.
 — *carolinianus*. 3. Purple. September. Carolina.
- *caucasicus*. 1. Purple. July. Caucasus. 1804.
 — *Chapmanii*. 4. Bright blue. United States.
 — *chinensis*. See *Callistephus hortensis*.
 — *chrysocephalus*. White.
 — *concolor*. 1. Purple. October. N. America. 1759.
- *conyzoides*. See *Felicia angustifolia*.
 — *cordifolius*. 2. Blue. July. N. America. 1759. B. R. t. 1597.
- *coronopifolius*. Yellow. N. America. 1878. Syn., *Dieteria coronopifolia*.
 — *corymbosus*. 2. White. October. N. America. 1765. B. R. t. 1532. Syn., *A. divaricatus*.
- *Curtisii*. 2. Bright lilac. United States.
 — *cymbul'aria*. 2. White. September. S. Africa. 1786. Greenhouse.
- *dahuricus*. 2. Pale blue. Central Siberia.
 — *desertorum*. 2. Blue. July. Siberia. 1820.
 — *diffusus*. 2. White. October. N. America. 1777. Syn., *A. pendulus* and *recurvatus*.
 — *diplostephioides*. 1. Lavender blue. Alpine region of Himalayas. 1884. B. M. t. 6718.
- *Drummondii*. 3. Pale lilac. United States.
 — *dumosus*. 3. White. October. N. America. 1734. Syn., *A. coridiifolius*, *foliosus*, and *fragilis*.
- *ericoides*. 3. White. September. N. America. 1758. Syn., *A. pilosus*.
 — *erubescens*. See *Olearia myrsinoides*.
 — *exasperatus*. See *Olearia ramulosa*.
 — *filifolius*. 3. White. May. South Africa. 1812. Greenhouse.
- *floribundus*. 4. Purple. September. N. America.
 — *glauces*. 2. Bright lilac. United States.
 — *gracilis*. 1. Green. August. N. America.
 — *graminifolius*. See *Erigeron hyssopifolius*.
 — *grandiflorus*. 2. Blue. November. N. America. 1720. B. M. t. 273.
- *gymnoccephalus*. 1-2. Rose-purple. Mexico. 1878. Syn., *Aplopappus gymnoccephalus*.
 — *He'rneyi*. 2. Lilac. Massachusetts.
 — *heterophyllus*. 3. White. August. N. America. 1811.
- *hispidus*. 1. Lilac. September. S. Africa. 1804.
- *incisus*. 2. Blue. August. Siberia. 1818.
 — *infl'rmis*. 1. White. September. N. America. 1899. Syn., *A. humilis*.
- *innuloides*. See *Erigeron multiradiatus*.
 — *ju'nceus*. 4. Flesh-coloured. September. N. America. 1758. B. R. t. 1614.
- *la'vis*. 2. Blue. September. N. America. 1758. B. R. t. 1500. Syn., *A. cyaneus*, *laevigatus*, *politus*, and *rubricaulis*.
- *linarifolius*. 1. Pale blue. September. N. America. 1899. Syn., *A. pulcherrimus* and *rigidus*, and *Diplopappus linarifolius*.
- *linosyris*. 1. Bright yellow. Autumn. Europe. Eng. Bot. ed. 3, t. 777. Syn., *Chrysocoma linosyris* and *Linosyris vulgaris*.
- *longifolius*. 3. White. October. N. America. 1798. B. R. t. 1614. Syn., *A. cestivus*, *bicolor*, and *laxiflorus*. There is also a variety, *formosus*.
 — *lyrat'us*. B. M. t. 1609. See *Olearia stellulata*.
- A. macrophyllus*. 2. White. August. N. America. 1739. Syn., *A. Schreberi*.
- *marginatus*. 1. Violet. July. New Grenada. 1827.
- *meser*. 2. White. August. 1812. Syn., *A. myrtifolius*.
- *multiflorus*. 3. White. September. N. America. 1732.
- *myrsinoides*. See *Olearia myrsinoides*.
 — *memorabilis*. 1. Lilac. August. N. America. 1778.
- *no've a'nglica*. 6. Purple. September. N. America. 1710. B. R. t. 183. Syn., *A. amplexicaulis*, *concinna*, and *spurius*.
- *ruber*. 6. Red. July. N. America. 1812.
- *no'vi be'lgii*. 4. Purple. September. N. America. 1710. Syn., *A. adulterinus* (B. R. t. 1571), *eminens*, *laxus*, *lucurians*, *mutabilis*, *praeratus*, and *serotinus*.
- *oblongifolius*. 2. Lilac. July. N. America. 1797. Syn., *A. graveolens*.
- *obtusatus*. 4. White. June. S. Africa. 1793.
- *paludosus*. 3. Blue. August. N. America. 1784.
- *paniculatus*. 4. Blue. September. N. America. 1640. Syn., *A. bellidiflorus*, *lanccolatus*, *salignus*, *sanguineus*, *simplex*, and *strictus*.
- *patens*. 2. Purple. October. N. America. 1773. Swt. Fl. Gard. t. 234.
- *patulus*. 3. Lilac. September. Canada and United States. Syn., *A. abbreviatus* and *pallens*. B. R. t. 1509.
- *pauciflorus*. 1. White. September. Missouri.
- *peregrinus*. 1. Blue. July. N. America.
 — *plantaginifolius*. See *Sericocarpus conyzoides*.
- *plurifolius*. 2. White. June. S. Africa. 1759. Syn., *A. fruticulosus*, B. M. t. 2236.
- *polyphyllus*. 3. White. September. N. America.
 — *prenanthoides*. 3. Blue. September. N. America. 1821.
- *ptarmicoides*. 1-2. White. N. America.
 — *pulchellus*. See *Erigeron pulchellus*.
 — *punctatus*. 3. Blue. September. N. America. 1710. Syn., *A. blandus*, B. C. t. 959.
- *demissus*. 2. Blue. September. 1820. Garden variety.
- *putens*. 4. Lilac. N. America. Hardy.
 — *pyreneus*. 2. Violet. July. Pyrenees. Syn., *A. praecox*.
- *radula*. 2. White. October. N. America. 1785. Syn., *A. biflorus* and *nudiflorus*.
- *ramosus*. 1. Purple, red. June. N. America. 1816.
- *reflexus*. B. M. t. 884. See *Felicia reflexa*.
 — *reticulatus*. 3. White. July. N. America. 1812.
- *sagittifolius*. 2. Flesh-coloured. June. N. America. 1760.
- *salicifolius*. 6. Flesh-coloured. September. N. America. 1760. Syn., *A. rigidulus*.
- *salsuginosus*. B. M. t. 4940. See *Erigeron salsuginosus*.
- *scorzonerifolius*. 1. Pale purplish. California. Hardy.
- *sericeus*. 3. Bright violet. August. United States. 1786. Greenhouse. Syn., *A. argenteus* and *montanus*.
- *sessiliflorus*. 5. Red. October. N. America. 1700.
- *Sho'rtii*. 3. Bright lilac. October. United States.
 — *sibiricus*. 2. Blue. August. Siberia. 1768.
 — *sikkim'ensis*. 3. Bluish-purple. October. Sikkim Himalayas. 1850. B. M. t. 4657.

- A. solidaginoïdes*. See *Sericocarpus solidagineus*.
 — *spectabilis*. 2. Blue. August. N. America. 1777. B. R. t. 1527. Syn., *A. elegans*.
 — *squarrosus*. 2. Blue. June. N. America. 1801.
 — *stellulatus*. See *Olearia stellulata*.
 — *subulatus*. 2. Pale blue. September. N. America.
 — *surculosus*. 2. Purple. August. N. America.
 — *tanacetifolius*. 1. Purple. July. New Mexico. 1851. Syn. *Machæranthera tanacetifolia*, B. M. t. 4624.
 — *tataricus*. 1. White. August. Tartary. 1818.
 — *tenuiflorus*. 1. Blue. August. S. Africa. 1769. Greenhouse biennial. B. M. t. 33.
 — *tenuifolius*. 3. White. August. N. America. 1723. Syns., *A. flexuosus* and *sparsiflorus*.
 — *Thomsonii*. 1-3. Whitish. W. Himalayas.
 — *tomentosus*. See *Olearia dentata*.
 — *tortifolius*. 1. Purple. September. N. America.
 — *Tradescantii*. 3. White. August. N. America. 1633. Syn., *A. artemisiiflorus*.
 — *trinevris*. 2. White. August. S. France. 1818.
 — *Tripolium*. 2. Blue. August. Shores of Europe. Eng. Bot. ed. 3, t. 776. Syns., *A. panonicus* and *Tripolium vulgare*.
 — *turbineflorus*. 2. Bright lilac. October. United States.
 — *umbellatus*. 2. White. August. N. America. 1759. Syns., *A. amygdalinus* and *Diplopappus umbellatus*.
 — *undulatus*. 3. Purple. September. N. America. 1699.
 — *versicolor*. 3. White, purple. August. N. America. 1790. Syn., *A. lævis*, B. E. t. 1500.
 — *villosus*. See *Felicia villosa*.
 — *viminalis*. 3. Blue. September. N. America. 1800. Syn. *A. foliolosus*.

Asteracantha. See Hygrophila.

Astericus maritimus. See Odonospermum maritimum.

Asterocephalus. (From astron, a star, and kephale, a head; in reference to the seed.) See Scabiosa.

- A. argenteus*. See *Scabiosa ucranica*.
 — *Biebersteinii*. See *Scabiosa micrantha*.
 — *capillatus*. See *Scabiosa mollis*.
 — *elegans*. See *Scabiosa caucasica*.
 — *incaenus*. See *Scabiosa suaveolens*.
 — *lucidus*. See *Scabiosa nitens*.
 — *mollissimus*. See *Scabiosa pyrenaica*.
 — *rotatus*. See *Scabiosa stellata*.
 — *rupesstris*. See *Scabiosa Isetensis*.
 — *ruskofolius*. See *Scabiosa urceolata*.
 — *Siculius*. See *Scabiosa ucranica*.
 — *simplex*. See *Scabiosa monspeliensis*.
 — *tomentosus*. See *Scabiosa pyrenaica*.

Asterostigma. See Staurostigma.

Astilbe. (From a, not, and stilbe, brightness; flowers not very conspicuous. Nat. ord., Saxifragaceæ.)

- Hardy herbaceous perennial. Division; rich garden-soil.
 — *A. decandra*. 2. White. June. Carolina. 1812.
 — *japonica*. 1½. White. Japan. Syns., *A. barbata*, *Spiræa barbata japonica*, and *Hoteia japonica*. There is a variety with variegated leaves. A useful rock plant.
 — *rivularis*. 3. Greenish-yellow. Late summer. Nepal.

- A. rubra*. 6. Pink. July. E. Indies. 1851. B. M. t. 4959.
 — *Thunbergii*. 1½. White. Japan. 1878. Flor. Mag. n. s. t. 457.

Astiria. (From a, not, and steiros, sterile; referring to the absence of barren stamens, one-half of these being barren, generally, in this order. Nat. ord. Sterculiaceæ.)

Allied to *Dombeya*. Stove evergreen shrub; cuttings in sand, under a bell-glass, in heat; peat and sandy loam.

- A. rosea*. Pink. May. Mauritius. 1843. B. R. 1844, t. 49.

Astragalus. Milk Vetch. (An ancient Greek name for some leguminous plant. Nat. ord., Leguminosæ.)

All hardy, except where otherwise specified. Annual species, seed, in common, sandy soil, in March. Perennial herbaceous species, division of the plant. The under-shrubs, cuttings, under a hand-light; common, sandy soil for all.

ANNUALS.

- A. ægiceras*. 1. Pale yellow. July. 1818.
 — *alopecias*. 3. Yellow. June. Siberia. 1800.
 — *annularis*. 1½. Purple. July. Egypt. 1800. Trailer. Syn., *A. trimorphus*.
 — *bæticus*. 1. Pale yellow. July. South of Europe. 1759. Trailer.
 — *brachyceras*. ½. Yellow. July. Tauria. 1828.
 — *bu'ceras*. 1. Pale yellow. July. 1818. Trailer.
 — *canaliculatus*. See *A. scorpioides*.
 — *caryocarpus*. 1. Purple. July. N. America. B. R. t. 176. 1800. Biennial.
 — *cicer*. 2. Yellow. July. Europe. 1570. Trailer.
 — *contortuplicatus*. 1. Pale yellow. July. Siberia. 1764. Trailer.
 — *cruciat*. 1½. Violet. July. 1820. Trailer.
 — *cymbocarpus*. ½. White. July. Spain. 1800. Trailer.
 — *glauca*. ½. Purple. July. Spain. 1596.
 — *lotoides*. See *A. sinicus*.
 — *maroccanus*. ½. Lilac. July. Egypt. 1817. Trailer.
 — *Nuttallianus*. ½. Blue. July. America. 1820. Trailer.
 — *oxygottis*. ½. Blue. July. Tauria. 1817. Trailer.
 — *pentaglottis*. ½. Purple. July. Spain. 1739. Trailer.
 — *reticulatus*. Blue. July. Iberia. 1828.
 — *scorpioides*. 1. Pale blue. July. Spain. 1816. Syn., *A. canaliculatus*.
 — *sesameus*. 1. Pale blue. July. South of Europe. 1816. Trailer.
 — *sinicus*. ½. Red. August. China. 1763. Syn., *A. lotoides*.
 — *triangulatus*. 1. Pale yellow. July. 1818.
 — *tribuloides*. ½. Purple. July. Egypt. 1817. Trailer.
 — *trimesstris*. ½. Pale yellow. July. Egypt. 1730. Trailer.
 — *trimonophus*. See *A. annularis*.

PERENNIALS.

- A. acutifolius*. ½. July. Persia. 1826.
 — *adsurgens*. ½. Purple. July. Siberia. 1818. Syn., *A. Laxmanni*, Jacq.
 — *prostratus*. ½. Purple. July. Siberia. 1818. Trailer.
 — *advincus*. 1. Purple. July. Caucasus. 1819.
 — *alopeuroides*. 2. Light yellow. July. Siberia. 1737.
 — *annuodites*. ½. White. July. Siberia. 1820. Evergreen under-shrub.
 — *arenarius*. 1. Blue. July. Scandinavia. 1798. Trailer.

- A. arista'tus*. 1. Purple. July. Pyrenees. 1791. Evergreen.
 — *a'sper*. 3. Pale yellow. July. Astracan. 1796.
 — *austr'i'acus*. $\frac{1}{2}$. Pale blue. July. Austria. 1640.
 — *baical'e'nsis*. 1. Angust. Yellow. Siberia. 1830.
 — *bayon'e'nsis*. $\frac{1}{2}$. Purple. July. France. 1816.
 — *brachyca'r'pus*. $\frac{1}{2}$. Purple. July. Caucasus. 1820. Trailer.
 — *brevifo'l'rus*. See *A. eriocephalus*.
 — *Buchkorm'e'nsis*. See *Oxytropis Pallastii*.
 — *canad'e'nsis*. $\frac{1}{2}$. Pale yellow. July. N. Amer. 1782. Syn., *A. carolinianus*.
 — *calyc'i'nus*. August. Caucasus. 1819.
 — *capita'tus*. See *A. emarginatus*.
 — *capri'nus*. 1. Pale yellow. July. Barbary. 1683.
 — *carolinia'nus*. See *A. canadensis*.
 — *caryoca'r'pus*. 1. Purple. July. N. America. 1827. Syn., *A. succulentus*.
 — *cauca'sicus*. $\frac{1}{2}$. White. July. Caucasus. 1824. Evergreen.
 — *chine'nsis*. 1. Pale yellow. July. China. 1795. Greenhouse.
 — *chlorosta'chys*. 3. Greenish-yellow. September. Nepal. 1824.
 — *Christia'nus*. 3. Pale yellow. July. Asia Minor. 1737. So called by Dioscorides, because a native of the birthland of Christianity.
 — *dahu'ricus*. $\frac{1}{2}$. Purple. June. Dahuria. 1822.
 — *dasy'n'thus*. 1. June. Hungary. 1819.
 — *dasygl'o'ttis*. See *A. hypoglo'ttis*.
 — *depre'ssus*. $\frac{1}{2}$. Pale yellow. July. Europe. 1772. Trailer.
 — *dotichophy'lus*. $\frac{1}{2}$. Pale yellow. July. Caspian. 1820. Syn., *A. diffusus*.
 — *Donia'nus*. $\frac{1}{2}$. Purple. July. Nepal. 1818. Trailer.
 — *emargina'tus*. 1. Pale yellow. July. South of Europe. 1825. Syn., *A. capitatus*.
 — *epiglo'ttis*. $\frac{1}{2}$. Pale yellow. July. South of Europe. 1737. Trailer.
 — *erioce'phalus*. $\frac{1}{2}$. Purple. July. Armenia. 1826. Half-hardy evergreen. Syn., *A. brevislorus*.
 — *exsca'pus*. $\frac{1}{2}$. Yellow. July. Hungary. 1827.
 — *falca'tus*. 3. Greenish-yellow. July. Siberia.
 — *falcifo'r'mis*. $\frac{1}{2}$. Pale yellow. July. Algiers. 1816.
 — *frutic'o'sus*. $\frac{1}{2}$. Violet. July. Siberia. 1804. Syn., *A. vimineus*.
 — *galegifo'r'mis*. 2. Yellowish-green. June. Siberia. 1729.
 — *glycyphyllo'tes*. 1. Pale yellow. July. Siberia. 1818. Trailer.
 — *glycyphyl'lus*. 3. Yellowish-green. July. Britain. Trailer. Eng. Bot. ed. 3, t. 377.
 — *gra'e'itis*. $\frac{1}{2}$. Purple. June. N. Amer. 1821.
 — *halica'cabus*. $\frac{1}{2}$. Pale yellow. May. Armenia. 1806.
 — *hamo'sus*. 1. Pale yellow. July. Spain. 1683. Trailer.
 — — *macroca'r'pus*. $\frac{1}{2}$. Pale yellow. June. South of Europe. 1820. Trailer.
 — *hypoglo'ttis*. $\frac{1}{2}$. Purple. July. Britain. Trailer. Eng. Bot. ed. 3, t. 376. Syns., *A. dasyglottis* and *purpureus*.
 — — *a'lbus*. $\frac{1}{2}$. White. June. Gardens. Trailer.
 — *hymenoca'r'pus*. 4. Yellow. July. Russia. 1835.
 — *inca'nus*. $\frac{1}{2}$. Purple. July. Montpellier. 1759.
 — *infla'tus*. 1. Purple. July. Mendoza. 1827.
 — *lactifo'nus*. See *A. testicularis*.
 — *lani'gerus*. $\frac{1}{2}$. Yellow. June. Egypt. 1791.
 — *Laxma'd'nni*. Jacq. Vind. 3, t. 87. See *A. adurgens*.
 — *leonti'nus*. $\frac{1}{2}$. Blue. July. Austria. 1815. Trailer.
 — *leptophy'lus*. $\frac{1}{2}$. White. July. Barbary. 1811.
 — *leucophae'us*. $\frac{1}{2}$. Whitish-yellow. July. 1776. Trailer.
 — *linearifo'l'ius*. See *A. onobrychis*.
 — *longifo'r'us*. $\frac{1}{2}$. Yellow. July. Tartary. 1806.
 — *macroce'phalus*. 4. Yellow. June. Caucasus. 1831. Trailer.
 — *ma'simus*. 3. Yellow. June. America.
 — *melilotoi'des*. 3. Purple. June. Siberia. 1785.
 — *micra'n'thus*. 1. Pale yellow. July. 1800.
 — *microphy'lus*. 1. Yellow. June. Siberia. 1773.
 — *monspessula'nus*. 1. Purple. July. S. E. Europe. 1710. Evergreen trailer.
 — — *a'lbus*. 1. White. July. South of Europe. Evergreen trailer.
 — *narbon'e'nsis*. 3. Pale yellow. July. South of Europe. 1789.
 — *negle'ctus*. $\frac{1}{2}$. July. Siberia. 1826.
 — *odora'tus*. $\frac{1}{2}$. Pale yellow. July. South of Europe. 1820.
 — *onobrychio'tes*. 1. Purple. July. Iberia. 1819.
 — *onobry'chis*. $\frac{1}{2}$. Purple. July. Austria. 1640. Trailer. Syn., *A. linearifolius*.
 — *oto'pteris*. 1. Pale blue. July. Altai. 1817.
 — *Palla'sii*. $\frac{1}{2}$. Purple. July. Caspian. 1818.
 — *palle'scens*. 1. Pale yellow. June. Siberia.
 — *pentaglo'ttis*. $\frac{1}{2}$. Yellowish-blue. May. Chiii. 1832. Half-hardy. Syn., *A. procumbens*.
 — *phyo'sdes*. $\frac{1}{2}$. Purple. July. Siberia. 1759.
 — *platyphyl'lus*. 1. Pale yellow. July. Siberia. 1824. Trailer.
 — *po'nticus*. 2. Pale yellow. Tauria. 1820.
 — *pot'e'r'ium*. $\frac{1}{2}$. White. July. Levant. 1640. Evergreen.
 — *procu'mbens*. See *A. pentaglottis*.
 — *purpu'reus*. See *A. hypoglo'ttis*.
 — *re'ptans*. $\frac{1}{2}$. White. July. Mexico. 1818. Greenhouse evergreen creeper.
 — *Schanginia'nus*. 1. White. Siberia. 1832.
 — *semibilocula'ris*. $\frac{1}{2}$. Pale yellow. July. Siberia. 1804.
 — *ste'lla*. $\frac{1}{2}$. Blue. July. South of Europe. 1658. Trailer.
 — *stipula'tus*. 1. Yellow. June. Nepal. 1822. B. M. t. 2380.
 — *subula'tus*. $\frac{1}{2}$. Purple. July. Siberia. 1820.
 — *succule'nus*. See *A. caryocarpus*.
 — *sulca'tus*. 4. Light blue. July. Siberia. 1785.
 — *sylo'colus*. See *Oxytropis sylvatica*.
 — *tau'ricus*. $\frac{1}{2}$. Purple. July. Tauria. 1826.
 — *testicula'tus*. $\frac{1}{2}$. Fleshy-white. July. Tauria. 1818. Syn., *A. lactiflorus*.
 — *tomento'sus*. 3. Pale yellow. July. Egypt. 1800. Half-hardy.
 — *tragaca'ntha*. Pale yellow. July. South of Europe. 1640. Evergreen.
 — *tu'midus*. $\frac{1}{2}$. Pale yellow. July. Egypt. 1816. Evergreen.
 — *uligino'sus*. 2. Pale yellow. July. Siberia. 1752.
 — *u'trigger*. $\frac{1}{2}$. Yellow. July. Russia. 1818.
 — *vesica'r'ius*. 1. Whitish-yellow. July. Europe. 1737. Trailer.
 — *vim'i'neus*. See *A. fruticosus*.
 — *virga'tus*. 3. Violet. July. Siberia. 1806.
 — *vulpi'nus*. 2. Light yellow. July. Turkestan. 1815.

Astra'nthus. See Homalium.

Astrantia. Masterwort. (From *astron*, a star, and *anti*, comparison; referring to the disposition of the flower-umbels. Nat. ord., *Umbelliferae*; Tribe, *Saniculeae*.)

Hardy herbaceous perennials; dividing the plants in March or October; seeds; sandy loam. The dwarfier species are pretty rock plants.

- A. Biebersteini*. 2. May. Caucasus. 1835.
 — *carniolica*. 1. White. June. Carniola. 1812.
 — *helleborifolia*. 2. Pink. July. Caucasus. 1804. B. M. t. 1553. Syns., *A. heterophylla* and *A. maxima*.
 — *intermedia*. 1. Pink. July. Caucasus. 1818. Syn., *A. caucasica*.
 — *major*. 2. Striped. June. Alps of Europe. 1596. Eng. Bot. ed. 3, t. 567.
 — *minor*. 1. Pink. June. Switzerland. 1686.
 — *variegata*. A fine variegated-leaved form.
 — *varicifolia*. 1. White. July. Sicily. 1820.

Astrapæa. See Dombeya.

A. viscosa. See *Dombeya Amelica*.

Astroca'ryum. (From *astron*, a star, and *karyon*, a nut; referring to the disposition of the fruit. Nat. ord., *Palmaceæ*.)

Ornamental stove palms. Allied to *Cocos*. Seed in hotbed, in spring; rich loam and leaf-soil.

- A. acule*. 10. Brazil. 1820.
 — *aculeatum*. 40. Guiana. 1824.
 — *argenteum*. Columbia. 1875.
 — *aureo-pictum*. See *Phœnicophorum seychellarum*.
 — *Borstigianum*. See *Phœnicophorum seychellarum*.
 — *campestre*. 10. Brazil. 1826.
 — *decorum*. Columbia. 1870.
 — *filare*. Columbia. 1875.
 — *granatense*. Columbia. 1876.
 — *iristoides*. Gfl. t. 1022, f. 3.
 — *mexicanum*. Mexico. 1864. Rev. Hort. 1878, p. 148.
 — *Murumuru*. 40. Brazil. 1825. Ell. Hort. n. s. t. 213.
 — *niueum*. Panama. 1866. Leaves glaucous beneath.
 — *rostratum*. 30. White. Bahia. B. M. t. 4773.
 — *vulgaris*. 30. Brazil. 1825.

Astrolobium. See Ornithopus.

Astrolo'ma. (From *astron*, a star, and *loma*, a fringe; in reference to the bearded fringe on the corolla. Nat. ord., *Epacridaceæ*.)

Greenhouse evergreen shrubs, very handsome and useful. Young cuttings, firm at their base, in sand, under a bell-glass; sandy loam and turfy peat.

- A. denticulatum*. 1. Pale red. May to July. Australia. 1826.
 — *divaricatum*. 2. Pink. Australia. Syns., *A. splendens*, Fl. Ser. t. 1018, and *Styphelia splendens*.
 — *humifusum*. 1. Scarlet. May to June. N. S. Wales. 1807. B. M. t. 1439.
 — *pinnifolium*. 2 to 3. Corolla reddish at base, yellow above, tip green. June. Australia. 1816. Syn., *Stenantha pinnifolia*. B. R. t. 218.

Astrophy'tum. (From *astron*, a star, and *phyton*, a plant; referring to the form of the pubescence. Nat. ord., *Cactaceæ*.)

For cultivation, see *CACTUS*.

- A. myriostigma*. Yellow. B. M. t. 4177. Syn., *Echinocactus myriostigma*.

Asysta'sia. (From *a*, without, and *stachys*, a spike, the inflorescence; not in spikes, as is often the case in *Acanthaceæ*. Nat. ord., *Acanthaceæ*.)

Stove evergreen shrub; cuttings of young shoots in April, in sandy soil, under a bell-glass; peat and loam, with a little sand, and, to induce vigour, a little dried cow-dung will be found beneficial.

- A. chelonioides*. Reddish-purple, white. India. 1871.
 — *coromandeliana*. 4. Deep lilac. July. India. 1845. B. M. t. 4248. Syn., *Justicia gangetica*.
 — *macrophylla*. 8 to 10. Purple, white. June. Fernando Po. 1867.
 — *scandens*. Climber. Cream-coloured. Sierra Leone. B. M. t. 4449.
 — *violacea*. 1 to 2. Violet, white. India. 1870. B. M. t. 5882.

Ata'ccia. See Tacca.

A. aspera. See *Tacca integrifolia*.

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. Hippomenes 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., *Aurantiaceæ*.)

Stove evergreen shrub; ripe cuttings in heat, under a bell-glass; sandy loam and peat.

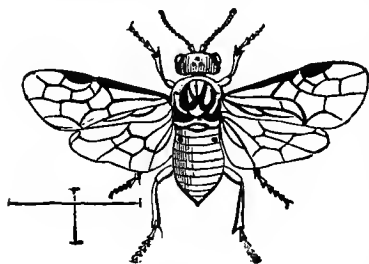
- A. monophylla*. 4. White. July. E. Ind. 1777.

Atamasco-lily. *Zephra'nthes Atamasco*

Atela'ndra. See Hemigenia.

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 *Athalia centifolia* 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'nata. (From Mount Athamas in Sicily. Nat. ord., *Umbelliferæ*.)

A pretty foliaged hardy herbaceous plant. Common garden-soil; division, and seeds.

A. Matthioli. 2. White. Summer. Carinthian Alps. 1802.

Athana'sia. (From *a*, not, and *thanos*, death; in reference to the flowers being what is called "everlasting." Nat. ord., *Compositæ*; Tribe, *Anthemideæ*.)

Ornamental greenhouse evergreens; all natives of the Cape of Good Hope. Cuttings of half-ripe wood in spring, in sand, under a bell-glass; two parts loam to one of peat. Winter temperature, 40° to 45°; summer, 60° and upwards.

- A. a'nua.* B. M. t. 2276. See *Lonas inodora*.
 — *canescens.* See *A. pubescens*.
 — *capitata.* 1½. Yellow. March. 1774.
 — *crenata.* 2. Yellow. July. 1816.
 — *crithmifolia.* 2. Yellow. July. 1723.
 — *euneiformis.* 2. Yellow. July. 1816.
 — *dentata.* 1½. Yellow. July. 1759.
 — *filiformis.* 2. Yellow. August. 1787.
 — *lanuginosa.* See *A. pubescens*.
 — *longifolia.* 2. Yellow. July. 1800.
 — *parviflora.* 2. Yellow. April. 1731. Jacq. H. Schoen. t. 149.
 — *pectinata.* 1½. Yellow. July. 1774.
 — *pinna'ta.* 1½. Yellow. July. 1818.
 — *pubescens.* 6. Yellow. July. 1768. Syns., *A. canescens* and *lanuginosa*.
 — *punctata.* 3. Yellow. June. 1822.
 — *tomentosa.* 2. Yellow. May. 1774.
 — *tricuspidata.* 3. Yellow. July. 1816.
 — *trifurcata.* 3. Yellow. July. 1710.
 — *virgata.* 1. Yellow. July. 1815.

Atheropogon. See *Boutelona*.
A. aphulodes. See *Boutelona racemosa*.

Atherosperma. (From *ather*, an awn, and *sperma*, seed; seeds awned. Nat. ord., *Monimiaceæ*.)

This beautiful Australian greenhouse evergreen 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 plea-

sant tea-beverage from the bark, either dried or in a green state. "Its effects are, however, slightly aperient."—*Backhouse*. Cuttings; loam and peat.

A. moschatata. 40. White. June. Victoria. 1824.

Athri'xia. (From *a*, not, and *thrix*, a hair; the receptacle being destitute of hairs. Nat. ord., *Compositæ*; Tribe, *Inuloideæ*. Allied to *Leyssera*.)

Greenhouse evergreen shrub; cuttings of rather young wood, under a bell-glass, in sandy soil; lumpy loam and peat.

A. cape'nsis. 3. Red. April. Cape of Good Hope. 1821. B. E. t. 681.

Athrotaxis. (From *athros*, crowded together, and *taxis*, arrangement; in reference to the arrangement of the scales of the cones. Nat. ord., *Coniferæ*.)

All the species are small Tasmanian evergreen trees, possibly hardy in sheltered localities, otherwise they require a greenhouse. Cuttings.

A. cupressoides. 30. Ic. Pl. t. 559.

— *Gunnea'na.* 1869. Rev. Hort. 1869, p. 114.

— *taxifolia.* 25. Ic. Pl. t. 573. Syn., *A.*

Domitiana.
 — *selaginoides.* 40. Syn., *A. imbricata* of gardens.

Athy'rium. See *Asplenium*.

Atime'ta. (From *atimetos*, despised. Nat. ord., *Araceæ*.)

Stove evergreen climbers. For cultivation, see *PHILODENDRON*.

A. filamentosa. Spathe yellowish. Brazil. 1860.

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—*Clematis vitalba*. Nat. ord., *Ranunculaceæ*; Tribe, *Clematideæ*.) Referred to *Clematis* in the *Genera Plantarum*.

Hardy deciduous climber shrubs; seeds in spring in gentle heat, and pricked off into pans as soon as ready to handle; layers in summer and autumn; cuttings in spring and summer, under a hand-light; common soil.

A. alpina. Varying from blue to white. May. Mountainous parts of Europe. 1792.

Syns., *A. sibirica* and *Clematis alpina*.

— *austr'aca.* 8. Blue and white. July.

Austria. 1792. B. M. t. 530.

— *americana.* 15. Purple. June. N. Amer. 1797. Syn., *Clematis verticillaris*, B. M. t. 887.

— *obliqua.* 15. Purple. June. N. Amer. 1797.

— *macro'cala.* Twiner. 8. Blue. Manchuria. 1870. Gf. t. 651.

— *occident'alis.* 10. July. 1818.

— *ochot'ensis.* 12. White. June. Siberia. 1818.

— *sibi'rica.* A form of *A. alpina*.

— *zeyla'nica.* See *Naravehia zeylanica*.

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., *Chenopodiaceæ*.)

A. halimius is a hardy evergreen shrub, rather

ornamental, and *A. portulacoides* is a hardy under-shrub; but the species most deserving notice is *A. hortensis* and its varieties, garden Orach. See ORACH. There are many other species quite undeserving of notice.

A. halmus atrosanguinea. 4. Tartary.
— *hakimoides monumentalis*. 9. Seedling. Gfl. 1890, p. 105, f. 24.

A'tropa. Night-shade. (Named after *Atropos*, one of the three Fates, in reference to its poisonous qualities. Nat. ord., *Solanaceæ*.)

A. Bella-donna. 2 to 4. Green and purple, Summer. Britain. Eng. Bot. ed. 3, t. 934.

We introduce this native weed 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, of no horticultural value.

— *procumbens* and *umbellata*. See *Saracha*.

Atta'lea. (From *attalus*, magnificent; in reference to the beauty of these palms. Nat. ord., *Palmaceæ*. Allied to *Cocos*.)

Handsome stove palms. Seeds; rich loam and peat. They like copious waterings.

A. amygdalina. New Grenada. 1847. Syn.,

- A. nucifera*.
- *Coku'ne*. 50. Honduras.
- *co'mpta*. 22. Brazil. 1820.
- *exce'lsa*. 70. Brazil. 1826.
- *frun'fera*. 40. Brazil. 1824. The Pissaba Palm. Rev. Hort. 1873, p. 149.
- *hu'milis*. 10. Brazil. 1820.
- *nuci'fera*. See *A. amygdalina*.
- *Ro'ssii*. 20. Brazil. 1825.
- *specio'sa*. 70. Brazil. 1826.
- *specta'bilis*. 70. Brazil. 1824.

Aubrie'tia. (Named after *M. Aubriet*, a French botanical draughtsman. Nat. ord., *Cruciferae*. Allied to *Arabis*.)

Hardy evergreen trailing plants. Division in spring or autumn; cuttings under a hand-glass, in sandy soil. Seeds; any dry soil. Useful rock plants. There are many named varieties in addition to those mentioned here.

- A. deltoidea*. ½. Purple. April. Levant. 1710.
- *Bouganvillea*. Light violet. Very dwarf.
- *Campbelli*. Deep violet-blue. Syn., *A. Hendersoni*.
- *Eyrei*. Violet-purple.
- *græca*. ½. Lilac-purple. Greece. 1872. Gfl. t. 697. Syn., *A. superba*.
- *grandiflora*. Large flowered.
- *Leichtlini*. Deep rose, very ornamental. 1836.
- *purpurea*. ½. Purple. April. Greece. 1820.
- *violacea*. Deep violet-purple.
- *Hendersoni*. See *A. deltoidea*, var. *Campbelli*.
- *hesperidiflora*. ½. Purple. March. South Europe. 1823. B. C. t. 1706.
- *olympica*. Probably the same as *A. deltoidea*, var. *Eyrei*.
- *superba*. See *A. deltoidea*, var. *græca*.

Au'cuba. (The name of the shrub in Japan. Nat. ord., *Cornaceæ*.)

Hardy evergreen ornamental berried shrubs, most suitable for towns, thriving in a smoky atmosphere better than any other plant. Cuttings in spring and autumn, in any light soil, without covering; common soil, if drained. It is sometimes called the *Variegated Laurel*.

A. himala'ica. 7. Purple, green. Himalaya. III. Hort. 1859, t. 197.
— *jap'onica*. 6. Green. June. Japan. 1783. B. M. t. 1197.



♂



♀

Numerous varieties of this species, both male and female, differing in the variegation of the leaves, are now in general cultivation. They may be had of any nurseryman. There are also varieties, such as — *albo-variegata*, *antrea*, *bicolor*, *elegans*, *flavescens*, *grandidentata*, *maculata*, *grandis*, *latifolia*, *latimaculata*, *limbata*, *longifolia*, *macrophylla*, *marmorata*, *ovata*, *pictata*, *picturna*, *pygmaea*, *pygmaea sulphurea*, *Youngii*, etc.

Audibe'rtia. (Named after *M. Audibert*, a noted nurseryman of Tarascon. Nat. ord., *Labiatae*. Allied to *Monarda*.)

Hardy evergreen. Seeds, in March or April; common soil.

- A. inca'na*. 1½. Pale blue. August. Columbia. 1827. B. R. t. 1469.
- *polystachya*. 2. White. October. California. 1849.

Audou'nia. Named after *Audouin*, a celebrated entomologist. Nat. ord., *Bruniaceæ*.)

Ornamental greenhouse evergreen shrub. Cuttings of half-ripened wood, in sand, under a bell-glass; peat and loam.

A. capitata. 1½. Purple. June. Cape of Good Hope. 1790.

Aulacophyllum. See *Zamia*.

Au'lax. (From *aulax*, a furrow; in reference to the furrowed under side of the leaves. Nat. ord., *Proteaceæ*.)

Greenhouse evergreen shrubs. Ripe cuttings, in sandy soil, under a bell-glass; loam and peat.

- A. pinifolia*. 2. Yellow. August. Cape of Good Hope. 1780. Andr. Rep. t. 76. Syn., *Protea pinifolia*.
- *umbellata*. 2. Yellow. July. Cape of Good Hope. 1774. B. R. t. 1015, male; Andr. Rep. t. 248, female.

Auri'cula. See *Primula*.

Auri'cula disease. See *Trama auriculæ*.

Ave'na. (Derivation obscure. Nat. ord., *Gramineæ*.)

- Agricultural grasses of no garden value.
- A. elatior*. See *Arrhenatherum avenaceum*
- Avena bulbosa* is a variety of this species.
- *sativa*. The Oat.
- *sterilis*. 2. Barbary. 1640.

Avens. See *Geum*.

Averrho'a. (Named after *Averrhoes*,

a Moorish physician, who lived in the twelfth century. Nat. ord., *Oxalidaceæ*.)

The leaves of *A. cara'mbola* exhibit that kind of irritability called "sensitive." Both species are cultivated in India, and their fruit eaten. Stove evergreen shrubs; half-ripened cuttings in April, in sand, under a bell-glass, and in bottom-heat; loam and peat.

A. bil'i'mbi. 8. Reddish-purple. August. 1791. Native country unknown. Bedd. Fl. Syl. t. 117.

— *cara'mbola*. 10. Greenish-red. 1733.

Averruncator (from the Latin *aver-runco*, 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.

Avocado. *Persea 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.

Ayenia. (Named after the *Duke d' Ayen*. Nat. ord., *Sterculiaceæ*. Closely allied to *Buettneria*.)

Stove plants; cuttings in sand; rich soil; ordinary stove treatment.

A. lævigata. 2. Scarlet. Jamaica. Evergreen under-shrub.

— *pustilla*. 1. Purple. August. Jamaica. 1756. Biennial.

Azalea. (From *azaleos*, dry; in reference to the habitation of the plant. Nat. ord., *Ericaceæ*.) This genus is united by Bentham and Hooker to *Rhododendron*, but for gardening purposes it can be kept distinct.

It was said that the Pontic honey which steeped the Greek soldiers was collected from *Rhododendron ponticum*; but Pallas believes it to have been gathered from *Azalea pontica*. All the greenhouse species are evergreen, except *A. squamata*; 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 over-hard shoots, inserted in sand, under a bell-glass; sandy peat. Summer temperature, 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*. 10. Red. June. N. Amer. 1818. Syn., *Rhododendron arbore'scens*.
 — *bi'color*. 4. Scarlet. June. N. Amer. 1734. Syn., *Rhododendron nudiflorum*.
 — *can'e'scens*. 3. Red. June. N. Amer. 1812.
 — *calendula'cea*. 4. Orange. June. N. Amer. 1806. Syn., *Rhododendron calendulaceum*.
 — *chry'sole'cta*. 4. Yellow. June. N. Amer. B. M. t. 1721 and 2143.
 — *cro'cea*. 4. Saffron. June. N. Amer.
 — *cu'prea*. 4. Copper. June. N. Amer.
 — *fa'mnea*. 4. Red. June. N. Amer. 1812.
 — *grandiflo'ra*. 4. Orange. June. N. Amer.
 — *igne'scens*. 1. Red. June. N. Amer.
 — *sp'e'ndens*. 4. Orange. June. N. Amer.
 — *triv'mphans*. 4. Orange. June. N. Amer.
 — *glau'ca*. 2. White. June. N. Amer. 1734. Syn., *Rhododendron viscosum*.
 — *hi'spida*. 5. White. July. N. Amer. 1734.
 — *ledifolia*. 2. White. April. China. 1824. Syn., *A. liliifolia*. B. M. t. 2901.
 — *ni'tida*. 4. White. April. N. Amer. 1812. Syn., *Rhododendron nitidum*.
 — *nudiflo'ra*. 3. Deep pink. June. N. Amer. 1734. Syn., *Rhododendron nudiflorum*.
 — *alba*. 4. White. June. N. Amer.
 — *alba-pl'e'na*. 4. White. June. N. Amer.
 — *bla'nda*. 4. Blush. June. N. Amer.
 — *ca'nea*. 4. Pale red. June. N. Amer. 1734.
 — *carolinia'na*. 4. Scarlet. June. N. Amer.
 — *Cobu'rghii*. Scarlet. June. N. Amer.
 — *cocc'nea*. 4. Scarlet. June. N. Amer.
 — *corymbo'sa*. 4. Scarlet. June. N. Amer.
 — *cri'spa*. 4. Pink. June. N. Amer.
 — *cumula'ta*. 4. Scarlet, pink. June. N. Amer.
 — *di'scolor*. 4. White, scarlet. June. N. Amer.
 — *fastigia'ta*. 4. Pink. June. N. Amer.
 — *fo'rida*. 4. Pink. June. N. Amer.
 — *globo'sa*. 4. Pink. June. N. Amer.
 — *glomera'ta*. 4. Pink. June. N. Amer.
 — *inca'na*. 4. Pink. June. N. Amer.
 — *incarna'ta*. 4. Flesh. June. N. Amer.
 — *mir'a'bilis*. 4. Scarlet. June. N. Amer.
 — *magn'i'fica*. 4. Scarlet. June. N. Amer.
 — *monta'na*. 4. Scarlet. June. N. Amer.
 — *pa'lidia*. 4. Pale red. June. N. Amer.
 — *paludo'sa*. 4. Pale red. June. N. Amer.
 — *papilion'a'cea*. 4. Striped. June. N. Amer.
 — *parti'ta*. 4. White and red. June. N. Amer.
 — *parviflo'ra*. 4. June. N. Amer.
 — *prol'fera*. 4. June. N. Amer.
 — *pu'mila*. 4. White. June. N. Amer.
 — *purpura'scens*. 4. Purple. June. N. Amer.
 — *purpu'rea*. 4. Purple. June. N. Amer.
 — *purpu'reo-pl'e'no*. 4. Purple. June. N. Amer.
 — *ro'sea*. 4. Red. June. N. Amer.
 — *rube'r'rima*. 4. Dark red. June. N. Amer.
 — *rube'scens*. 4. Red. June. N. Amer.
 — *rubicu'nda*. 4. Red. June. N. Amer.
 — *ru'bra*. 4. Red. June. N. Amer.
 — *ru'tilans*. 4. Dark red. June. N. Amer.
 — *semidu'plex*. 4. White. June. N. Amer.
 — *stam'i'nea*. 4. Red. June. N. Amer.
 — *stella'ta*. 4. Red. June. N. Amer.
 — *tri'color*. 4. Scarlet, white. June. N. Amer.
 — *varia'bilis*. 4. Red. June. N. Amer.
 — *variega'ta*. 4. Red and white. June. N. Amer.

- A. nudiflora* var. *color*. 4. Red and white. June. N. Amer.
 — *viola cca*. 4. Violet. June. N. Amer.
 — *po'ntica*. 6. Yellow. June. Turkey. 1793. Syn., *Rhododendron flavum*. Ill. Hort. 1864, t. 415.
 — *albiflora*. 6. White. May. Turkey.
 — *corona'ria*. 7. Yellow. June. Holland. 1832.
 — *cu'prea*. 6. Copper. June. Turkey.
 — *glau'ca*. 6. Yellow. June. Turkey.
 — *pa'lida*. 6. Pale yellow. April. Turkey.
 — *tri'color*. 6. Pale red. April. Turkey.
 — *specio'sa*. 4. Scarlet and orange. June. N. Amer. Syn., *Rhododendron speciosum*.
 — *acutifo'lia*. 4. June. N. Amer.
 — *aura'ntia*. 4. Orange. June. N. Amer.
 — *cilia'ta*. 4. June. N. Amer.
 — *cri'spa*. 4. Scarlet. June. N. Amer.
 — *cuculla'ta*. 4. June. N. Amer.
 — *ma'jor*. 4. Scarlet. June. N. Amer.
 — *obli'qua*. 4. June. N. Amer.
 — *prunifo'lia*. 4. June. N. Amer.
 — *revolu'ta*. 4. June. N. Amer.
 — *tortu'lifolia*. 4. June. N. Amer.
 — *undula'ta*. 4. June. N. Amer.
 — *visco'sa*. 2. White. July. N. Amer. Syn., *Rhododendron viscosum*.
 — *cri'spa*. 4. White. July. N. Amer.
 — *dealba'ta*. 4. White. July. N. Amer.
 — *f'issa*. 4. White. July. N. Amer.
 — *ni'tida*. 4. White, red. United States. 1812. B. R. t. 414.
 — *odora'ta*. 4. White. July. N. Amer.
 — *penicilla'ta*. 4. White. July. N. Amer.
 — *pube'scens*. 4. White. July. N. Amer.
 — *rube'scens*. 4. White. July. N. Amer.
 — *variega'ta*. 4. White. July. N. Amer.
 — *vitta'ta*. 4. White. July. N. Amer.

GREENHOUSE.

- A. amce'na*. 1. Crimson, purple. April. Shanghai.
 — *balsaminiflora*. Salmon-red. Japan.
 — *crispiflora*. Rose. April. China.
 — *Danielsiana*. 3. Carmine. June. China. 1830.
 — *dianthiflora*. Rose, or violet, dotted brown. Japan. 1839.
 — *indica*. 4. Scarlet. June. China. 1808.
 — *aurantiaca*. 4. Orange. April. China. 1822.
 — *igne'scens*. 2. Brown. April. China.
 — *lateritia*. 2. Red. May. China. 1833.
 — *phaenicea*. 3. Purple. April. China. 1824.
 — *purpureo-plena*. 4. Purple. May. China. 1819.
 — *variega'ta*. 4. Striped. June. China. 1824.
 — *linearifolia*. Rose. February. Japan. 1869.
 — *molle*. Yellow, rose, orange, white. Japan. 1867.
 — *glabrior*. Orange. Japan. 1868.
 — *obtus*. 1½. Red. March. China. 1844.
 — *occidentalis*. White, yellow. California.
 — *Oldhami*. See *Rhododendron Oldhami*.
 — *ovata*. 8. Pink. China. 1844.
 — *a'ta*. 8. White. May. N. China. 1844.
 — *ramenta'cea*. White. March. Hong Kong. 1846.
 — *rosastro*. Lake-red, flowers double. Japan. 1848.
 — *serpyllifolia*. White. Japan. 1832.
 — *sine'nsis*. 3. Yellow. May. China. 1823.
 — *aguama'ta*. 2. Rose, crimson. March. China. 1844. Syn., *Rhododendron Farrere*.
 — *stenopetala*. Rosy. Japan. 1864.

Azaleas (Ghent or American). These include what are called *Ghent Azaleas*, which are seedling varieties of *A. calendula cca*, *A. nudiflora*, *A.*

speciosa, *A. visco'sa*, etc. 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.

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.

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 fertilization 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, re-potting 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, and fit a bell-glass just within the rim of the pot; place them in a temperature of 55° to 60°, and shade

from the sun. They should thus remain till rooted; then place them in a greenhouse for a week or two; and remove the bell-glass every night, replacing it during the day. 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, or under hand-glasses, upon sand, in a propagating house. *The stock* most suitable is the *Aza'lea i'ndica a'lba*, or *A. phæni'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, keep them 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. To prevent this, they should be all grafted upon the free-growing stocks.

Azalea'strum albiflorum. See *Rhododendron albiflorum*.

Aza'ra. (Named after *J. N. Azara*, a Spanish patron of botany. Nat. ord., *Bixineæ*.)

Charming hardy and half-hardy evergreen shrubs. In the north a slight protection is necessary in winter; they do not require covering in the southern counties, but thrive best against

walls. Cuttings in sand, under glass, in slight heat. Sandy loam.

- A. dentata*. 10. Yellow. Chili. 1830. B. R. t. 1788.
- *Gille'sii*. 15. Yellow. Spring. Chili. 1859. B. M. t. 5178.
- *integrifolia*. 18. Yellow. Autumn. Conception. 1832.
- *microphylla*. Greenish. Chiloe and Valdivia. 1873. Fl. and Pom. 1874, p. 220.
- *serrata*. 12. Chili. 1832.

Azi'ma. (From *azimena*, the Malagasy name of a shrub, which this resembles. Nat. ord., *Salvadoraceæ*.)

- A. tetradantha*. 3. White. July. India. 1758. Wright. Pl. t. 152. Syn., *Monetia barlerioides*.

Azo'lla. (From *azo*, to dry, and *ollo*, to kill; being killed by dryness. Nat. ord., *Marsilicææ*.)

Stove or greenhouse aquatics, also suitable for a window aquarium. They are small floating plants, with minute overlapping leaves, resembling a *Jungermannia*, having two kinds of fruit on the under side of the branches. It survives the winter best in shallow saucers of moist soil, kept in a warm frame, or pit. Pretty in outdoor tanks in summer, where it assumes a rich red purple colour.

The species in cultivation usually bears the name of *A. pinna'ta*, but according to Mr. Baker it is not that species, but *A. caroliniana*. It has never been seen in fruit in Britain.

B.

Babia'na. (From *babianer*, the Dutch for baboon; in reference to the bulbs being eaten by the baboons. Nat. ord., *Iridicææ*.)

All highly ornamental bulbous plants, natives of the Cape, with one exception. Useful as pot plants, by which treatment the flowering season may be considerably prolonged. 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. Perhaps the most satisfactory treatment, however, is to plant them out in low frames of light soil in a sunny position, warding off heavy rains, etc., lifting the bulbs, and drying off when the resting season comes round.

- B. bicolor*. Blue, white. June. 1843.
- *disticha*. †. Blue. June. 1774. Fragrant. B. M. t. 626.
- *macronata*. †. Purple. June. 1825. Syn., *Gladiolus macronatus*, Jacq. Ic. t. 253.
- *na'na*. †. Blue. April. 1807. Andr. Rep. t. 137.
- *plidata*. †. Purple. May. 1774. Syns., *B. cærulescens, fragrans*, Jacq. H. Schœn. t. 14 and *reflexa*, B. M., t. 576. Fragrant.
- *multiflexa*. †. Purple. June. 1834.
- *ringens*. †. Scarlet. May. 1752. B. C. t. 1006. Syn., *Antholyza ringens*.
- *sambucina*. †. Purple. April. 1799. B. M. t. 1019.
- *socotra'na*. Violet, blue. September. Socotra. B. M. t. 6585.
- *spathacea*. †. Light blue. June. 1801. B. M. t. 638.
- *stricta*. 1. Blue, white. May. 1757. B. M. t. 621 and 638.

- B. striata angustifolia*. 1. Blue. May. 1757. B. M. t. 637.
 — — — *obtusifolia*. ½. Blue. May. 1825. Syn., *Lixia villosa*, Jacq. Ic. t. 284, but not of Solander.
 — — — *purpurea*. ¾. Purple. May. 1806. B. M. t. 1052.
 — — — *rubrocyanea*. ½. Blue, red. May. 1794. B. M. t. 410.
 — — — *sulphu'ra*. ½. Yellow, anthers blue, stigma yellow. B. M. t. 1053. Syn., *Gladiolus sulphureus*.
 — — — *villosa*. ¾. Crimson, anthers violet blue. August. 1778. B. M. t. 583.
 — — — *tenuiflora*. ½. Purple. May. 1825.
 — — — *Thunbergii*. 1. White and red. April. 1774.
 — — — *tubata*. ¾. Yellow and red. June. 1774. Syn., *Gladiolus tubatus*, Jacq., Ic. t. 264, and *G. longiflorus*, Andr. Rep. t. 5.
 — — — *tubiflora*. ¾. Dark red. May. 1774. B. M. t. 847. Syn., *Gladiolus tubiflorus*.

Babingto'nia. See **Bæckia**.

Baca'zia. See **Barnadesia**.

Baccharis. Ploughman's Spiknard. (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., *Compositæ*; Tribe, *Asteroidæ*.)

Cuttings under glass, with or without heat, according as the species are stove, greenhouse, or hardy; loam and peat. Not by any means ornamental.

GREENHOUSE.

- B. alata*. 5. Pale yellow. December. 1829.
 — — — *angustifolia*. 2. White. July. N. Amer. 1812.
 — — — *ivæfolia*. See *Conyza ivæfolia*.

STOVE.

- B. adnata*. See *Pluchea subdecurrens*.
 — — — *conferta*. White. July. Mexico. 1826.
 — — — *glutinosa*. 3. White. August. Peru. 1824.
 — — — *indica*. See *Pluchea indica*.
 — — — *marginalis*. 3. White. July. Peru. 1820. Syn., *B. parviflora*.
 — — — *scoparia*. 3. Cream-coloured. July. Jamaica. 1820.

HARDY.

- B. Dioscoridis*. See *Pluchea Dioscoridis*.
 — — — *glomeruliflora*. 3. White. August. N. Amer. 1817.
 — — — *halimifolia*. 6 to 12. White. July. Northern United States. Grounds Tree. *lycopodioides*. See *Eriothrix lycopodioides*.
 — — — *nerifolia*. See *Brachylaena nerifolia*.

Backho'usia. (Named in compliment to Mr. James Backhouse, of York. Nat. ord., *Myrtaceæ*.)

A greenhouse evergreen shrub. Cuttings of half-ripened shoots in April, in sand, under a bell-glass in cold house or frame. Peat and loam, both fibry, and a little white sand.

- B. myrtifolia*. 16. White. May. N. S. Wales. 1844. B. M. t. 4133.

Bac'tris. (From *baktron*, a cane; the young stems being used for walking-sticks. Nat. ord., *Palmaceæ*. Allied to *Cocos*.)

Very ornamental prickly stove palms. Suckers, or seeds; sandy loam, peat and leaf-soil. Most useful perhaps in a young state.

- B. baculifera*. Leaves pinnate. 2 to 6 feet long. S. America.
 — — — *caryotæfolia*. 30. Brazil. 1825. Mart. Palms, t. 74.
 — — — *cuspidata*. 20. Brazil. 1826. Syn., *B. floccosa*. Mart. Palms, t. 73b.
 — — — *globosa minor*. See *Acrocomia minor*.
 — — — *guianensis*. 16. Guiana. 1820.
 — — — *macroacantha*. 20. Brazil. 1823.
 — — — *major*. 25. Greenish-yellow. Carthage. 1800. Mart. Palms, t. 73.
 — — — *Marc'ja*. 30 to 50. Yellow. Bahia. 1868. Mart. Palms, t. 71.
 — — — *minor*. 12. S. Amer. 1691.
 — — — *pallidispina*. Brazil. Syn., *B. flavispina*.
 — — — *pectinata*. 15. Brazil. 1825. Mart. Palms, t. 60 and 73a.

Badger's Bane. *Aconitum meloc-tonum*.

Bæ'a. (Named in honour of the Rev. Dr. Beau, of Toulon, brother-in-law to Commerson, the discoverer of the genus. Nat. ord., *Gesneraceæ*. Allied to *Streptocarpus*.)

Greenhouse perennial herbs, but probably hardy in sheltered positions, with rosette radical leaves, and slender leafless scapes. Seeds Rich sandy loam.

- B. hygrometrica*. ½. Pale blue, yellow throat. Summer. N. China. 1868. Syn., *Dor-coceras hygrometrica*. B. M. t. 6468.

Bæckia. (Named after Dr. B. Bæck, a Swedish physician. Nat. ord., *Myrtaceæ*.)

Pretty greenhouse evergreen shrubs. Cuttings of young wood in spring, under a glass; sandy peat, and lumpy, fibry loam.

- B. astarteoides*. 3. White, shaded pink. June. Australia. 1881.
 — — — *camphorata*. 3. July. Australia. 1818. B. M. t. 2694.
 — — — *camphorosmæ*. 7. Pinkish. July. Swan River. 1841. B. E. 1842, t. 10. Syn., *Babingtonia camphorosmæ*.
 — — — *densifolia*. 3. September. N. S. Wales.
 — — — *diosmæfolia*. 3. August. Australia. 1824.
 — — — *frutescens*. 3. November. China. 1806. B. M. t. 2802.
 — — — *gracilis*. 2. Australia. 1826.
 — — — *linifolia*. 3. August. Australia. 1818. Linn. Trans., vol. 8, t. 12.
 — — — *pa'rula*. White. New Caledonia. 1877. Gf. t. 886, f. 2.
 — — — *ramosissima*. 3. Australia. 1824.
 — — — *sacicola*. B. M. t. 3160. See *Thryptomene sacicola*.
 — — — *virgata*. 3. September. New Caledonia. 1806. B. M. t. 2127.

Bæobotr'ys indica (B. M. t. 2052). See **Mæsa indica**.

B. pubescens. See *Mæsa pubescens*.

Bæ'ria. (Named after Professor Bær, of the University of Dorpat. Nat. ord., *Compositæ*; Tribe, *Helenioidæ*. Allied to *Callirhoe*.)

Hardy border annuals. Seeds, in March and April; common soil.

- B. chryso'stoma*. 1. Yellow. May. California. 1835. Swt. Fl. Gard. ser. 2, t. 395.
 — — — *gracilis*. Yellow. California. Syn., *Burrielia gracilis*. B. M. t. 3758.

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 André, not of Seemann, which is now reduced by *Pterandra*. (After J. G. Baker, F.R.S., of Kew. Nat. ord., *Bromeliaceæ*.)

Stove or warm greenhouse treatment.

B. tillandsioides. 1½. Rosy-purple. Brazil. Rev. Hort. 1889, p. 84.

Balaninus nucum. The Nut-weevil. See **Co'rylus**.

Balan'tium. See **Dickso'nia**.

Balbi'sia. (Dedicated to *Giovanni Battista Balbis*, a Professor of Botany at Turin. Nat. ord., *Geraniaceæ*.)

A beautiful half-hardy evergreen shrub, requiring a cool, but dry atmosphere, being very liable to damp off. Seeds; or cuttings of the half-ripe wood, in sand, under a hand-glass. Light sandy loam. May be planted out in summer, but does best in a dry greenhouse.

B. verticillata. 3 to 6. Yellow. Chili. 1846. Syn., *Ledocarpum verticillata*. B. M. t. 6170.

Balcony. A word probably derived from the Persian, signifying an ornamentally-barred window, and now 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.

Ballo'ta. (The Greek name. Nat. ord., *Labiatae*.)

Stove or half-hardy annual.

B. cinerea. See *Roylea elegans*.
— *suaveolens*. Blue. West Indies. 1889.

Balm. See **Meli'ssa**.

Balm of Gilead. *Cedrone'lla triphy'lla*.

Balsam and Balsamina. See **Impatiens**.

Balsam Apple. *Momo'rdica balsami'nea*.

Balsam of Cape'vi. *Copa'i'fera*.

Balsam-tree. *Ciu'sia*.

Balsami'ta. (From *balsamon*, greasy; the plants being greasy to the touch. Nat. ord., *Compositæ*; Tribe, *Anthemideæ*.)

B. grandiflora. Yellow. 1884.

Balsamode'ndron. (From *balsamon*, balm, or balsam, and *dendron*, a tree. Nat. ord., *Bursaraceæ*.)

Stove trees. Sandy loam, and a little leaf-soil; cuttings of ripe young wood in April, under a glass, and in heat.

B. madagascariense. Whitish, Anthers yellow. July and August. Madagascar. Syn., *Commiphora madagascariensis*, Jacq. H. Schœn. t. 249.

— *zeylanicum*. 30. White. Ceylon.

Baltimo'ra. (Commemorative. Nat. ord., *Compositæ*.)

Stove herb, of little beauty. Seeds. Rich loam. Ordinary stove treatment.

B. re'cta. 1. Yellow. July. Syn., *Fougerouzia re'cta*.

Bambu'sa. Bamboo Cane. (From *bambos*, its Indian name. Nat. ord., *Gramineæ*.)

Very ornamental greenhouse or hardy shrubs. The latter thrive best in a well-drained soil, in a sheltered position, and are extremely beautiful outdoor shrubs in the southern counties, where they rarely get damaged in winter. *B. Fortunei*, the variegated kinds *nana*, *Ragamoskii*, and others are very useful rock plants. Suckers, in spring or autumn; rich loam.

B. arista'ta. 20. E. Ind. 1824.

— *arundina'cea*. 40. E. Ind. 1730.

— *au'rea*. 10. China. Hardy.

— *Castillo'ni*. Stems square, variegated. Japan. 1886. Rev. Hort. 1886, p. 513.

— *Fortunei*. 2. Japan. Hardy. There is a variety of this, *B. argenteo-vittata*. Fl. Ser. t. 1535.

— *gra'cilis*. See *Arundinaria falcata*.

— *heterocy'cla*. Japan. 1878.

— *japo'nica*. See *Arundinaria Metake*.

— *Maximowi'czii*. Japan. Hardy.

— *vitta'ta*. Striped variety.

— *Meta'ke*. See *Arundinaria Metake*.

— *mi'tis*. 40. Japan and Cochin China.

— *na'na*. 8. India. 1826. Hardy. Syn., *B.*

glauca and *viridi-glaucese'ns*.

— *ni'gra*. See *Phyllostachys nigra*.

— *pube'scens*. 20. E. Ind. 1826.

— *Quilic'i*. N. Japan. 1869. Syn., *B. Duquilloi*.

— *Ragamoskii*. Turkestan. 1879. Hardy. Syn.,

B. tessellata.

— *Simo'ni*. 10. Leaves some green, others

white. Hardy. China. 1866.

— *spino'sa*. 20. E. Ind. 1820.

— *stria'ta*. Purple, stems striped with yellow.

China. 1874.

— *stri'cta*. See *Dendrocalamus strictus*.

— *sulphu'rea*. Stems and branches sulphur-

yellow. 1873.

— *tessella'ta*. Leaves bright green above, bluish-

green beneath, yellow in autumn.

Japan. 1888. Syns., *B. palmata* and

Verticillata and *Arundinaria kurilensis*,

var. *punctulata*.

— *variegata*. N. China. Leaves white-striped.

Hardy. Syn., *B. Fortunei niveo-vittatis*.

There are several other variegated kinds,

such as *argenteo-stria'ta*, *au'reo-stria'ta*.

— *verticilla'ta*. See *Gigantochloa verticillata*.

— *viola'scens*. China. 1869.

— *viridi-stria'ta*. 2. Leaves striped with yellow

and green. Japan. 1869.

— *Weisene'ri*. Japan. 1887.

Bana'na, or **Plantain**. *Musa*.

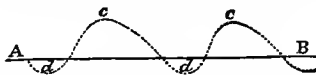
Bane-Berry. *Actaea*.

Baniste'ria. (Named after the *Rev. J. Banister*, a zealous botanist. Nat. ord., *Malpighiaceæ*.)

Stove trees or shrubs sometimes climbing. Sandy loam, leaf-soil, and peat; cuttings of half-ripened wood in heat under glass.

- B. auri-culata*. See *Stigmaphyllon auriculatum*.
 — *chrysophylla*. Deep orange. Brazil. 1793.
 Jacq. H. Schen. t. 105.
 — *ciliata*. 10. Yellow. Brazil. 1796.
 — *dichotoma*. See *Stigmaphyllon convolutifolium*.
 — *emarginata*. See *Stigmaphyllon emarginatum*.
 — *ferruginea*. 10. Yellow. Brazil. 1820.
 — *fulgens*. 6. Yellow. W. Ind. 1759.
 — *heterophylla*. See *Stigmaphyllon fulgens*.
 — *Humboldtiana*. 19. Yellow. S. Amer. 1824.
 — *laurifolia*. 10. Yellow. Jamaica. 1733.
 — *nitens*. See *Heteropterys*.
 — *ovata*. See *Brachypterys borealis*.
 — *pleriplocephala*. See *Stigmaphyllon pleriplocephalum*.
 — *sericea*. 6. Yellow. July. Brazil. 1810.
 — *sinemariensis*. See *Stigmaphyllon puberum*.
 — *splendens*. 10. Yellow. S. Amer. 1812.
 Syn., *B. fulgens*.
 — *tennis*. See *Heteropterys glabra*.
 — *tiliifolia*. See *Stigmaphyllon Humboldtianum*.
 — *tomentosa*. See *Stigmaphyllon emarginatum*.
 — *zanzibariensis*. See *Acridocarpus zanzibarius*.

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, etc., will produce eight days earlier than when cultivated on a level; while the north side will retain lettuces, etc., during summer, much longer fit for the table. The surface of the ground is also increased, notwithstanding 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



gives 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.

Banksia. (Named after *Sir Joseph Banks*, a distinguished patron of natural history. Nat. ord., *Proteaceæ*.)

All interesting greenhouse evergreen shrubs, from Australia. Seeds, when obtainable, should be sown in spring, in sandy peat, and placed in the greenhouse; the seedlings should be 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 may be obtained by cuttings of the ripened shoots, with most of the leaves attached, inserted round the sides of a pot, placed under a hand-light, kept close, and shaded from sunshine during the day, the glass should be removed occasionally and wiped. Sandy peat, with a little loam to the more strong-growing.

- B. æmula*. 20. Yellow. 1824. B. M. t. 2671.
 Syns., *B. elatior* and *B. undulata*, B. R. t. 1316.
 — *attenuata*. 6. Yellow. 1794. Syn., *B. cylindrostachya*.
 — *australis*. See *B. marginata*.
 — *Baueri*. Red.
 — *Baxteri*. 8. White.
 — *Brounii*. 1830.
 — *Calleyi*. 6. 1830.
 — *coccinea*. 6. Scarlet. 1803.
 — *collina*. 6. Yellow. 1800. B. M. t. 3060.
 Syns., *B. Cunninghami*, *ledifolia* and *litoralis*.
 — *compar*. See *B. integrifolia*, var. *compar*.
 — *Cunninghamii*. See *B. collina*.
 — *cylindrostachya*. See *B. attenuata*.
 — *dentata*. 4. Yellow. 1822.
 — *Dryandroides*. 6. Yellow. 1822.
 — *elatior*. See *B. æmula*.
 — *ericifolia*. 6. Yellow. 1788. B. M. t. 738.
 — *ferrea*. See *B. marginata*.
 — *Goodei*. 1830.
 — *granitis*. 2. Yellow. 1794.
 — *Hookeriana*. 6. Purple. 1853.
 — *Hugleyi*. Yellow. 1837.
 — *hypoleuca*. See *B. marginata*.
 — *ilicifolia*. Scarlet. 1837.
 — *insularis*. See *B. marginata*.
 — *integrifolia*. 12. Yellow. 1788. Syns., *B. macrophylla*, *B. oleifolia* (B. M. t. 2770), and *Hakea pubescens*.
 — — *compar*. 6. Yellow. 1824.
 — *patudoosa*. 2. Yellow. March. 1805.
 — *latifolia*. 30. Green. July. 1802. B. M. t. 2406.
 — *ledifolia*. See *B. collina*.
 — *litoralis*. See *B. collina*.
 — *macrophylla*. See *B. integrifolia*.

- B. marcescens*. 6. Yellow. 1794. Syn., *B. præmorsa*, Andr. Rep. t. 253.
 — *marginata*. 6. Yellow. July. 1804. Syn., *B. australis*, *ferrea*, *hypoleuca*, *insularis* and *oblongifolia*.
 — *me'dia*. 6. Yellow. 1824. B. M. t. 3120.
 — *Menziesii*. Yellow. 1837.
 — *nutans*. 4. Yellow. June. 1803.
 — *oblongifolia*. B. C. t. 241. See *B. marginata*.
 — *occidentalis*. 8. Red. April to August. King George's Sound. B. M. t. 3535.
 — *oleifolia*. See *B. integrifolia*.
 — *paludosa*. B. R. t. 697. See *B. integrifolia*, var. *paludosa*.
 — *prostrata*. 2. Yellow. 1824.
 — *puiche'lla*. 6. Yellow. 1805.
 — *quercifolia*. 5. Yellow. 1805. B. M. t. 1430.
 — *repens*. 3.
 — *serrata*. 20. Red. B. R. t. 1316.
 — *Solan'dri*. 6. 1830.
 — *speciosa*. 6. Yellow. July. 1805.
 — *spinulosa*. 6. Yellow. August. 1788. Andr. Rep. t. 457.
 — *sphaerocar'pa*. 6. Yellow. 1803.
 — *undulata*. B. R. t. 1316. See *B. æmula*.
 — *verticillata*. 12. Yellow. August. 1794. Hook. Ex. Fl. t. 96.
 — *Victo'riae*. 12. Yellow. Swan River. 1842. B. M. t. 4906.

Ba'obab-tree. *Adansonia*.

Ba'phia. (From *baphe*, a dye; the Camwood or Barwood, from which a brilliant red-colour is obtained, is from *B. nitida*. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ*. Allied to the Carob-tree.)

Stove tree. Cuttings; sandy peat and loam. *B. nitida*. 30. White. August. Sierra Leone. 1793. B. C. t. 367.

Baptisia. (From *bapto*, to dye; some of the species, notably *B. tinctoria*, possessing dyeing properties. Nat. ord., *Leguminosæ*; Tribe, *Podalyriæ*. Allied to Podalyria.)

All hardy herbaceous plants useful for borders or beds. Division or seeds, the latter in sandy soil in the open or in pans in cold frame.

- B. alba*. 2. White. June. N. Amer. 1724. B. M. t. 1177. Syn., *Podalyria alba*.
 — *auriculata*. Blue. June. N. Amer. 1812.
 — *australis*. 2½. Blue. June. N. Amer. 1758. B. M. t. 509.
 — *confusa*. Blue. June. N. Amer. 1812.
 — *exaltata*. 3. White. June. N. Amer. 1724. Swt. Fl. Gard. t. 97.
 — *lanco'la* ta. 1. Yellow. July. N. Amer. 1818.
 — *leucophæ'a*. White. July. N. Amer. 1870. B. M. t. 5900.
 — *mi'nor*. 1½. Blue. June. N. Amer. 1829.
 — *mo'ris*. 1½. Blue. June. N. Amer. 1824.
 — *perfolia'ta*. 3. Yellow. August. Carolina. 1732. B. M. t. 3121.
 — *tinctoria*. 3. Yellow. July. N. Amer. 1750. B. C. t. 588. Syn., *Podalyria tinctoria*. B. M. t. 1099.
 — *versicolor*. 4. Light purple. July. N. Amer. 1824.
 — *villo'sa*. 2. Yellow. June. N. Amer. 1811.

Barbace'nia. (Named after *M. Barbacena*, a governor of Minas Geraes. Nat. ord., *Amaryl'lidæ*; Tribe, *Vellosiæ*.)

Handsome stove herbaceous perennials. Divisions; sandy loam.

- B. gra'cilis*. See *Dasy'virion acrotrichum*.
 — *purpu'rea*. 1½. Purple. July. Brazil. 1825.
 — *Rogie'rii*. 1½. Purplish-violet. July. 1859.
 — *hybrida'e*. Fl. Ser. t. 1152.
 — *sangui'nea*. Deep crimson. 1847.
 — *squam'a'ta*. ½. Bright red. March. Brazil. 1841, reintroduced 1890. B. M. t. 4136.

Barbadoes Cedar. *Juni'perus barbade'nsis*.

Barbadoes Cherry. *Malpi'ghia*.

Barbadoes Gooseberry. *Pere'skia*.

Barbadoes Lily. *Hippea'strum egue'stre*.

Barbadoes Pride. *Adena'nthera pavoni'na*.

Barba'rea. Winter Cress. (From being formerly called the herb of *Sta. Barbara*. Nat. ord., *Crucifera'e*; Tribe, *Arabide'e*. Allied to *Arabis*.)

All hardy herbaceous perennials, except *B. stri'cta*. *B. vulgaris* furnishes a wholesome salad. Division or seed; common soil.

- B. arcua'ta*. 2. Yellow. July. Germany. 1833. Eng. Bot. ed. 3, t. 121.
 — *ortho'e'rus*. 1½. Yellow. June. Siberia.
 — *pra'cox*. 1. Yellow. April to October. England. Eng. Bot. ed. 3, t. 124. Early Belle-isle cress or American cress.
 — *vulga'ris*. 1½. Yellow. May to August. Britain. Eng. Bot. ed. 3, t. 129.
 — *stri'cta*. Yellow. Britain. Hardy biennial. Raised from seed. Eng. Bot. ed. 3, t. 122.
 — *variega'ta*. A pretty form. It comes true from seed.
 — *fo're ple'no*. A handsome border plant with double flowers.

Barbe'ria. See *Barleriola*.

Barberry. (*Be'rberis vulga'ris*.)

There are several varieties of the Common Barberry: the red berried, 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.

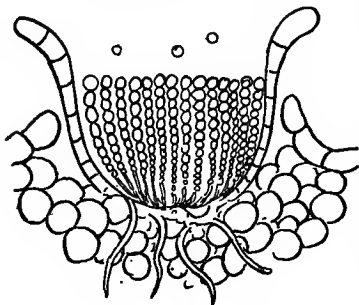
Propagation.—Suckers, cuttings, and layers may be employed, either in the spring or autumn. Seeds, if sown soon after being collected, will germinate in spring.

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. 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 blight, which causes the green leaves to assume a chalky-white appearance. This is known to be a stage in the life-history of the same fungus as that which is the mildew on wheat; but they are still placed in different genera. That which preys upon the Barberry is *Aecidium berberidis* (shown in our figure), and that which attacks Wheat is *Puccinia graminis*.



Barbie'ria. (Named after *J. B. G. Barbier, M.D.*, a French naturalist. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. Allied to *Cajanus*.)

An ornamental stove evergreen shrub. Cuttings of half-ripened wood in sand, under a glass; sandy peat and loam.

B. polyphylla. Reddish-purple. Porto Rico. 1818. Syns., *Chitorea polyphylla* and *Galaetia pinnata*.

Bark. The refuse bark from the tanner's yard is employed by the gardener as a source of heat, and, when thoroughly broken down by decay, as a manure.

As a source of heat, it is much less used than formerly, the hot-water system having very generally and most deservedly superseded it. Bark for heating requires frequent stirring and renewing, and, if too much moisture be added, is apt to give out an excessive and irregular heat. In addition, it is a troublesome harbour for predatory insects.

Bark fresh from the tan-yard, being thrown lightly together under a shed, must be gently moistened, if dry, and turned over twice a week, to expose it thoroughly to the air. Unless this be

done the fermentation will not be general or regular. This is to be continued for a month or five weeks, in warm weather the shorter time being requisite; and then, having acquired a general and equal heat, it is ready for use in the stove. Usually it will continue to afford heat for a period varying between three and six months, but sometimes ceases to ferment without any apparent cause. Whenever the heat declines, the tan must be taken out, sifted, the dusty parts removed, and some fresh tan added. Sometimes turning the old tan and moistening it will be sufficient.

It is desirable, on the first formation of a bed, to mix new and old tan together, in which case the quantity of new bark to be brought into the pit will depend upon the quality of the bark, and the bottom-heat required. As much new tan as will fill two-third parts of the pit, with a mixture of old, rotten, reduced almost to earth, will produce a bottom-heat of about 85°. When old tan with higher remains of strength is used to modify the new, the same heat may be produced if the quantity be not more than half the capacity of the pit. This refers to a new pit. After a bark-bed has been in action, partial renewals of bark, to keep up the heat, are frequently sufficient, in the reduced proportion of one-third, one-sixth, one-twelfth, or less. At intermediate stages between the partial renewals, the bed requires only to be excited to a brisker fermentation by forking up. About five-sevenths of the pit from the bottom should be occupied by the new and old tan as a fermenting body; and about two-sevenths from the top, or a little more than the depth of the pot, whatever that may be, should consist of old tan incapable of heating, so as to burn the roots of the plants. At least, such should be the ordinary distribution of the tan; but, where peculiar circumstances require a speedy augmentation of heat without displacing the pots, and when fruit is to be swelled off in the last stage, the earthy tan at top may be taken away, and new tan substituted.

As a manure. — See **Vegetable Matters.**

Bark. The exterior part of the stem of plants.

Bark-bound. When a tree is affected with this disease, cracks will appear in it partially, and, in the case of the Cherry, Apricot, Peach, and Nectarine, gummy discharge will follow. It is a sure indication that either the

soil is too rich or not sufficiently drained. The latter is usually the source of the evil. Under-draining, and scrubbing the stem with brine, often effects a cure. Scoring the bark lengthwise with a knife is a rude mode of treatment, often followed by canker, more fatal than the disease intended to be removed. If scoring be adopted, it should be done early in spring; and the knife should not penetrate below the dry, outer bark.

Bark Stove, or Moist Stove, is a hothouse which, either by having a mass of fermenting matter, or an open reservoir of hot water, has its atmosphere appropriately supplied with moisture, congenially with the habits of some tropical plants. It received the name of Bark Stove, because tanner's bark was formerly a chief source of the heat employed. See **Stove**.

Barke'ria. See **Epidendrum**.

Barking Irons, or Bark Scalers, are for scraping off the hard outer bark, or dry scales from the stems and branches of trees.

Bar'klya. (In honour of Sir H. Barkly, Governor of S. Australia. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ*.)

Greenhouse tree. Loam and leaf-soil. Seeds or cuttings of half-ripened wood under a bell-glass.

B. syringæfol'ra. 30. Pink. Moreton Bay. 1858.

Barle'ria. (After the Rev. J. Barrelier, of Paris. Nat. ord., *Acanthaceæ*.)

Ornamental stove evergreens, except *B. longifolia*. Seeds or cuttings of the perennial species of young wood under a bell-glass in heat. Rich loam and peat.

B. a'iba. 3. July. N. Holland. 1815. B. C. t. 360.

— *buzi'folia.* 2. White. July. E. Ind. 1768.

— *cæru'lea.* 2. Blue. July. E. Ind. 1823.

— *sponta'nea.* 2. Blue. July. E. Ind.

1820. Syn., *B. strigosa*.

— *crista'ta.* 2. Blue. July. E. Ind. 1796.

— *dicho'toma.* 2. Purple. July. E. Ind. 1823.

— *fla'va.* 3. Yellow. July. E. Ind. 1816.

Syn., *B. mitis*, B. M. t. 4113.

— *Gibbs'ni.* Purple. India. 1867. B. M.

t. 5628.

— *involuta'ra ela'ta.* 6. Dark blue. Singapore.

1890.

— *Leichtensteini'na.* S. Africa. 1870. G. C.

1870, p. 73.

— *longifo'ra.* 3. July. E. Ind. 1816.

— *longifo'lia.* 2. White. August. E. Ind.

1751.

— *lupu'na.* 2. Yellow. August. Mauritius.

1824.

— *Macke'ni.* Purple. Spring. Natal. 1870.

B. M. t. 5866.

— *mitis.* See *B. flava*.

— *monta'na.* 2. Purple. September. E. Ind.

1818. B. C. t. 844. Syn., *B. purpurea*.

— *prioni'tis.* 3. Orange. July. E. Ind. 1759.

— *purpu'ra.* See *B. montana*.

B. repens. Rose. E. Trop. Africa. 1887. B. M. t. 6954.

— *solanifo'lia.* See *Barberiola solanifolia*.

— *strigo'sa.* See *B. cœrulea*, var. *spontanca*.

Barleri'ola. (From *Barleria*. Nat. ord., *Acanthaceæ*.)

B. solanifo'lia. 2. Blue. W. Ind. Syn., *Barberia solanifolia*.

Barley. (*Ho'rdeum vulga're*.) This genus of grasses, being interesting only to the farmer and botanist, has not been included in this work.

Barnade'sia. (After *Barnadez*, a Spanish botanist. Nat. ord., *Compositæ*; Tribe, *Mutistaceæ*.)

B. ro'sea, a very pretty deciduous shrub, requiring to be kept nearly dry, in a greenhouse, in winter. Seeds, in hotbeds, in March; cuttings of half-ripened wood in April, in sand, under a bell-glass.

B. grandifo'ra. 2. Pale rose. S. Amer. 1844. An evergreen requiring a cool stove or intermediate house.

— *ro'sea.* 1. Pink. May. S. Amer. 1840. B. M. t. 4232.

— *spino'sa.* 4. June. Peru. 1825. This has been called *Baca'zia spino'sa*. Greenhouse evergreen.

Barna'rdia. (Named after *E. Barnard*, F.L.S. Nat. ord., *Lilacææ*.) See **Scilla**.

B. scilloides. See *Scilla chinensis*, B. R. t. 1029.

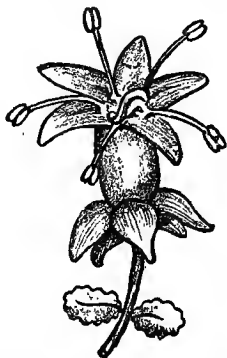
Baro'meter, or Weather Glass, so called from two Greek words, signifying a measurer of weight, because it indicates the weight or pressure of the air. We only admit a notice of this because, as a guide to approaching changes of weather, it is useful to the gardener.

Mr. P. Christenson, of Cowes, in the Isle of Wight, lecturer upon astronomy, etc., has arranged a table, which no one having a weather-glass should be without. This "Companion to the Barometer" is the result of thirty-two years' observation; and the following is an epitome of the information it gives. During the first six months of the year, when the mercury is *rising*, if the weather has been bad, and the mercury reaches to 29·62 inches, there will be a change; if to 30·12, the weather will be fair; if to 30·29, set fair. If the mercury has been high, and begins *falling*, there will be a change if it declines to 29·90; rain, if it descends to 29·50; and wind, with rain, if it reaches 29·12. During the last six months of the year, if the weather has been foul, and the mercury begins *rising*, there will be a change if it reaches to 29·48; fair, if to 30·13; and set fair if to 30·45. If the weather has been fair, and the mercury begins *falling*, there will be a change if it sinks to 29·87; rain, if to 29·55; and wind with rain, if

to 29·28. At any time of the year, if the mercury fall to 28·10, or even to 28·20, there will be stormy weather. These conclusions are from observations made at thirty feet above the sea's level, and, therefore, one-hundredth part of an inch must be added to the height of the mercury for every additional ten feet above the sea's level, where the barometer may happen to be.

Baro'sma. (From *barys*, heavy, and *osme*, odour; referring to the powerful scent of the leaves. Nat. ord., *Rutaceæ*. Allied to *Diosma*.)

Greenhouse evergreen shrubs, all natives of the Cape. Cuttings of half-ripened wood in June, under a bell-glass, in sand, without heat; sandy loam and peat.



- B. betulina*. 2. White. February to September. 1790. Syn., *Diosma crenata*, B. C. t. 404.
 — *crenolata*. 3. Bluish. April. B. M. t. 3413.
 — *dioica*. 2. White. June. 1816. B. R. t. 502.
 — *latifolia*. 1. White. July. 1789.
 — *ovata*. 2. White. May. 1790. Syn., *Diosma ovata*, B. M. t. 1616.
 — *pulchella*. 1 to 3. Purple. February. 1787. B. M. t. 1357.
 — *serratifolia*. 1 to 3. White. March to June. 1789. B. M. t. 456. Syn., *Diosma serratifolia*.

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. The male or staminate flowers of the cucumber, melon, and other monœcious plants are particularly known as *barren* flowers; and the plants of the asparagus, mercury, and other dicecious plants bearing only male flowers, are usually termed *barren*, *i.e.*, they do not produce fruit. There is also a barrenness arising from disease, or the consequences of bad cultivation. If a tree, or any other plant, does not yield the desired produce of fruit of which it

is capable, the gardener may be assured that the soil, bad drainage, the manuring, or the pruning, is injurious. Even a blind or barren cabbage may be made productive; for its barrenness arises from the central bud being abortive, and it will produce lateral buds, if all but one leaf and the place of the abortive bud be cut away. When a flower has no pistil it is incurably barren. A very high temperature caused a water-melon to bear male blossoms only; and a very low temperature made cucumber-plants yield female flowers alone. Mr. Knight had little doubt that the same fruit-stalks might be made, in the plants just noticed, to support flowers of either sex, in obedience to external causes. Our own observations lead us to the conclusion that the cucumber and vegetable marrow, when grown in too cold a temperature, produce a majority of *male* blossoms.

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 earths or of water; 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 of course the cure for an excess of water.

Barrenwort. *Epime'dium*.

Barringtonia. (Named after the Hon. Daines Barrington. Nat. ord., *Myrtaceæ*. Syn., *Stravadium*.)

Stove evergreen trees and shrubs, difficult to cultivate well. Cuttings of ripe shoots with all the leaves left on, under a glass, in a strong heat; lumpy loam and peat.

- B. acutangula*. 20. Purple. Moluccas. 1822. Syn., *Stravadium acutangulum* and *rubrum*.
 — *echinata*. 20. White. Moluccas. 1820.
 — *platyphylloides*. 3. White. June. Moluccas. 1806.
 — *racemosa*. 30. Red. Moluccas, Malabar and Delta of the Ganges. 1820. B. M. t. 3831. Syn., *Eugenia racemosa*, *Stravadium racemosum*.
 — *speciosum*. 2 to 8. Scarlet. Indian Archipelago. 1786.

Barro'tia panche'ri. See **Pandanus**.

Bartholin'a. (Named after *Bartholin*, a Danish physiologist. Nat. ord., *Orchidaceæ*. Allied to *Serapias*.)

One of those terrestrial orchids from the Cape which we have not yet succeeded in cultivating easily. Greenhouse orchid; division of the root; sandy loam.

B. pectinata. 1. Lilac. November. Cape. 1787. B. R. t. 1653. Syn., *Arethusa ciliaris*.

Barto'nia. (Named after *Dr. Barton*, an American botanist. Nat. ord., *Loasaceæ*. In the *Genera Plantarum* this is regarded as a section of *Mentzelia*.)

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. aurea* does best in a light sandy soil.

ANNUALS.

B. albescens. 2. White. Chili. 1831. Swt. Fl. Gard. 2, t. 182.
— *aurea*. 3. Yellow. June. California. 1834. B. M. t. 3649.

BIENNIALS.

R. nuda. 2. White. August. Missouri. 1811. B. M. t. 5483.
— *ornata*. 2. White. August. Missouri. 1811. Syn., *B. decapetala*, B. M. t. 1487.

Bartsia. (Named after *J. Bartsch*, M.D. Nat. ord., *Scrophulariaceæ*. Allied to *Euphrasia*.)

These require the treatment of choice alpine; hardy annuals; seeds in April, on rock-work; difficult to manage well.

B. alpina. $\frac{1}{2}$. Purple. August. Britain. Eng. Bot. ed. 3, t. 995.
— *coccinea*. See *Castilleja*.
— *latifolia*. See *Eufragia latifolia*.
— *odontites*. $\frac{3}{4}$. Pink. August. Britain. Eng. Bot. ed. 3, t. 993.
— *pallida*. See *Castilleja pallida*.
— *viscosa*. $\frac{1}{2}$. Yellow. July. Britain. Eng. Bot. ed. 3, t. 994.

Barwood. *Baphia nitida*, an African dye-producing wood.

Baryosma. See **Barosma**.

B. Tongo. See *Dipterix odorata*.

Base'la. Malabar Nightshade. (Its Malabar name. Nat. ord., *Chenopodiaceæ*.)

B. alba and *rubra* are used as spinach in the East Indies. Stove biennials, except where otherwise specified, and mostly climbers. If sown in good heat in February, and treated as a border annual, they will bloom freely the same season; rich, lumpy soil.

B. alba. 8. White. August. E. Ind. 1688.
— *cordifolia*. 6. Pale purple. August. E. Ind. 1802.
— *lucida*. 6. White. August. E. Ind. 1802.
— *marginata*. See *Boussingaultia*.
— *nigra*. 3. White. August. China. 1822. Greenhouse.
— *ramosa*. 6. August.
— *rubra*. 8. Pink. August. E. Ind. 1731.
— *tuberosa*. 6. Yellow. September. S. Amer. 1824.

Basil. (*Ocimum*.) There are two kinds, the Sweet-scented (*O. basilicum*), and the Dwarf-bush (*O. minimum*). 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 such purposes. 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 previous to planting, which will be better done 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 apart, and water them, to settle the earth to the roots. Attend to watering 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.

Basing-up. 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:

Pottle—a long, tapering basket, made of deal shavings, holding about a pint and a half.

Sea-kale punnets—eight inches diameter at the top, and seven inches and a half at the bottom, and two inches deep.

Radish punnets—eight inches diameter, and one inch deep, if to hold six hands; or nine inches by one inch for twelve hands.

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.

Bushel sieve—ten imperial gallons and a half. Diameter at top, seventeen inches and three quarters; at bottom, seventeen inches; depth, eleven inches and a quarter.

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. 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.

Baskets (Rustic). These are often suitable ornaments for the reception of flowering-plants upon lawns, and other parts of the pleasure-grounds and 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 ten or eight 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, or, what is more expensive and troublesome, but certainly more ornamental, cover the sides with (split or whole, as you may fancy) hazel rods, 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 doing to it after it is neatly fitted and securely nailed to the sides; but the hazel rods should have a coating of boiled linseed-oil applied.

Baskets, formed of various materials such as wire, wood, terra-cotta, cork, etc., are now largely used for the adornment of rooms, corridors, windows, etc., filled with handsome foliaged or flowering plants. Ferns make a charming display when tastefully arranged in them. In filling the baskets, the inside should first be lined with moss, next to which a layer of fibry loam, and finally the soil most suitable to the plants. Baskets and cylinders made of oak are generally used for orchids. The truck basket, made of willow wood, is generally used in gardens now. It is both light and durable.

Bass or Bast Mats. These are chiefly made in Russia, from the inner bark of trees (*bast* in the Russ language). They are very serviceable, however, to place over beds of early spring radishes, etc., to prevent the night radiation. This is quite as effectual, much cleaner, and less troublesome than a covering of straw. Shreds of these mats are also useful for many gardening purposes where a ligature or string is required. One of the principal of these is for binding a bud or scion in its place on the stock after grafting. For this 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. In selecting a mat for this purpose, the best may be distinguished by two or three qualities:—First, whatever colour the bast be, it must feel silky and somewhat oily to the touch. A full reliance must not be placed on this alone, however; but the strength should be tested by cutting off a fine-looking strand, and stripping off a narrow piece as fine as twine. This, if good, should withstand a considerable amount of tension.

Ba'ssia. (Named after *M. Bassi*, curator of the Botanic Garden at Boulogne. Nat. ord., *Sapotaceæ*.)

The *Bassias* are trees of some importance in India. *B. butyra'cea* yields a thick, oil-like butter from its fruit, or *mahua*. *B. latifo'lia* furnishes a kind of arrack, called *moura*, by distilling the leaves. The fruit of the Illupie-tree, *B. longifo'lia*, yields oil for lamps, soap-making, and also for food; and Mungo Park's Butter-tree was a species of *Bassia*. Stove trees. Cuttings of ripened young shoots in April, in heat, under a bell-glass; peat and loam.

- B. butyra'cea*. 30 to 70. Nepanl. 1823. Brandis F. Flor. t. 35.
 — *latifo'lia*. 40. Yellow. E. Ind. Bedd. Fl. Syl. t. 41.
 — *longifo'lia*. 40. E. Ind. 1811. Bedd. Fl. Syl. t. 42.

Bata'tas. (Aboriginal name. Nat. ord., *Convolvulaceæ*. This genus is joined by Hooker and Bentham to *Ipomœa*.)

All free-growing stove or greenhouse deciduous climbers, excellent for pillars or trellis-work. 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 fibry peat, with manure-water when growing. They require to be kept comparatively dry while dormant.

- B. beta'cea*. 6. Pale violet. Demerara. 1839. B. R. 1840. t. 56.
 — *bignonioid'es*. Dark purple. July. Cayenne. 1824. B. M. t. 2645.
 — *bonarie'nsis*. 10. Purple. Pax. Mag. vol. 8, p. 25.
 — *Cavanille'sii*. White, red. August. 1815.
 — *edulis*. White, purple. E. Ind. 1797. Sweet Potato.
 — *glauco'lia*. Purplish. June. Mexico. 1732.
 — *heterophylla*. Blue. September. Cuba. 1817.
 — *jata'pa*. Rose. August. Mexico. 1845.
 — *panicula'ta*. Purple. July. E. Ind. 1799. B. R. t. 75.
 — *pentaphylla*. White. August. E. Ind. 1739. Wight, Icon. t. 334.
 — *senegale'nsis*. White. July. Guinea. 1823.
 — *terna'ta*. White. July. Brazil. 1824. Syn., *Ipomœa ternata*.
 — *veno'sa*. Purple. July. Mauritius. 1820. Syn., *Ipomœa venosa*.
 — *Walde'ckii*. White and purple. S. Amer. 1847.
 — *Willdeno'vii*. Purple. July. 1818. Syns., *Ipomœa heterophylla*, *Pharbitis 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., *Orchidaceæ*. Allied to *Maxillaria*.)

Easily grown and usually free-flowering stove orchide; divisions and offsets; peat and sphagnum; plant raised considerably above the surface of pot, or suspended in shallow baskets.

- B. armilla'ta*. Green, white. 1875. Rchb. Xen. t. 316.
 — *Bur'tii*. Brown, yellow, purple, white. Costa Rica and Ecuador. 1872. B. M. t. 6003.
 — *Colleyi*. ½. Purple, green. August. Demerara. 1834. B. R. t. 1714; B. M. t. 3818.
 — *imbrata*. See *Galeottia imbrata*.
 — *grandiflora*. Olive, brown, white, purple. New Grenada. 1866. Syn., *Galeottia grandiflora*. B. M. t. 5687.

- B. le'pida*. Brownish-red, white. Brazil.
 — *melea'gris*. White at base, tessellated with purplish-brown on a yellow ground. June. Brazil. 1838. Syn., *Huntleya melea'gris*.
 — *Walli'sii*. 1. Brown, crimson. Columbia. 1876.

Ba'tschia. (Named after *J. G. Batsch*, a German botanist. Nat. ord., *Boraginææ*.) See *Lithospermum*.

B. caroline'nsis and *Gmelin'i*. See *Lithospermum hirtum*.

Bau'era. (Named after *Francis and Ferdinand Bauer*, German botanical draughtsmen. Nat. ord., *Saxifragææ*.)

Useful greenhouse evergreen shrubs, flowering nearly throughout the year. Cuttings in sandy soil, under a glass; sandy loam and peat.

- B. hu'milis*. 1. Red. September. N. S. Wales. 1804. B. C. t. 1197. By some this is regarded as synonymous with *B. rubioides*.
 — *rubioid'es*. 1½. Pink. September. N. S. Wales. 1798. Andr. Rep. t. 198, B. M. t. 715. Syn., *B. rubra'folia*.
 — *microphylla*. Slender and prostrate. Port Jackson. Syn., *B. gatioides*, Rchb. Ic. Exot. t. 77.

Bauhi'nia. Mountain Ebony. (Named after the brothers *John and Caspar Bauhin*, botanists in the sixteenth century. Nat. ord., *Leguminosæ*; Tribe, *Bauhinieæ*.)

All showy 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.

- B. aculea'ta*. 6. White. W. Ind. 1737.
 — *acumina'ta*. 8. White. July. E. Ind. 1808.
 — *angui'ta*. 30. White. E. Ind. 1790. Climber. Syn., *B. scandens*.
 — *arma'ta*. 6. White. Brazil. 1824. Climber.
 — *auri'ta*. 6. White. August. Jamaica. 1756.
 — *chine'nsis*. 6. Red. China. 1800. Greenhouse.
 — *corymb'osa*. 6. White. Summer. E. Ind. 1818. Climber. B. M. t. 6621.
 — *cumane'nsis*. 20. White. July. Cumana. 1826. Climber. B. R. t. 1133.
 — *divarica'ta*. See *B. Lamarckiana*.
 — *ferrug'i'nea*. 10. White. E. Ind. 1820. Climber.
 — *forfeca'ta*. 6. White. Brazil. 1823. B. M. t. 3741.
 — *glabra*. 15. White. Carthage. 1810. Climber.
 — *glauco'scens*. 6. White. Cumana. 1817.
 — *grandiflora*. 4. White. Pern. 1820.
 — *h'ndica*. 6. White. E. Ind. 1820.
 — *ine'rmis*. 6. Yellow, red. Acapulco. 1810.
 — *Lamarckiana*. 6. White. S. Amer. 1818. Syns., *B. divaricata* and *retusa* of some authors.
 — *latifo'lia*. 6. White. W. Ind. 1818.
 — *leptope'tala*. 5. Yellow, green. New Spain. 1818.
 — *luna'ria*. 6. White. Acapulco. 1820.
 — *madagascarie'nsis*. 4. Madagascar. 1826.
 — *malaba'rica*. 15. White. E. Ind. 1810. Climber.
 — *microphylla*. 6. White. S. Amer. 1817.
 — *multine'rvia*. 20. White. Caraccas. 1808.
 — *natale'nsis*. White. Natal. 1870. B. M. t. 6088. Greenhouse.
 — *Pauli'ta*. 4. White. Panama. 1877.
 — *petiola'ta*. White. Autumn. Columbia. 1862. B. M. t. 6277. Syn., *Casparia spectosa*.

- B. porrécta*. White or rosy. October. W. Indies. 1815. B. M. t. 1708. Syn., *Casparia porrecta*.
 — *pubéscens*. 4. White. Jamaica. 1778.
 — *purpuréa*. 6. Purple. E. Ind. 1778. Rev. Hort. 1835, t. 249.
 — *racemosa*. 20. White. E. Ind. 1790. Stove climber. Bedd. Fl. Syl. t. 182.
 — *retusá*. 7. White. E. Ind. 1820.
 — *rotundifolia*. 6. White. Acapulco. 1820. Syn., *B. subrotundifolia*.
 — *scandens*. See *B. anguina*.
 — *seoiá*. 10. White. 1820. Stove climber.
 — *subrotundifolia*. See *B. rotundifolia*.
 — *tomentosa*. 6. Yellow, white, with red spot on claw. E. Ind. 1808.
 — *glabra*. This is *tomentosa* without being downy. Yellow, purple. 1866.
 — *triaandra*. 15. White. E. Ind. 1823. Stove climber.
 — *variegata*. 6. Striped. June. E. Ind. 1790. B. M. t. 6818.
 — *chinensis*. Lilac, with purple spot. China. Greenhouse.

Bean. See **Faba** and **Phaseolus**.

Beatonia. (Named by Dr. Herbert after *D. Beaton*, a Scotch gardener; one of the contributors to the "Cottage Gardener" and to this "Dictionary." Nat. ord., *Iridaceæ*; Tribe, *Moreæ*.) See **Tigridia**.

B. purpuréa. See *Tigridia violacea*.

Beaucarnea. (A commemorative name. Nat. ord., *Liliaceæ*.)

Curious greenhouse ornamental foliaged plants. Seeds, cuttings when obtainable. Rich fibrous loam and sand, with plenty of water while growing.

- B. glauca latifolia*. 3. Mexico. A robust form of *B. glauca*.
 — *gracilis*. Mexico. 1845. Probably the same as *B. Hartwegiana*.
 — *Hookeri*. 3. Purplish. Mexico. 1846. B. M. t. 5099. Syn., *Dasyliirion Hartwegianum* and *Hookeri*.
 — *longifolia*. 10. White. Mexico. 1868. Syn., *Dasyliirion longifolium*.
 — *recurvata*. White. Mexico. 1861. Syn., *Pincenictitia tuberculata*. G. C. 1870, p. 1445.
 — *intermedia*. Leaves shorter, less recurved.
 — *rubra*. Leaves red at base.
 — *stricta*. Mexico. 1870. Syn., *Pincenictitia glauca*.

Beaufortia. (Named after *Mary Duchess of Beaufort*. Nat. ord., *Myrtaceæ*.)

Handsome free-flowering greenhouse evergreen shrubs. Cuttings of half-ripened shoots, under a glass, in sand, without heat; loam and peat.

- B. carinata*. 3. Scarlet. N. Holland. 1823.
 — *Dampieri*. 2. Pink. May. Hartog's Island. B. M. t. 3272.
 — *decussata*. 3. Scarlet. May. N. Holland. 1803. B. M. t. 1733.
 — *macrostemon*. Purple. July. Australia. 1843.
 — *purpuréa*. Purple. July. Australia. 1841.
 — *sparsa*. 3. Scarlet. West Australia. 1803. Pax. Mag. vol. 12, p. 145. Syn., *B. splendens*.

Beaumontia. (Named after *Mrs. Beaumont*, of Bretton Hall, Yorkshire. Nat. ord., *Apocynaceæ*.)

Handsome 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 an intermediate house. Cuttings of half-ripened wood; rich, lumpy loam and peat.

- B. grandiflora*. 20. White. June. E. Ind. 1820. B. M. t. 3213.
 — *longifolia*. 20. White. E. Ind. 1818.
 — *speciosa*. Garden, vol. xxxii.

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 is a mode of sowing seed. In this method, the ground being dug, and formed by alleys into beds, four or five feet wide, each alley being a spade's width or more between bed and bed, and the earth being drawn off the top of the bed with a rake or spade, half an inch or an 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 cast over the bed, well covering the seeds, and the surface is raked smooth.

The method of bedding-in sowing by sifting is sometimes practised for very small seeds of a more delicate nature, that require a very light covering of earth when sown. To bury them as shallow as possible, they are covered by sifting fine earth over them.

Bedding-out is removing plants from the pots or boxes in which they have been growing into the beds where they are intended to remain during the summer and autumn. The following is a list of flowers for bedding-out, arranged according to their colours, the first-named being the most dwarf:—*White*.—

Verbena pulchella, Lobelia Erinus albus, Campanula pusilla, Campanula carpatica alba, Senecio elegans flore albo, White Ivy-leaved Geranium, White-flowered horse-shoe Geranium, Phlox Drummondii white, Double White Snapdragon, *Oenothera taraxifolia*, *Ce. speciosa*, Nierembergia calycina, Variegated sweet Alyssum, Calendula hybrida, White Clarkia, Petunia nyctaginiflora; White Salvia patens. *Scarlet*.—Of Verbenas, Boule de Feu, Inglesfield Scarlet, or fulgens, Melindre's latifolia, Satellite, and Emperor of Scarlets; of Geraniums, Shrubland Scarlet, Tom Thumb, Improved Frogmore, Gem of Scarlets, Royalist, and Compactum. *Purple*.—Of Verbenas, Walton's Emma, Heloise, Venosa, and Sabina; Petunia phoenicea, Lobelia unidentata, Lantana Sellowii, and Phlox Drummondii. *Pink*.—Saponaria calabrica, Silene Shaftæ, Silene pendula, Silene compacta; of Geraniums the Pink Ivy-leaf, Mangle's variegated Pink, Pink Nosegay, Judy, Lucia rosea, and Diadematum; Anagallis carnea; of Verbenas, Miller's Favourite, Beauty Supreme, Duchess of Northumberland, and Standard of Perfection. *Yellow*.—Tagetes tenuifolia, Sanvitalia procumbens; of Calceolarias, integrifolia, rugosa, Kayii, viscosissima, corymbosa, and amplexicaule; Orange African Marigold, Double Yellow French Marigold, and Coreopsis lanceolata. *Blue*.—Lobelia Erinus and ramosa, Charieis heterophylla, Salvia chamædrioides, and Isotoma axillaris.

Bedeguar. See *Cynips rosæ*.

Bedfo'rdia. (Named in honour of the Duke of Bedford. Nat. ord., *Compositæ*; Tribe, *Senecioideæ*. Allied to Senecio.)

Greenhouse evergreen shrub. Cuttings a little dried before inserting them in rough, sandy soil; sand, peat, loam, and brick rubbish, in equal proportions.

B. salic'na. Yellow. April. 1820. Syn., *Cacalia salicina*, B. R. t. 923.

Beet. There are two sections of this esteemed vegetable cultivated by gardeners.

1. Leaf Beet. *Beta Cicla*, and *B. maritima* were cultivated at one time, for the leaves and midrib, which were boiled and used as Spinach. Some of the varieties of *B. Cicla*, when well blanched are said to equal Asparagus. Those grown for this purpose now are Beck's Seakale, Perpetual, Spinach, Silver, etc.

2. Red Beet (*B. vulgaris*). The varieties now in cultivation are somewhat numerous, every seedsman having

a particular strain. Pine Apple, Nutting's dwarf red, Red Castelnaudary, Dell's Crimson, selected blood-red, Carter's Perfection, etc., are among the red-fleshed kinds. Small yellow and long yellow are the best of the yellow fleshed. Egyptian turnip rooted, is a fine flavoured variety, excellent for summer salads.

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 esteemed; and it may be remarked that on poor, light soils, or heavy ones, the best sorts will taste earthy. The situation should be open and free from the shade of trees. 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 sown until the severe frosts are over, which inevitably destroy the seedlings when young. The best time for sowing 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 apart, and an inch deep. The Brazil Beet requires eighteen inches between the rows.

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, though transplanting is not generally satisfactory. 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 covered 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. The seed is often benefited by being steeped in water before sowing.

Beet for bedding purposes.—Brazilian, Ornamental Chilean, Carter's new flower garden, Belvoir Castle, and Dell's Crimson, are all highly ornamental foliaged plants. For this purpose the seeds may be sown in the reserve garden, and the young plants transferred to the flower garden, at bedding-out time. When a bed or line in the ribbon border is required, it will be best to sow there, and thin out to the required distance.

Befaria. (Named after *M. Bejar*, a Spanish botanist. Nat. ord., *Eriaceae*. Syn., *Bejaria*.)

Greenhouse evergreen shrubs, except where otherwise specified. Cuttings of young wood, firm at the base; loam and peat.

- B. aestuans*. 12. Rose. Peru. 1846. G. C. 1848, p. 119.
- *cinnamomea*. Peru. 1874.
- *coarctata*. 5. Purple. Peru. 1847. B. M. t. 4433.
- *glauca*. 8. Purple. June. New Grenada. 1826. Stove evergreen.
- *ledifolia*. 5. Purple. May. 1847. Fl. Ser. t. 194.
- *Lindenia*'na. Pink. Peru. 1847. Pax. Fl. G. vol. 1, p. 84.
- *Matthewsii*. Yellow. March. Peru.
- *racemosa*. 4. Purple. June. Florida. 1810.
- *tricolor*. Crimson yellow. Peru.

Begonia. (After *M. Begon*, a French patron of botany. Nat. ord., *Begoniaceae*.)

Stove evergreen shrubs, except where otherwise specified. Many freely by seeds, sown as soon as ripe, or in the following spring; cuttings in spring or summer, after drying their base, inserted in sandy soil, in a little heat, also by buds from the leaves when laid on sand, and the principal veins cut across. The tuberous kinds are easily propagated in abundance by division, when beginning to grow, and they will stand more cold in winter by 5° or 10° than the others; peat and sandy loam, and thoroughly-decayed dung.

- B. acerifolia*. 3. Whitish. Brazil. 1829
- *acida*. 1. White. Brazil. 1847.
- *acuminata*. 1. White. August. W. Indies. 1816.
- *acutifolia*. 1. White. August. W. Indies. 1816.
- *acutiloba*. White. Mexico. Syn., *B. purpurea*.
- *acnea*. Leaves purplish-coppery. Assam. 1871.
- *alba-plata*. Leaves glossy green, spotted silvery white. Brazil. 1885.
- *albo-coccinea*. 1. White, scarlet. E. Indies. 1844.
- *alchemilloides*. Rose. Brazil.
- *ambilis*. Rose or white. Assam. 1869.
- *Ame'lia*. Rose. Hybrid between *B. Bruantii* and *B. Roezlii*.
- *amarna*. Pale rose. N. India. 1878. Syn., *B. erosa*.
- *ampla*. 1 to 2. Rose. Guiana.
- *aptera*. 3. White. July. Stove herbaceous perennial.
- *arborescens*. 8. White. Brazil.
- *argentea*. Assam. 1859

- B. argyrostigma*. See *B. maculata*.
 — *Arno'ttii*. See *B. cordifolia*.
 — *ascote'nsis*. 3. Bright red. 1874. A hybrid?
 — *aucubaefolia*. See *B. incarnata*.
 — *auriculaeformis*. White. Guatemala. 1850.
 — *aurifol'rmis*. See *B. incana*.
 — *bacca'ta*. White. Isle of St. Thomas. 1866.
 — *barba'ta*. White or pink. India.
 — *Barke'ri*. 4. White. January. Mexico. 1837.
 — *Bavama'nni*. 1. Carmine-rose. 1890.
 — *Beado'mei*. Pink. December. Assam Hills. 1883. B. M. t. 6767.
 — *bipe'tala*. See *B. dipetala*.
 — *biserra'ta*. 2. Pale pink. June. Guatemala. 1847. B. M. t. 4746.
 — *Bowringia'na*. Rose. Hong Kong. 1858. B. M. t. 5667.
 — *Brua'ntii*. White or rose. Hybrid between *B. Schmidtii* and *B. semperflorens*. 1883.
 — *bulbi'fera*. 1. Pale pink. July. Peru. 1827. Greenhouse herbaceous perennial.
 — *ca'fra*. A variety of *B. Dregei*.
 — *carotineaefolia*. 2. Rose. Winter. Mexico. 1876.
 — *Carrie'ri*. Garden hybrid. 1884.
 — *castaneaefolia*. 2. Pink. February. Brazil. 1838.
 — *Ce'lbia*. White. August. Brazil. 1883.
 — *Chelso'ni*. Orange-red. Hybrid between *B. sedeni* and *B. boliviensis*.
 — *cinnabari'na*. Vermilion. Bolivia. 1848. B. M. t. 4483.
 — *Cla'rkiti*. Rose. Bolivian Andes. 1867.
 — *cocci'nea*. 3. Scarlet. April. Brazil. 1842. B. M. t. 3980. A garden hybrid also received the same name in 1889.
 — *co'mpta*. Leaves satin green, midrib tinged silver. Brazil.
 — *conchaefolia*. Pinkish. Mexico. 1851.
 — *coralli'na*. Red. Brazil. 1875.
 — *cordifolia*. ½. Winter. India. Syn., *B. Arnot-tiana*.
 — *coria'cea*. ½. Red. Summer. Bolivia.
 — *crasicauli'bis*. 3. Whitish-pink. February. Guatemala. 1842.
 — *Credne'ri*. Hybrid between *B. Scharffiana* and *B. metallica*. Gf. 1890. p. 562.
 — *crimi'ta*. 1. Rose. July. Bolivian Andes. 1866.
 — *cuculla'ta*. A variety of *B. semperflorens*.
 — *cyclophy'lia*. Rose-pink. S. China. B. M. t. 6926.
 — *dada'lea*. Pinkish; leaves brown-netted. Mexico. 1861.
 — *Daveaua'na*. See *Peltionia Daveauana*.
 — *Davi'sii*. ½. Crimson-scarlet. July. Peru. 1876.
 — *sup'rbra*. Crimson. Double-flowered. 1881.
 — *de'cora*. Leaves dark green, dotted silvery grey. Brazil.
 — *diade'ma*. Leaves green, blotched white. Borneo. 1882. Ill. Hort. t. 446.
 — *dicho'toma*. 2. White. Caraccas. Winter. 1860.
 — *digita'ta*. 3. White. June. Brazil. Stove herbaceous perennial.
 — *Dignovellia'na*. Pale pink. Winter. Garden hybrid.
 — *dipe'tala*. 3. Pink. July. India. 1828. B. M. t. 2849. Syn., *B. bipetala*.
 — *di'ptera*. 1. White. July. S. Africa. 1822.
 — *discolor*. See *B. Evansiana*.
 — *diversifolia*. See *B. gracilis*.
 — *Drege'i*. 2. White. July. S. Africa. 1838. Syn., *B. ca'fra* and *B. reniformis*.
 — *du'bia*. 1. White. July. Brazil. 1818. Stove herbaceous perennial.
 — *echinose'pala*. 1. White. June. Brazil. 1872. Gf. t. 707.
 — *egre'gia*. White. Brazil. 1887.
 — *elli'ptica*. See *B. scandens*.
 — *B. ere'cta multiflora*. Bright reddish-pink. Garden variety.
 — *ero'sa*. See *B. amena*.
 — *Evansiana*. 2. Flesh-coloured. E. Asia. 1812. B. M. t. 1804. Syn., *B. discolor* and *B. grandis*.
 — *exi'mia*. Hybrid between *B. rubro-venia* and *B. Thwaitesii*.
 — *fagi'lia*. 3. White. April. Brazil. 1838.
 — *fagopyroi'des*. 3. White. Caraccas.
 — *falcifolia*. 1. Rose. Winter. Peru. 1867. B. M. t. 5707.
 — *ferrugi'nea*. Red. Summer. Bogota. Syn., *B. magnifica*.
 — *Fische'ri*. 2. June. Brazil. 1835. B. M. t. 3532.
 — *floribu'nda*. Pink, white. 1882.
 — *folio'sa*. White. Columbia. 1868. A good basket plant. Ref. Bot. t. 222.
 — *fri'gida*. 1. White. 1860. B. M. t. 5160.
 — *Frabe'tii*. Scarlet. Winter. Ecuador. 1874.
 — *verna'lis*. December to March. 1879.
 — *fuchsioi'des*. 5. Scarlet. December. New Grenada. 1844. B. M. t. 4281.
 — *minia'ta*. Cinnabar red. Fl. Ser. t. 787.
 — *gemmi'para*. 1. White, or with rose stripes. Summer. Himalayas.
 — *geraniifo'lia*. 2. Pale red. September. Lima. 1833. Stove, tuberous rooted.
 — *geranioid'es*. White. Natal. 1866. B. M. t. 5683.
 — *glandulifera*. ½. White. February. Trinidad. 1867.
 — *glandulosa*. ½. Greenish-white. Costa Rica. 1854. B. M. t. 5256. Syn., *B. her-nandiaefolia* and *B. nigro-venia*.
 — *goegeo'nsis*. Pink, white. Sumatra. 1881.
 — *gracilis*. Pink. Mexico. 1829. B. M. t. 2906. There are several varieties, such as *annulata*, *diversifolia*, and *Martiana*.
 — *grandisifera*. See *B. octopetala*.
 — *grandi's*. See *B. rex*, *B. Evansiana*, and *B. vitifolia*.
 — *Griffithii*. ½. White. E. Indies. 1856. B. M. t. 4984.
 — *gunneraefolia*. White. Columbia. 1875.
 — *Haega'na*. White. Mexico. 1886.
 — *Haska'rrii*. See *B. pellata*.
 — *heracleifolia*. 2. Rose. Spring. Mexico. 1831. B. M. t. 3444. Syn., *B. jatrophefolia*, *B. punctata*, and *B. radiata*.
 — *longy'lia*. Leaves greyish in centre, bronzy around, blotched green.
 — *ni'gricans*. White. Leaves with blackish margins. B. M. t. 4983.
 — *puncta'ta*. Rose, spotted red on outside.
 — *herba'cea*. ½. White. March. Brazil. 1873. Syn., *B. attenuata*.
 — *hernandiaefolia*. See *B. glandulosa*, *B. nehum-bisfolia*, and for B. M. t. 4676. *B. pellata*.
 — *hirsu'ta*. See *B. humilis*.
 — *hirt'la*. 1. White. September. 1824. Stove herbaceous perennial.
 — *Hooker'i*. See *B. semperflorens*.
 — *Hookeria'na*. 5. White. Spring. Brazil. 1850.
 — *homo'nyma*. 3. White. June. Brazil.
 — *hu'milis*. ½. White. Summer. Trinidad. 1788. Syn., *B. hirsuta*. *B. humilis* of B. R. t. 294 is *B. suaveolens*.
 — *hybrida floribu'nda*. Bright rose. Summer. Hybrid between *B. fuchsioides* and *B. multiflora*.
 — *multiflora*. Pink. Winter. 1882.
 — *hydrocotylifolia*. 1. Rose. Summer. Mexico. 1841. B. M. t. 3968. Stove herbaceous perennial.
 — *usari'folia*. White. Mexico.
 — *hybrida*. 1½. Pink. March.
 — *imperii'bis*. ½. White; leaves olive-green, with bright green venation. Mexico. 1861.

- B. imperialis smaragdina*. $\frac{1}{2}$. White; leaves emerald-green. Mexico. 1861.
- *inca'na*. White. Winter. Mexico. 1838. Stove herbaceous perennial.
- *auriflor'nis*. Flowers glabrous.
- *incarna'ta*. 2. Pink. Brazil. 1829. Syn., *B. acubæfolia*, *B. insignis*, and *B. Lindleyana*. B. M. t. 2900.
- *maculo'sa*. White spots on the leaves.
- *meto'llica*. Leaves bronzy-purple.
- *papillo'sa*. Leaves with rose-coloured margins. B. M. t. 2846.
- *purpu'rea*. Leaves deep bronzy-purple.
- *Ingra'mi*. Scarlet. Hybrid between *B. fuchstoides* and *B. nitida*. 1849.
- *ins'gnis*. See *B. incarna'ta*.
- *involuta'ra*. $1\frac{1}{2}$. White. Winter. Central America.
- *jatrochæfo'lia*. See *B. heracleifolia*.
- *Jaur'e'zi*. Semi-double garden variety. 1890.
- *Johnsto'ni*. 1. Pale rose. E. Trop. Africa. 1837. B. M. t. 6899.
- *Jos'e'phi*. 1. Rose. Summer. Himalayas.
- *kalli'sta*. Fl. and Pom. 1877, p. 221.
- *Knowlley'a*. G. C. 1832, vol. 18, p. 435.
- *Kunthia'na*. White. Tropical America. 1862. B. M. t. 5284.
- *lacinia'ta*. 2. White. E. Indies. B. M. t. 5182. Syn., *B. Bouringiana*.
- *lauri'na*. 3. Pink. July. Stove herbaceous perennial.
- *Lemahou'tii*. White tinged rose. 1889.
- *Leopo'laii*. Hybrid between *B. Griffithii* and *B. splendida*. 1858.
- *Lindley'a*. 3. White. Winter. Guatemala.
- *linea'ta*. $\frac{1}{2}$. Pale pink. Java. 1882.
- *longipes*. 3. White. March. Mexico. 1828. B. M. t. 3001.
- *longipi'ta*. Leaves greyish-ribbed. Mexico. 1861.
- *Lubbe'ruii*. White. Brazil. 1884. Belg. Hort. 1883, t. 13.
- *lu'cida*. See *B. scandens*.
- *luzuri'ans*. Bluish-white. S. America.
- *Lynche'da'na*. 1. Deep crimson. Winter. Mexico. 1880. B. M. t. 6758. Syn., *B. Roze'zii*.
- *macrophy'la*. 3. White. July. Jamaica. 1793.
- *macula'ta*. White to red. Summer. Brazil. 1821. B. R. t. 666. Syn., *B. argyrostigma*.
- *coralli'na*. Coral-red.
- *magn'fica*. Carmine. New Grenada. 1870.
- *manica'ia*. 3. Pale pink. Winter. Mexico. 1842.
- *Ma'nmit*. 3. Rose-red. Winter. Fernando Po. 1862. B. M. t. 5434.
- *Margari'tæ*. Garden hybrid. Rev. Hort. 1884, p. 200, f. 48.
- *marmo'rea*. A variety of *B. xanthina*.
- *Martia'na*. 3. Pink. July. Brazil. 1829. Stove tuberous-rooted.
- *racemifo'ra*. Flowers darker than in the type. 1836.
- *ma'xima*. 6. White. Mexico.
- *megaphy'la*. White. Winter. Mexico.
- *meta'llica*. 1. Pink. Mexico. 1875.
- *Meye'ri*. 3. White. February. Brazil. 1838.
- *microphy'la*. See *B. foliosa*.
- *micro'ptera*. $1\frac{1}{2}$. White, pink. December. Borneo. 1856.
- *Meysselia'na*. Leaves olive-green, spotted white. Sumatra. 1833.
- *minia'ta*. See *B. fuchstoides*.
- *mono'ptera*. 2. White. Brazil. 1826. B. M. t. 3564.
- *Mortzia'na*. See *B. scandens*.
- *multibulbillo'sa*. 2. White. Brazil. 1830. Stove tuberous-rooted.
- *murica'ta*. 3. White. September. Brazil. Stove herbaceous perennial.
- B. natalensis*. Pale rose. Winter. Natal. 1865. B. M. t. 4841.
- *nekumbi'fo'lia*. 1 to 2. White or rose. Winter. Mexico. Syn., *B. bernandæfolia*.
- *nemo'phila*. See *B. Cathartii*.
- *ni'gro-ve'nia*. See *B. glandulosa*.
- *ni'tida*. 4. Deep rose. Jamaica. 1777. B. M. t. 4046. Syn., *B. obliqua*, *B. pulchra*, and *B. purpurea*.
- *obli'qua*. See *B. nitida*.
- *Octa'vie*. Garden hybrid. 1889.
- *octope'tala*. 2. Greenish-white. Autumn. Peru. 1835. B. M. t. 3559. Syn., *B. grandiflora*.
- *Lemo'nei*. Garden hybrid. Rev. Hort. 1889, p. 32, f. 7.
- *odora'ta*. See *B. suaveolens*.
- *Ohlendorffia'na*. 1. Pink? Brazil. 1879. Syn., *B. plantanifolia* *Ohlendorffiana*.
- *opulifo'ra*. 1. White. Spring. New Grenada. 1854.
- *Ottonia'na*. Hybrid between *B. conchæfolia* and *B. coriacea*. 1859.
- *palma'ta*. 1. White. August. Nepal. 1819.
- *papillo'sa*. See *B. incarna'ta papillosa*.
- *parvifo'ra*. White. 1881.
- *parvifo'lia*. 3. White. May. S. Africa. 1836.
- *pa'tula*. 3. Pink. Brazil. 1889.
- *Pea'rcei*. Yellow. Summer. Bolivia. 1865.
- *petia'ta*. $\frac{3}{4}$. White. Brazil. 1815. Syn., *B. coriacea*, *B. Hasskarltii*, *B. bernandæfolia*, and *B. pettifolia*.
- *pettifo'lia*. See *B. pettata*.
- *pentaphy'la*. 3. White. July. Brazil.
- *phylomania'ca*. Pale rose; stem clothed with minute leaves. Winter. Guatemala. 1861. B. M. t. 5254.
- *pi'cta*. 1. Pink. August. Himalayas. 1818.
- *plantanifo'lia*. 6. Palepink. Summer. Brazil. 1834. B. M. t. 3591.
- *polype'tala*. Red. Winter. Andes of Peru. 1878.
- *prestonie'nsis*. Orange-red. Hybrid between *B. cinnabarina* and *B. nitida*.
- *prismatoc'arpa*. $\frac{3}{4}$. Yellow. Summer. Fernando Po. 1861. B. M. t. 5307.
- *pruina'la*. White. Central America. 1870.
- *pulche'ra*. $\frac{3}{4}$. White. July. Brazil. 1823. Stove annual.
- *pu'lehra*. See *B. nitida*.
- *puncta'ta*. See *B. heracleifolia*.
- *purpu'rea*. See *acutifolia* and *nitida*.
- *Putzeysia'na*. White. Winter. Venezuela. 1871.
- *radia'ta*. See *B. heracleifolia*.
- *radic'ans*. A climber.
- *ramenta'ca*. Pink and white. Spring. Brazil. 1830. Stove herbaceous perennial.
- *renifo'rnis*. See *B. Dragei* and *B. vitifolia*.
- *rez*. Pink. Assam. 1858. B. M. t. 5101. There is also a variety *grandis*.
- *rhizo-car'lis*. Pink. August. 1856.
- *Richardsia'na*. 1. White. Natal. 1871.
- *diad'e'ma*. Rose. Summer. 1831. Probably a hybrid.
- *ricini'fo'lia*. Pink. Leaves green to bronze. 1882.
- *Ro'e'zii*. Whitish. Peru. 1876.
- *rosa'cea*. $\frac{1}{2}$. White. September. New Grenada.
- *rosæfo'ra*. $\frac{1}{2}$. Bright rose. July. Andes of Peru. 1866.
- *rube'la*. Leaves bronzy-green, with pale green veins; red beneath. India. 1833.
- *rubricar'lis*. 1. White, tinged rose outside. Summer. Peru. 1834. B. M. t. 4131.
- *rubro-ve'nia*. 1. White, rose. Summer. India. 1852. B. M. t. 4689.
- *rupe'stris*. 2. Pink. April. Brazil. Stove herbaceous perennial.
- *ru'tilans*. 4. White, rose. October. 1855.
- *sagitta'ta*. Pink. S. America. 1868.

- B. Sandersoni*. Pink. 1882.
 — *sanguinea*. 3. White. Spring. Brazil. 1829.
 — *scabrifolia*. White. Venezuela. 1857.
 — *scandens*. White. South America. 1874.
 Syns., *B. elliptica*, *B. lucida*, and *B. Moritziana*.
 — *septrum*. Brazil. 1883.
 — *Scharfiana metallica*. Garden hybrid. 1890.
 — *Schmidtiana*. 1. White. Brazil. 1879.
 — *scutellata*. See *B. conchaeifolia*.
 — *sedeni*. Hybrid between *B. boliviana* and *B. Veitchii*.
 — *selloi*. White. September. Stove herbaceous perennial.
 — *semperflorens*. White or rose. Autumn. Brazil. 1829. Syn., *B. spathulata*, B. M. t. 2920. Varieties: *carminea*, *grandiflora*, *gigantea*, *rosea*, etc.
 — *sinuata*. 2. White. June. Brazil. 1836.
 — *socotra*. Rose-pink. December. Socotra. 1880. B. M. t. 6555.
 — *spathulata*. See *B. semperflorens*.
 — *stigmaea*. 1. White. Brazil. 1845.
 — *strigillosa*. Pink. Summer. Central America. 1851.
 — *suaveolens*. 1. White. Winter. Central America. 1816. B. C. t. 69. Syn., *B. odorata*.
 — *sulcata*. 3. White. Columbia.
 — *Sutherlandii*. 1 to 2. Orange. June. Natal. 1862. B. M. t. 5689.
 — *Teuschleri*. Leaves deep green, spotted and blotched with whitish; margins red. Dutch Indies. 1879.
 — *Thwaitesii*. White. Ceylon. 1852. B. M. t. 4692.
 — *tomentosa*. 3. White. Brazil.
 — *tuberosa*. 1. White. August. Amboyna. 1810. Stove tuberous-rooted.
 — *ulmifolia*. 2 to 4. White. Winter. Venezuela. 1854. B. C. t. 683.
 — *undulata*. 2. White. Winter. Brazil. 1826. B. M. t. 2723.
 — *urophylla*. White. Spring. Brazil. B. M. t. 4855.
 — *Veitchii*. Scarlet, yellow. Peruvian Highlands. 1867. Hardy.
 — *vendicta*. September. 1880.
 — *versicolor*. White, rosy. Brazil. 1869.
 — *Verschaffeltii*. Bright red. 1881.
 — *villosa*. 2. White. Brazil.
 — *vitifolia*. 3. White. Winter. Brazil. 1833. B. M. t. 3225. Syns., *B. grandis* and *B. reniformis*.
 — *Wagneriana*. 3. White. May. Venezuela. 1856. B. M. t. 4988.
 — *Wallensteinii*. Leaves dark green and chocolate. 1884.
 — *Wallichiana*. 3. White or rose. E. Indies.
 — *Warszewiczii*. See *B. conchaeifolia*.
 — *Weltoniensis*. Light pink. Garden hybrid. 1882.
 — *Willdenowii*. White, with small yellow disc. 1882.
 — *xanthina*. 1. Golden yellow. Summer. Bhotan. 1850. B. M. t. 4683.
 — *Lazuli*. Leaves purple, with bluish tinge.
 — *pectifolia*. Pale yellow. Leaves with silvery spots.

Bejaria. See **Befaria.**

Bellantheria. See **Brillan-taisia.**

Belladonna Lily. *Amaryllis belladonna.*

Bellesisle Cress. *Barbarea pro-coc.* See **American Cress.**

Bellendena. (Complimentary to

J. Bellenden Ker, an English botanist. Nat. ord., *Proteaceae.*)

Greenhouse shrub. Imported seeds and cuttings. Sandy peat.

B. montana. 1½. White. Tasmania.

Bellevalia. (Named after *P. R. Belleval*, a French botanist. Nat. ord., *Liliaceae.*) See **Hyacinthus.**

B. operculata. See *Hyacinthus romanus.*

Bell-Flower. *Campanula.*

Bell-glass, or cloche is so called from its usual form being that of a bell. It is formed of one entire piece, and of common bottle-glass, called cloche, and used for sheltering cauliflowers, etc., in the open borders; but of white, or very pale-green glass, for preserving moisture to cuttings. Formerly they were made with a top almost flat, whence, to prevent drip upon the cuttings, etc., it became necessary to wipe them frequently. They are now much improved by being cone-topped, because the moisture condensed consequently trickles down into the soil. Inverted they are useful as small aquaria, the smaller water plants being easily grown in them.

Bellidistrum. See **Aster.**

B. Michxii. See *Aster Bellidistrum.*

Bellis. The Daisy. (From *bellus*, pretty; referring to the flowers. Nat. ord., *Compositae*; Tribe, *Asteroideae.*)

All the cultivated kinds are hardy herbaceous perennials. Seeds, but chiefly division of the roots; common soil. There are now numerous garden varieties of the daisy, both single and double, white and red, and these are largely used in spring bedding, etc.

B. hybrida. 1. White. April. Italy. 1824.

— *integrifolia*. 1. White, pink. July. Texas. 1801. B. M. t. 3455.

— *perennis*. 1. White. June. Britain. This is the common Daisy. Eng. Bot. ed. 3, t. 772.

— *aucubaefolia*. Red; leaves white-veined.

— *conspicua*. Red.

— *fistulosa*. 1. Red. June.

— *hortensis*. 1. Red. June.

— *prolifera*. 1. Striped. June. Commonly called *The Hen and Chickens.*

— *rotundifolia caerulea*. See *Bellium rotundifolium caeruleum.*

— *sylvestris*. 1. White. June. Portugal. 1797.

B. M. t. 2511.

Bellium. (From *bellis*, a daisy; the flowers being like the daisy. Nat. ord., *Compositae*; Tribe, *Asteroideae.*) This genus is reduced to *Bellis* in the *Genera Plantarum.*

Seeds and divisions; they thrive best in light sandy soil.

B. bellidistroides. 1. White. July. Italy. 1796. Hardy annual. Swt. Fl. Gard. ser. 2, t. 175.

— *crassifolium*. 1. Whitish-yellow. June. Sardinia. 1831. Half-hardy perennial. Swt. Fl. Gard. ser. 2, t. 278.

- B. intermedium*. $\frac{1}{2}$. White. August. Hardy herbaceous perennial.
 — *minusculum*. $\frac{1}{2}$. White. August. Levant. 1772. Hardy herbaceous perennial.
 — *rotundifolium*. $\frac{1}{2}$ to 1. White. Algeria. 1873.
 — *cœrulea scens*. Pale blue, yellow. Morocco. 1873. B. M. t. 6015. Syn., *Bellis rotundifolia cœrulescens*.

Bellows, formerly used for fumigating, but now replaced by the ordinary fumigators in general use. The sulphur bellows is used largely on vines, roses, etc., infected by mildew. It resembles those in ordinary use, with the exception of a fine rose attached to the nozzle, through which the flowers of sulphur is distributed.

Bell-Pepper. *Ca'psicum gro'ssum*.

Belope'rone. (From *belos*, an arrow, and *perone*, a band, or strap; in reference to the arrow-shaped connective. Nat. ord., *Acanthaceæ*. Allied to *Justicia*.)

Pretty stove evergreen shrubs. Cuttings; light loam, leaf-soil, sand, and peat.

- B. cilia'ta*. See *Dianthera*.
 — *oblonga'ta*. 3. Rosy-purple. September. Brazil. 1832. Belg. Hort. vol. 9, t. 9.
 — *viola'cea*. 3. Violet. New Grenada. 1859. B. M. t. 5244.

Belosp'e'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 or weights are fastened to the extremities of the shoots, to weigh them down into the position required; or by fastening them by a string to pegs driven into the ground. By this means the sap is diverted from the stronger to the weaker shoots.

Bengal Quince. *Ægle ma'rmeles*.

Benjamin-tree. *Fi'cus Benjami'na* and *Lau'r'rus Be'nzoin*.

Bentha'mia. (Named after George Bentham, Esq., F.R.S., a distinguished English botanist. Nat. ord., *Cornaceæ*.) See **Cornus**.

B. frugi'fera. See *Cornus capitata*.

Bera'rdia. (Named after *M. Berard*, a botanist of Grenoble. Nat. ord., *Bruniaceæ*.)

Greenhouse evergreen shrubs, from Cape of Good Hope, except *B. subacaulis*. Cuttings; divisions; common soil.

- B. glob'osa*. 2. White. July. 1816. Syn., *Brunia globosa*.
 — *microphylla*. 1. White. Syn., *Brunia microphylla*.
 — *palea'cea*. 2. White. July. 1791.

- B. phylicoi'des*. 2. White. July. 1805.
 — *subacaul'is*. $\frac{1}{2}$. Whitish. Mountains of W. Europe.

Berberido'psis. (From *Berberis*, and *opsis*, like; resembling the Barberry. Nat. ord., *Berberideæ*.)

Handsome hardy evergreen climbing shrub. Seeds or young cuttings in spring; layers in autumn. Ordinary garden-soil.

- B. coralli'na*. Crimson. Chili. 1862. B. M. t. 5343.

Berbe'ris. The Barberry. (From *berberys*, its Arabian name. Nat. ord., *Berberideæ*.)

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.

EVERGREENS.

- B. actinaca'ntha*. 3. Yellow. June. Straits of Magellan.
 — *angulo'sa*. Yellow. Northern India. 1844
 — *aquifol'ium*. 6. Yellow. April. N. Amer. 1823. Syns., *B. repens*, B. R. t. 1176, and *Mahonia aquifolia*.
 — *arista'ta*. B. M. t. 2549. See *B. umbellata*.
 — *asia'tica*. 4. Yellow. Nepaul. 1823. Syn., *B. hypoleuca*.
 — *aurahuac'ensis*. See *B. Lycium*.
 — *Bea'lei planifo'lia*. Yellow. China. 1850.
 — *buziifo'lia*. 3. Yellow. Straits of Magellan. 1827. Half-hardy.
 — *conci'nna*. 2. Yellow. Sikkim Himalaya. B. M. t. 4744.
 — *Daru'ni*. 2. Orange. May. South Chili. 1849. Ic. Pl. t. 672.
 — *dealba'ta*. 5. Yellow. May. Mexico. 1833. B. R. t. 1750.
 — *du'lois*. 8. Yellow. March. Straits of Magellan. 1830. Swt. Fl. Gard. t. 100.
 — *Ehrenbe'rgii*. Yellow, white. Mexico.
 — *e'legans*. See *B. Lycium*.
 — *emargina'ta*. 3. Yellow. May. Siberia. 1790.
 — *empet'ri'fo'lia*. 2. Yellow. May. Straits of Magellan. 1827. Half-hardy.
 — *fascicula'ris*. See *B. pinnata*.
 — *Fortu'ni*. Yellow. July. China. 1846.
 — *gluma'cea*. 1. Yellow. N. W. America.
 — *heterophy'lla*. 4. Yellow. May. Straits of Magellan. 1805. A form of *B. vulgaris*.
 — *hy'brida autumn'a'lis*. 4. Orange. 1884.
 — *hypoleu'ca*. See *B. asiatica*.
 — *ili'ci'fo'lia*. 4. Yellow. July. Terra del Fuego. 1791. Fl. Ser. 1850, p. 68. A form of *B. vulgaris*.
 — *ine'rmis*. 2. Yellow. Straits of Magellan. 1827. Half-hardy.
 — *Jamieso'ni*. Yellow. Quito.
 — *japo'nica*. Japan.
 — *Leschenau'ttii*. 5. Yellow. Neilgherries.
 — *loze'nsis*. Yellow. Peru.
 — *lu'tea*. 18. Peru.
 — *Lycium*. Yellow. June. Himalaya. B. M. t. 1075. Syns., *B. aurahuacensis* and *B. elegans*.
 — *macrophy'lla*. J. Hort. Soc. 1850, p. 4, is *B. Wallichiana*; of others *B. asiatica*.
 — *mi'tis*. Yellow. N. Amer. 1834.
 — *nepale'nsis*. 4. Yellow. Nepaul.
 — *nervo'sa*. Yellow. June. N. Amer. 1804.
 — *pa'llida*. Yellow. April. Mexico. 1844. Greenhouse.
 — *pangharanghe'nsis*. 1848. Half-hardy.
 — *parvi'fo'ra*. 3. Yellow. May. S. Amer. 1846. Greenhouse.

- B. pinna'ta*. 8. Yellow. April. California. 1820. Syns., *B. fascicularis*, B. M. t. 2396, and *Mahonia fascicularis*.
 — *repens*. See *B. aquifolia*.
 — *ruscifolia*. 5. Yellow. May. Buenos Ayres. 1823. Greenhouse.
 — *stenophylla*, is a hybrid between *B. empetrifolia*, and *B. Darwinii*.
 — *tenusifolia*. Vera Cruz. 1836.
 — *tinctoria*. Yellow. Neilgherries.
 — *trifoliata*. Yellow. May. Mexico. 1839. Greenhouse.
 — *umbellata*. 6. Yellow. Nepaul. 1842. Syns., *B. aristata*, B. M. t. 2549, and *B. chitria*.
 — *undulata*. 6. Yellow. Peru.
 — *virgata* of J. Hort. Soc. is *B. parviflora*; of Hort. Koch, *B. actinacantha*.
 — *Wallichiana*. 4. Yellow. May Nepaul. 1820. Half-hardy.

DECIDUOUS.

- B. aristata*. 6. Yellow. N. India. 1825. Syns., *B. coriaria*, *B. umbellata*, B. R. 1844, t. 44, and *B. chitria*.
 — *canadensis*. 5. Yellow. May. Canada. 1759. Syns., *B. caroliniana* and *B. Fischeri*.
 — *comaria*. Yellow. June. Nepaul. 1841.
 — *coriaria*. See *B. aristata*.
 — *cratægina*. 6. Yellow. May. Asia Minor. 1829.
 — *cretica*. 3. Yellow. April. Candia. 1759.
 — *serratifolia*. Yellow. May. Candia. 1759.
 — *daurica*. 8. Yellow. May. Dauria. 1818.
 — *floribunda*. 10. Yellow. June. Nepaul.
 — *iberica*. 5. Yellow. May. Iberia. 1818. A form of *B. vulgaris*.
 — *provincialis*. 8. Yellow. June. France. 1821.
 — *rotundifolia*. Clear yellow. 1881.
 — *sibirica*. 2. Yellow. July. Siberia. 1790.
 — *Sieboldii*. Pale yellow. Japan. 1890.
 — *sineseis*. 4. Yellow. May. China. 1815.
 — *Thumbelgii*. Red, straw. April. Japan. 1882. B. M. t. 6646.
 — *trifurca*. China. 1852.
 — *umbellata*. B. R. 1844, t. 44. See *B. aristata*.
 — *virescens*. B. M. t. 7116. Syn., *B. Belstaniana*.
 — *vulgaris*. 10. Yellow. April. England. Engl. Bot. 3, t. 61.
 — *alba*. 8. Yellow. April.
 — *asperma*. 6. Yellow. April. Europe.
 — *du'lois*. Yellow. May. Austria. Evergreen.
 — *foliis purpureis*. 10. Yellow. May. 1841.
 — *glauca*. 10. Yellow. May.
 — *longifolia*. 10. Yellow. May.
 — *lu'tea*. 10. Yellow. May. Europe.
 — *mitis*. 10. Yellow. May.
 — *ni'gra*. 10. Yellow. May. Europe.
 — *purpurea*. 10. Yellow. May. Europe.
 — *violacea*. 10. Yellow. May. Europe.

Berchemia. (Named after *M. Berchem*, a French botanist. Nat. ord., *Rhamnaceæ*.)

Seeds, cuttings, and divisions; sandy loam and peat. All twiners. Greenhouse treatment for the two species first named. *B. volu'bilis* is hardy.

- B. floribunda*. White. Nepaul. 1827.
 — *linedata*. 8. Green. June. China. 1804.
 — *volu'bilis*. 15. Greenish white. June. Carolina. 1714.

Berge'ra. (Named after *M. Berger*, a botanist at Kiel. Nat. ord., *Aurantiaceæ*.) See *Murraya*.

- B. integerrima*. See *Micromelum pubescens*.

Be'rgia. (Named after *P. J. Bergius*, *M.D.* Nat. ord., *Elatinaceæ*.)

Hardy annual. Seeds; sandy soil.

- B. aquatica*. 1. Whitish yellow, stigmas red. June. Egypt. 1820. Roxb. Pl. Corom. vol. 2, t. 142. Syn., *B. verticillata*.

Berkhe'ya. (Named after *M. J. L. de Berkhey*, a Dutch botanist. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*. Allied to *Gorteria*.)

All from South Africa, and greenhouse evergreens, except where otherwise specified. Biennial species by seed, herbaceous ones by seed, but chiefly divisions, in epring; evergreens by cuttings under a glass, in sandy soil; sandy loam.

- B. cernua*. 1. Yellow. June. 1774. Stove biennial. Syn., *Didelta cernua*.
 — *cuneata*. 2. Yellow. June. 1812.
 — *cynaroides*. 1. Yellow. June. 1789. Greenhouse herbaceous.
 — *grandiflora*. 2. Yellow. July. 1812. B. M. t. 1844.
 — *inca'na*. 2. Yellow. July. 1793. Syn., *Gorteria asteroides*, Jacq. Ic. t. 591.
 — *obovata*. 2. Yellow. July. 1794.
 — *palmeta*. 3. Yellow. July. 1800.
 — *pectinata*. See *Cullumia pectinata*.
 — *pinna'ta*. 1. Yellow. July to November. 1813. Syn., *Stobæa pinna'ta*, B. M. t. 1788.
 — *purpurea*. 3. Purple. S. Africa. Syn., *Stobæa purpurea*, G. C. 1872, p. 1261.
 — *spinosissima*. 2. Yellow. July. 1821. Greenhouse herbaceous, Syn., *Rohria spinosissima*.
 — *uni'flora*. 3. Yellow. July. 1815. B. M. t. 2094.

Bermuda Cedar. *Juni'perus bermudiana*.

Berry. A succulent, indehiscent fruit formed of several united carpels, as in the gooseberry, currant, grape, and orange. The term is often used in a loose manner to include all succulent fruits, as raspberry, mulberry, etc.

Bertero'a. (Named after *C. J. Bertero*, a friend of Decandolle's. Nat. ord., *Cruciferae*; Tribe, *Alyssineæ*. Allied to *Alyssum*, with which *Bentham* and *Hooker* unite it.)

Biennial and perennial species from seed and cuttings; the shrubby and rather more tender species from cuttings under a hand-glass, in summer; garden-soil.

- B. inca'na*. 2. White. July. Europe. 1640. Hardy hiennial.
 — *mutabilis*. 2. White, pink. July. Levant. 1802. Hardy herbaceous perennial.
 — *obliqua*. 1. White. July. Sicily. 1823. Sbth. Fl. Gr. t. 626.

Bertholle'tia. Brazil or Para Nut. (Named after *L. C. Berthollet*, a distinguished chemist. Nat. ord., *Myrtaceæ*; Tribe, *Lecythideæ*.)

The Brazilian nuts of the shops are the produce of this stove evergreen tree. Cuttings of ripened wood, in sand, and in hottom-heat; peat and loam.

- B. excel'sa*. 100. Para.

Bertolo'nia. (In honour of *A. Ber-*

Coloni, an Italian botanist. Nat. ord., *Melastomaceæ*.)

Small creeping or dwarf growing stove plants, desirable on account of their ornamental foliage. Gentle moist heat, which may be best obtained under a bell-glass. Seeds or cuttings.

- B. ænea*. †. Purple. Brazil. A garden hybrid.
- *gutta*. See *Gravesia guttata*.
- *maculata*. †. Pink, purple. Brazil. 1850. B. M. t. 4451.
- *margaritacea*. See *Gravesia guttata*.
- *marmorata*. †. Purple. Brazil. 1853.
- *primulæfolia*. See *Monolena*.
- *pubescens*. Leaves varied green. Ecuador.
- *superbissima*. See *Gravesia guttata superba*.
- *vittata*, is a hybrid with pale rose flowers. 1879.

Berzélia. (Named after *Berzelius*, the celebrated chemist. Nat. ord., *Bruniaceæ*.)

Handsome greenhouse evergreen shrubs, from the Cape of Good Hope. Cuttings of half-ripened wood in sand, under a glass; loam and peat.

- B. abrotanoides*. 1‡. White. June. 1787. B. C. t. 355.
- *lanuginosa*. 3. White. July. 1774. B. C. t. 572.

Beshcorneria. (In honour of *H. Beschorn*, a German botanist. Nat. ord., *Amaryllidaceæ*. Allied to *Agave*.)

Greenhouse evergreen succulents. They require the same method of cultivation as *AGAVE* and *ALOE*, which see.

- B. bracteata*. 2. Reddish. March. Mexico. B. M. t. 6641.
- *Decosteriana*. 8. Green, tinged with red. February. Mexico. 1880. B. M. t. 6768.
- *dubia*. 2‡. Greenish. Mexico? 1877. Possibly the same as *B. tubiflora*.
- *Tonei*. 4. Red, green. Mexico. 1872. B. M. t. 6091.
- *tubiflora*. 4. Green, red. February. Mexico. 1845. B. M. t. 4642. Syns., *B. Colimiana* and *Fourcroya tubiflora*.
- *yucoides*. 4. Green. April. Mexico. 1860.

Besleria. (Named after *Basil Besler*, an apothecary at Nuremberg. Nat. ord., *Gesneraceæ*. Allied to *Gesnera*.)

Pretty stove evergreen sub-shrubs. Cuttings, placed in bottom-heat, in rough, sandy soil; peat and loam.

- B. coccinea*. 3. Yellow. Guiana. 1819. Climber. Stove evergreen climber.
- *cristata*. 3. Yellow. June. W. Ind. 1739.
- *bicolor* } See *Alloplectus dichrus*.
- *dichrus* }
- *grandifolia*. 3. Yellow. August. Brazil. 1823.
- *I'mrayi*. Yellow. Dominica. 1862. B. M. t. 6341. Herbaceous perennial.
- *incarnata*. 2. Purplish. Guiana. 1826. Stove herbaceous perennial.
- *leucostoma*. 1. Orange. New Grenada. Syn., *Hypocysta leucostoma*. B. M. t. 4310.
- *lutea*. 3. Yellow. July. Guiana. 1739.
- *melittifolia*. See *Episcia melittifolia*.
- *moëlis*. 3. Yellow. S. America. 1823.
- *pulchella*. B. M. t. 1146. See *Tussacia*.
- *serrulata*. Jacq. H. Schenb. t. 290. See *Drymonia*.
- *tigrina*. 4. White, crimson. December. Caraccas. 1853.
- *violacea*. 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 most commonly used in gardens, and are those to which the name besom applies; *beso*, in the Armoric language, being the birch. But whatever the material, they will endure much longer if soaked in water for some time before using. Where walks are liable to become mossy, a broom made of wire is frequently employed for sweeping them. Mossy walks are, however, best cleaned with the patent weed destroyers, of which there are several now in general use in gardens.

Béssera. (Named after *Dr. Besser*, professor of botany at Brody. Nat. ord., *Liliaceæ*; Tribe, *Alliaceæ*. Elegant little Mexican bulbs, allied to the Squills.)

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. When planted out a sunny position should be chosen, preferably against a wall with a southern aspect. By some authors this genus is regarded as consisting of a single species with flowers of various colours.

- B. elegans*. 2. Scarlet. September. Mexico. 1850. B. R. 1839, t. 34.
- *fistulosa*. 1. Purple. September. Mexico, 1831. Syn., *Pharium fistulosum*, B. R. t. 1546.
- *Herberti*. Purple and white. September. Mexico. 1840.
- *minuta*. Scarlet, white. Mexico. 1850. Fl. Ser. t. 424.

Béta. Beet Root. (From *bett*, the Celtic word for red; in reference to the red colour of the beet. Nat. ord., *Chenopodiaceæ*.)

Hardy biennials, except where otherwise described. Seeds in March or April; deep rich soil. See *BEEET*.

- B. Cicla*. 6. Green. August. Portugal. 1670.
- *variegata*. Chilian beet. A handsome foliage-plant.
- *cri'spa*. 6. Green. August. South of Europe. 1800.
- *hortensis metullica*. Leaves blood-red.
- *macrorrhiza*. 6. Green. August. Caucasus. 1820.
- *maritima*. 1. Green. August. Britain. Eng. Bot. ed. 3, t. 1184.
- *patula*. Green. Madeira.
- *trigyna*. 3. White. July. Hungary. 1796. Hardy herbaceous perennial.
- *vulgaris*. 4. Green. August. South of Europe. 1548.
- *lutea*. 4. Green. August. South of Europe.
- *macrocarpa*.
- *rubra*. 4. Green. August. South of Europe.
- *viridis*. 4. Green. August. South of Europe.

Bétcke. (Named after *M. Betcke*, a botanist. Nat. ord., *Valerianaceæ*.) See *Plectritis*.

Betel or Betle Nut. See **Piper Betle.**

Beto'nica. Betony. (This genus, named after the Celtic title, *Bentonic*, is now united to **Stachys**.)

Be'tony. *Stachys* and *Teu'crium beto'nicum*.

Be'tula. Birch. (From its Celtic name, *betu*. Nat. ord., *Betulaceæ*.)

Ornamental and very graceful hardy deciduous trees and shrubs, except where otherwise specified. *B. nana* is a very pretty rockery subject. 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.

B. a'lba. 40. February to March. Britain. Eng. Bot. ed. 3, t. 1295.

— *albo-purpu'ra.*

— *daleca'rica.* 40. May. Europe.

— *foliis variegatis.* May.

— *glutinosa.* Eng. Bot. ed. 3, t. 1296.

— *laciniata pe'ndula.*

— *macroca'ropa.* 40. June. Europe.

— *pe'ndula.* 40. April. Britain.

— *po'ntica.* 70. May. Turkey. Wats.

Dendr. t. 94.

— *pubescens.* 30. June. Germany. 1812.

— *urticifolia.* 40. May.

— *verrucosa.* 40. April. Britain. Eng.

Bot. ed. 4, t. 1295.

— *Bhopa'tra.* 50. May. Himalayas. 1840.

— *carpinifolia.* See *B. lenta*.

— *dau'rica.* 30. July. Siberia. 1785.

— *parvifolia.* July. Siberia.

— *excelsa.* See *B. lutea*.

— *fruticos'a.* 6. June. Siberia. 1818. Wats.

Dendr. t. 95.

— *glandulosa.* May. N. Amer. 1816.

— *gran'dis.* N. Amer. 1834.

— *lanulosa.* 70. July. N. Amer. 1817.

— *lenta.* 50. July. N. Amer. 1759. Syn.,

B. carpinifolia. Wats. Dendr. t. 144.

— *lutea.* 20. May. N. Amer. Syn., *B. excelsa*.

— *Medwedje'wi.* Transcaucasus. 1887. Gf.

1887, p. 383.

— *mol'lis.* E. Ind. 1840.

— *na'na.* 4. May. N. Europe. Eng. Bot.

ed. 3, t. 1297.

— *macrophylla.* 6. May. Switzerland.

1819.

— *pe'ndula.*

— *stricta.* May.

— *nigra.* 60. July. N. Amer. 1736. Syn.,

B. rubra. Black birch.

— *ova'ta.* 6. May. Hungary. 1820

— *palle'scens.* 6.

— *papyra'cea.* 50. June. N. Amer. 1750.

— *fu'sca.* May. Carolina.

— *platyphylla.* 50. June. Carolina.

— *trichocla'da.* June. Carolina.

— *populifolia.* 30. July. Canada. 1750.

Hardy evergreen.

— *laciniata.* 30. July.

— *pe'ndula.* July.

— *pub'ula.* 6. May. N. Amer. 1762.

— *Grayi.* British Columbia. 1890.

— *Raddeda'na.* Caucasus. 1887. Gf. 1887, p. 383.

— *ru'bra.* See *B. nigra*.

— *Scop'lii.* 6.

— *tristis.* 10. May. Kamtschatka.

Bia'ncea sca'ndens. See **Cæsalpinia sepiaria.**

Bia'rum. (An ancient name of a

plant. Nat. ord., *Araceæ*. Allied to **Sauromatum**.)

Hardy tuberous perennials. Any light, well-drained soil; offsets.

B. angustatum. 1. Spathe and spadix blackish-purple. Syria. 1861. Syn., *Ischarum angustatum*.

— *crispulum.* 1. Blackish-purple. Asia Minor. 1860.

— *eximium.* 1. Blackish-purple. Asia Minor. 1854.

— *Ko'tschyi.* 1. Blackish-purple. Syria. 1860.

— *Pyrami.* 1. Spathe and spadix blackish-purple. Palestine. 1862.

— *tenuifolium.* 1. Dark brown-purple. June. S. Europe. 1570. Syn., *B. gramineum*, *B. constrictum*, *Arum tenuifolium*. B. R. t. 512.

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. Bur Marigold. (From *bis*, twice, and *dens*, a tooth; in reference to the seed. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. 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. arguta. Yellow. June. Mexico. 1825. Herbaceous perennial.

— *atrosanguinea.* 3. Dark crimson. Autumn. Mexico. B. M. t. 5227. Tuberous-rooted perennial.

— *Berteria'na.* See *Cosmos caudatus*.

— *bipinnata.* 2. Yellow. July. N. Amer.

1887. Annual.

— *coronata.* Yellow. August. 1829. Biennial.

— *serulifolia.* 2. Yellow. Autumn. Mexico.

1799. B. M. 2059.

— *grandiflora.* 2. Yellow. June. S. Amer.

1800. Annual. Syn., *B. serrulata* and

Cosmos lutea. B. M. t. 1889.

— *heterophylla.* 2. Yellow. August. Mexico.

1803. Greenhouse herbaceous perennial.

— *hu'milis.* Yellow. Peru. Half-hardy perennial. 1861. Best grown as an open-air

annual.

— *leuca'ntha.* 1½. White. July. S. Amer

Annual.

- B. macroperma*. See *B. parviflora*.
 — *odorata*. 3. White. June. Mexico. 1825.
 Annual.
 — *parviflora*. 1. Yellow. June. Siberia. 1829.
 Annual. Syn., *B. macroperma*.
 — *procera*. 6. Yellow. November. Mexico.
 1822. Herbaceous perennial. B. R.
 t. 684.
 — *repens*. 2. Yellow. July. Nepaul. 1819.
 Deciduous creeper.
 — *sacandens*. See *Salmea*.
 — *serrulata*. See *B. grandiflora*.
 — *strigata*. 3. Rays white, disk yellow. Autumn.
 Mexico. B. M. t. 8155.
 — *tripartita*. 1. Yellow. Late summer. Great
 Britain and Ireland. Eng. Bot. ed. 3,
 t. 764.

Bidwillia. (Named after Mr. Bidwell, of Sydney, an ardent cultivator of bulbs. Nat. ord., *Liliaceæ*. Allied to *Anthericum*.)

Greenhouse bulb. Divisions and offsets; light, rich soil.

B. glaucescens. White. May. Australia. 1848.

Biebersteinia. (Named after M. Von Bieberstein, who wrote a Russian Flora. Nat. ord., *Geraniaceæ*.)

Half-hardy herbaceous perennial. Cuttings under a hand-glass, in the beginning of summer; seeds, in a slight hotbed, in a frame in March or April. Requires the protection of a cold pit during winter, or a very dry, sheltered place. Loam, peat, and sand.

B. odora. 1. Yellow. May. Altaia. 1837.
 Boyle III. t. 30.

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 them reserved until May. The double varieties of wall-flowers, stocks, etc., 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.

Bifrenaria. (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., *Orchidaceæ*; Tribe, *Vandæ-Macillariæ*. Allied to *Maxillaria*.)

Pretty stove orchids. Offsets and divisions. Peat, sphagnum, charcoal, and broken pots; raised above the surface of pots, or in shallow baskets.

- B. atropurpurea*. Dark purple. Rio Janeiro. 1828. Syn., *Maxillaria atropurpurea*. B. C. t. 1877.
 — *aurantiaca*. 2. Orange-spotted. September. Demerara. 1834. B. R. t. 1875.
 — *auriculata*. Orange. October. Rio Janeiro. 1843. Syn., *Maxillaria aureofulva*. B. M. t. 3629.
 — *Hadcroftii*. 1½. Green, chocolate, white. June. Brazil. 1851. B. M. t. 4629.
 — *de'la*. Cinnamon, with sulphur markings inside, whitish-yellow outside.
 — *pardalina*. Yellow, brown, white, purple. 1880.
 — *Harrisonia*. White, with yellowish tips; lip with purple veins. September. S. America. Syns., *Maxillaria Harrisonia*, B. R. t. 897, and *M. pungens*.
 — *alba*. White, tipped red; lip yellow, white, purple. Gf. t. 1312, f. 2.
 — *Buchania*. Violet-purple, green, yellow. 1879.
 — *indora*. Green and purplish. Brazil. Rchb. Xen. vol. 1, 49.
 — *zanthina*. Yellow. Bahia. 1866.
 — *leucorrhoda*. White; lip with rosy veins.
 — *longicornis*. Orange, brown. Demerara.
 — *melicoides*. Honey-colour, red. Brazil. 1877.
 — *parvula*. Deep tawny yellow; lip purplish with darker lines. Organ Mts. 1827. Syn., *Maxillaria parvula*. Hook. Ex. Fl. t. 217.
 — *racemosa*. Straw-colour; lip white, spotted with crimson. Brazil. Syn., *Maxillaria racemosa*. B. M. t. 2789.
 — *tyrianthina*. Violet-purple. Brazil. 1836. Syn., *Lycaste tyrianthina*. Gf. t. 422.
 — *vitellina*. 1. Yellowish-purple. July. Brazil. 1888.

Biglandularia. See *Sinningia*.

Bigno'nia. Trumpet Flower. (Named after *Abbé Bignon*, librarian to Louis XIV. Nat. ord., *Bignoniaceæ*.)

This order furnishes the most gorgeous climbers in the world; natives of the tropical forests in either hemisphere, a tenth part of which are said not to be yet introduced to our gardens. Stove evergreen climbers, except where otherwise specified. Propagated easily by young, stiff side-shoots, taken off in summer, inserted in sand, under a bell-glass, and placed in bottom-heat; peat and loam. 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 of a cold stove. 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. *B. jasmindes* may be taken as a type of these. The only hardy species is *caprolata*, 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. It has been recommended to try *crucigera*, in similar situations, grafted on *caprolata*. *B. radicans* has been transferred to *TECOMA*, which see; the difference in the genera consisting chiefly in the partition of the fruit, being parallel in *Bigno'nia*, and contrary in *Tecoma*.

- B. adenophylla*. See *Heterophragma adenophyllum*.
 — *æquinoctialis*. 40. Yellow. June. Guiana. 1768.
 — *æsculiflora*. See *Tabernamontana æsculifolia*.
 — *alba*. See *Spathodea bracteosa*.
 — *allia'cea*. 10. Yellow. Guiana. 1790.

- B. amœna*. See *Sterospermum hypostictum*.
 — *apurensis*. 10. Yellow. Orinoco. 1824.
 — *argyro-violascens*. Leaves white-veined, young leaves violet. S. America. 1865. Fl. Mag. 1865, p. 267.
 — *articulata*. See *Phyllarthron noronhianum*.
 — *aurantiaca*. Orange. S. America. 1874.
 — *biju-ga*. 6. Madagascar. 1822.
 — *caerulesca*. See *Jacaranda bahamensis*.
 — *canadensis*. See *Arrabidaea canadensis*.
 — *capensis*. See *Tecoma capensis*.
 — *capreolata*. 15. Scarlet. June. N. Amer. 1710.
 — *atrosanguinea*. Red-purple. S. United States. 1879. B. M. t. 6501.
 — *Carolinæ*. 10. Cream. Carolina.
 — *Chamberlaynii*. 40. Yellow. August. Brazil. 1820. B. M. t. 2148.
 — *chelonoides*. See *Sterospermum chelonoides*.
 — *Cherere*. 10. Red, orange. Guiana. 1824. B. R. t. 1301. Sometimes spelt *Kerere*.
 — *Chi-ca*. 10. Orinoco. 1819.
 — *chineensis*. See *Tecoma grandiflora*.
 — *chrysantha*. 10. Yellow. Guiana. 1823. See *Tecoma chrysantha*.
 — *chrysoleuca*. 10. Yellowish - white. July. S. Amer. 1824.
 — *Cle-matis*. 15. Caraccas. 1820.
 — *conosa*. See *Adenocalymna comosum*.
 — *crenata*. 10. E. Ind. 1823.
 — *crucifera*. 20. Yellow, scarlet. S. Amer. 1759.
 — *decipiens*. 10. E. Ind. 1823.
 — *diversifolia*. 10. Mexico. 1825.
 — *echinata*. See *Pithecoctenium Aubletii*.
 — *elongata*. 8. Purple. S. Amer. 1820.
 — *floribunda*. 12. White. Caraccas. 1816.
 — *gracilis*. B. C. t. 1705. See *B. unguis*.
 — *fraxinifolia*. See *Spathodea fraxinifolia*.
 — *grandiflora*. See *Tecoma grandiflora*.
 — *grandifolia*. 60. Purple, red. June. Caraccas. 1816.
 — *heterophylla*. See *B. Cherere*.
 — *incarnata*. 4. White, orange. Guiana. 1820.
 — *indica*. See *Orozylon? indicum*.
 — *jasmminifolia*. 10. White. Orinoco. 1826.
 — *jasmminoides*. 30. Purple. Moreton Bay. 1830.
 — *Kerere*. See *B. Cherere*.
 — *lactiflora*. See *Distichlis lactiflora*.
 — *latifolia*. See *Calliichlamys riparia*.
 — *laurifolia*. 20. Guiana. 1804.
 — *leucocylon*. See *Tecoma leucocylon*.
 — *Lindleyi*. 10. Variegated. S. Amer. 1823. Syn., *B. picta*. B. R. t. 45.
 — *linearis*. See *Chilopsis saligna*.
 — *litoralis*. Pink, red. Mexico. 1824.
 — *longissima*. See *Catalpa longissima*.
 — *lu-cida*. 10. E. Ind. 1823.
 — *magniflora*. Flowers varying from mauve to purplish crimson, throat yellow. Columbia. 1879. Gf. 1880, p. 34.
 — *microphylla*. 15. White. Hispaniola. 1820. Syn., *Catalpa microphylla*.
 — *meonantha*. See *Tecoma australis*.
 — *molle*. 10. Guiana. 1818.
 — *mollissima*. 10. Caraccas. 1820.
 — *multifida*. 10. E. Ind. 1823.
 — *pa'llida*. 15. White. July. W. Ind. 1823. B. R. t. 965.
 — *Panda'rea*. See *Tecoma australis*.
 — *paniculata*. See *Amphibolum paniculatum*.
 — *pentaphylla*. See *Tecoma pentaphylla*.
 — *perforata*. August. Brazil. 1851.
 — *pi'cta*. B. R. t. 45. See *B. Lindleyi*.
 — *pubescens*. 15. Yellow. June. Capepeachy. 1759.
 — *purpu'ra*. 6. Purple. S. Amer. 1822.
 — *quadrangulata*. 10. E. Ind. 1823.
 — *quadrilocularis*. See *Heterophragma Rozburghii*.

- B. radicans*. See *Tecoma radicans*.
 — *regalis*. Red, yellow. British Guiana. 1885.
 — *reticulata*. Columbia. 1873.
 — *Roe'zii*. Columbia. 1870.
 — *rugosa*. Primrose. October. Caraccas. 1872. B. M. t. 7124.
 — *salicifolia*. 10. Yellow. Trinidad. 1824.
 — *sambucifolia*. This is a synonym of *Tecoma stans*.
 — *serratifolia*. See *Tecoma serratifolia*. 20. Yellow. W. Ind. 1822.
 — *serrata*. See *Sterospermum serratum*.
 — *spathacea*. See *Dolichandrone Rheedii*.
 — *speciosa*. 20. Pink. May. Uruguay. 1838.
 — *spectabilis*. 10. Purple. W. Ind. 1820.
 — *spicata*. Trinidad. 1822.
 — *stami'nea*. 10. Yellow. Hispaniola. 1825.
 — *stans*. See *Tecoma stans*.
 — *suberosa*. See *Sterospermum suaveolens*.
 — *tomentosa*. See *Paulownia imperialis*.
 — *triphyl'a*. See *Tabebuia triphylla*.
 — *Tweediana*. 20. Yellow. June. Buenos Ayres. 1838.
 — *unca'ta*. Andr. Rep. t. 530. See *Macfadyena uncinata*.
 — *unguis*. Yellow. April. S. Amer. 1810. Syn., *B. gracilis*, B. C. t. 1705.
 — *varia'bilis*. 10. Yellow, white. W. Ind. 1819.
 — *venusta*. 4. Orange. September. S. Amer. 1816.

Bilberry. *Vaccinium myrtillus*.

Bilimbi-tree. *Averrhoa bilimbi*.

Bill, a sharp-edged tool, employed in cutting hedges, sharpening stakes, etc. 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. An implement well adapted for this purpose is Dean's bill; for it has a narrow blade with a keen-cutting edge, and a saw at the back, made expressly for cutting green wood, warranted not to buckle or stick fast.

Billardie'ra, AppleBerry. (Named after *Labillardiere*, a French botanist. Nat. ord., *Pittosporaceæ*.)

Ornamental 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.

- B. angustifolia*. 2. Cream. July. N. Holland. 1820. Bauer Ic. t. 1014.
 — *cymosa*. Violet. S. Australia. 1868.
 — *daphnoides*. Yellow, purple. May. N. S. Wales. 1840.
 — *fusiformis*. See *Sollya angustifolia*.
 — *longiflora*. 20. Greenish yellow, often changing to purple. July. Van Diemen's Land. 1810. B. M. t. 1507. Syn., *B. ovalis*.
 — *mutabilis*. 8. Crimson. August. N. S. Wales. 1795. B. M. t. 1813.
 — *ovata*. See *B. longiflora*.
 — *parviflora*. 12. Blue. July. N. Holland. 1825.
 — *scandens*. 12. Purple. August. N. S. Wales. 1790. B. M. t. 801.

Billbe'rgia. (Named after *Billberg*, a Swedish botanist. Nat. ord., *Bromeliaceæ*.)

Stove plants. Suckers and divisions; sandy loam, peat, and a little rotten cow-dung. Summer temp., 60° to 75°; winter, 55° to 60°.

- B. amœna*. 2. Yellow. June. S. Amer. 1817.
 — *andegavensis*. Centre red, border indigo. Garden hybrid. 1886.
 — *angustifolia*. Red. S. America. 1866.
 — *Bakeri*. Green; bracts rose. 1878.
 — *Baraquiniana*. White, green. Brazil. 1865.
 — *bi-color*. 3. Rose, blue. May, Rio Janeiro. 1829.
 — *bi-frons*. Red, yellow. Brazil. 1852.
 — *bivittata*. See *Nidularium bivittatum*.
 — *bivirens*. Hybrid between *B. nutans* and *B. iridifolia*. 1889.
 — *Breautiana*. Leaves banded white. Bracts rosy. Flowers blue. 1884. Syn., *B. Cappei*.
 — *Bruantii*. Garden hybrid. 1885.
 — *Cappei*. See *B. Breautiana*.
 — *Chantini*. Red, yellow; bracts red. Summer. Amazons. 1877.
 — *chlorosticta*. Leaves bronzy, with green spots. Brazil. 1871.
 — *clavata*. 1½. Blue. February. Trinidad. 1824.
 — *cruevnta*. 1. Blue, red. August. Rio Janeiro. 1824.
 — *e'legans*. See *B. speciosa*.
 — *Enderi*. Bracts coral-red. Flowers blue. Brazil. Gf. t. 1217.
 — *Euphemica*. Dark purple, green. Brazil? 1872.
 — *fasciata*. See *Echmea*.
 — *Gireondiana*. Garden hybrid. 1887.
 — *Glazioviana*. Red; bracts white. Brazil. Gf. t. 1203.
 — *Glymidia*. Yellow, purple; bracts crimson. Tropical America. 1866.
 — *iridifolia*. 1. Scarlet, yellow. March. Rio Janeiro. 1825.
 — *Krameriana*. Garden hybrid. 1888.
 — *Libonia*. 1. Blue. August. Brazil. 1858.
 — *Lietzei*. Brazil. 1881. Belg. Hort. 1881. tt. 5-7.
 — *macrocalyx*. 1½. Blue, green. Brazil. 1858.
 — *melanocantha*. See *Echmea suaveolens*.
 — *Moreliana*. 1. Pink, blue. February. Brazil. 1848.
 — *nudicaulis*. See *Echmea*.
 — *nutans*. 1½. Yellowish, rosy, blue; bracts rosy. Winter. Brazil. 1868.
 — *o'leus*. Purple, crimson. Tropical America. 1865.
 — *pallidescens*. 1½. White, green, violet. Winter. Brazil. 1856. Syns., *B. pallida* and *B. Woti*.
 — *Perringtoniana*. Hybrid between *B. nutans* and *B. Liboniana*. 1890. Gf. t. 1318.
 — *polystachya*. Crimson, blue. Brazil. 1852.
 — *Portea*. 3. Green. Summer. Bahia. 1849. B. M. t. 6670.
 — *purpurea*. Rose, purple. October. Brazil.
 — *purpurea-rosea*. Rose, purple. November. Brazil. 1831.
 — *pyramidalis*. 2. Crimson. February. Rio Janeiro. 1817.
 — *quintusia*. Bracts carmine; calyx green tinged rose; petals greenish tipped blue. Brazil. Gf. 1890, p. 202.
 — *Rancougneti*. Garden hybrid. 1884.
 — *rhodocyanea*. See *Echmea fasciata*.
 — *roseo-marginata*. 1½. Blue; bracts rose. January. Tropical America. 1880. Syns., *B. rubro-marginata*, and *Quesnelia roseo-marginata*.
 — *rufa*. 6. Violet; bracts red. Guiana. 1874. Syn., *Quesnelia rufa*.
 — *Saundersii*. Blue; bracts crimson. Brazil. 1868.
 — *Skinneri*. See *Androlepis*.
 — *speciosa*. 1½. Carmine, violet; bracts carmine-rose. Brazil. 1877. Syn., *B. elegans*.
 — *sphacelata*. See *Gregia*.

- B. thyrsoides*. Scarlet. November. Brazil.
 — *variegata*. Belg. Hort. 1881, p. 73.
 — *vezillaria*. Hybrid between *B. thyrsoides* *splendida* and *B. Moreliana*.
 — *vittata*. 2. Red, violet, green. South Brazil. 1847. Syns., *B. Leopoldi*, *B. pulcherrima*, *B. Rohaniana* and *B. zonata*.
 — — *ama'bilis*. Blue; bracts crimson. Brazil.
 — — *formosa*. Bracts orange. 1879. Syn.,
 — — *B. formosa*.
 — — *Rohani*. Gf. 1890, p. 306, f. 60.
 — *Wetherelli*. Blue and yellow. December. Bahia.
 — *Widdii*. Hybrid between *B. nutans* and *B. Baraquiniana*. 1884. The same name was given to a hybrid between *B. nutans* and *B. decora* in 1889.
 — *Worlediana*. Rose, blue. Hybrid between *B. nutans* and *B. Moreliana*. 1885.
 — *zebrina*. 1½. June. S. Amer. 1826.
 — *zonata*. 1½. White. March. Brazil. 1843.

Billo'tia flexuosa. See **Leptospermum flexuosum**.

Binding. A term applied to adhesive soils, to describe the closeness and hardness of their texture in hot, dry seasons. (Also called *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. *Convolvulus*.

Bio'phytum. *Oxalis biophytum*.

Bio'ta, a genus which only contains the *Thujas* that are not American.

Birch. *Betula*.

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 time 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 red worsted. To keep them from attacking peas and other vegetables just emerging from the soil, a similar display of white 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. laquax*) 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. ananthe*) 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 wire-worms and other destructive vermin are effectually destroyed. The tree-pipet, or titlark (*Anthus arboreus*), and the meadow-pipet (*A. pratensis*), are common hedge-birds, 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 wry-neck, 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 num-

ber 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 duncock, the red-breast, 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, babilard (*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 ciril-bunting, the reed-bunting, the corn-bunting, the skylark, the woodlark, the linnnet, the chaffinch, the mountain-finch, the bull-finch, the house-sparrow, and the tree-sparrow.

Bird Cherry. *Pru'nus pa'dus.*

Bird Pepper. *Ca'psicum bacca'tum.*

Bird's Bill. *Trigone'lla ornithopodior'des.*

Bird's Eye. *Pri'mula farino'sa.*

Bird's Foot. *Orni'thopus.*

Bird's-Foot Fern. *Pellœ'a ornithopus.*

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. *Cruciferae*; Tribe, *Thlaspidææ*. Allied to *Thlaspi* and *Capsella*.)

All hardy. The annuals, by seed in March and April; the perennials, by division in spring or autumn.

PERENNIALS.

B. ambi'gua. †. Yellow. June. Italy. 1820.
— *coronopifo'lia.* †. Yellow. June. Italy. 1790.

- B. lævigata*. 1. Yellow. June. Italy. 1777.
 — *alpéstris*. 1. Yellow. June. Hungary. 1816.
 — *longifolia*. See *B. saxatilis*, var. *longifolia*.
 — *montana*. 1. Yellow. Spain. 1823.
 — *raphanifolia*. 1½. Yellow. July. Sicily. 1822.
 — *saxatilis*. 1. Yellow. June. South Europe. 1821.
 — *longifolia*. Switzerland. 1832.
 — *sempervirens*. 1. Yellow. June. Spain. 1784.
 — *stenophylla*. 1. Yellow. June. Spain. 1826.

ANNUALS.

- B. ciliata*. 1. Yellow. June. South of France. 1820.
 — *Colimnae*. 1. Yellow. June. South of Italy. 1823. Sibth. Fl. Gr. t. 629.
 — *depressa*. ½. Yellow. June. Egypt. 1811.
 — *lyrata*. 1½. Yellow. July. Spain. 1799.
 — *maritima*. 1½. Yellow. June. Naples. 1824.
 — *obovata*. 1. Yellow. June. Europe. 1817.

Bise'ula. Hatchet Vetch. (From *bis*, twice, and *serrula*, a saw; in reference to the seed-pods being armed with teeth. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. Allied to *Astragalus*.)

Hardy annual. Seeds in April or September. Sandy soil.

- B. pelécinus*. 1. Purple. July. South Europe. 1640. Sibth. Fl. Gr. t. 737.

Bismarckia. (Named after Prince *Bismarck*. Nat. ord., *Palmeæ*; Tribe, *Borasseæ*.)

- B. no'bilis*. Madagascar. Gf. t. 1221.

Bitter Almond. *Amygdalus communis amara*.

Bitter Apple. *Cucumis colocynthis*.

Bitter Oak. *Quercus cærris*.

Bitter-sweet. *Solanum dulcamara*.

Bitter Vetch. *Orobus*.

Bitter Wood. *Xylo'pia*.

Bivonæ'a. (After *A. Bivona Bernardi*, a professor of botany in Sicily. Nat. ord., *Cruciferae*; Tribe, *Lepidicæ*. Allied to *Lepidium*.)

Hardy annual. Seeds; garden-soil.

- B. lutea*. ½. Yellow. April. Sicily. 1824.

Bixa. *Arnotta*. (Its native name in South America. Nat. ord., *Bixineæ*.)

The reddish pulp which surrounds the seeds of *B. orellana* is the *Arnatta* 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, under a bell-glass, and in heat; lumpy peat, loam, and sand

- B. orellana*. 30. Pink. June. W. Ind. 1690. B. M. t. 1456.

— *acuminata*. 20. Purple. July. Mauritius. 1817. Syn., *B. purpurea*. There are two forms of this, viz., *alba*, flowers white, and *purpurea*, flowers rosy.

- *urucurana*. 20. Pink. July. Brazil. 1820.

Bizarre. See **Carnation**.

Black Adiantum. *Asplenium adiantum-nigrum*.

Black Arch-Moth. See *Psilura monacha*.

Blackberry. *Rubus fruticosus*.

Black Bryony. *Tamus communis*. Poisonous weeds, which need not be further noticed.

Black Bullace. *Prunus institia*.

Blackburrina. (Named after Mr. Blackburn. Nat. ord., *Rutaceæ*.) See **Xanthoxylum**.

Black Caterpillar. See **Athalia spinarum**.

Black Flea. (*Haltica nemorum*.) 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, beet-root, mangold-wurtzel, 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 turnipseed 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 Cottage Gardener*, ii. 93.

Black Grub. *Atha'lia spina'rum*.

Black Jack Oak. *Que'rcus ni'gra*.

Black Pine. *Pi'nus austri'aca*.

Black Saltwort. *Glaux mari'tima*.

Black Thorn. *Pru'nus spino'sa*.

Black Varnish-tree. *Melanorrhœ'a*.

Black Wattle. *Callicoma serratifolia*.

Bladder Blight. See **Peach—Blistering of Leaf.**

Bladder Catchfly. *Silene inflata*.

Bladder Ketmia. *Hibiscus trinum*.

Bladder Nut. *Staphyle'a*.

Bladder Plums. Our illustration represents a condition of the fruit of various kinds of Plum that is not very uncommon. When the other parts of the flower have fallen off, the ovary turns yellowish, and commences to swell at a rather rapid rate, finally assuming the form here shown; but, instead of being plump and fleshy, they are merely hollow bags filled with air. This distorted growth is caused by a fungus, which after a few weeks develops as a greenish mould on the surface; the

bladder then blackens and shrivels, and speedily decays.—*The Gardeners' Chronicle* for 1872, p. 940.



Bladder Senna. *Columnea*.

Bladder-wort. See **Utricularia**.

Blæ'ria. (Named after *Dr. Blair*, a physician. Nat. ord., *Ericaceæ*.)

Pretty greenhouse evergreen shrubs, from the Cape of Good Hope. Cuttings of young wood in sand, under a bell-glass; sandy peat. For treatment, see *ERICA*.

B. articulata. 1. Pink. May. 1795.

— *bractea'ta*. See *Sympieza capitella*.

— *cilia'ris*. See *Grisebachia ciliaris*.

— *dumo'sa*. 2. 1806.

— *ericoides*. 2. Purple. September. 1774.

Syn., *Erica orbicularis*, B. C. t. 153.

— *fasciula'ta*. See *Sympieza*.

— *purpu'rea*. 2. Purple. June. 1791.

Bl'kea. (Named after *Martin Blake*, an active promoter of useful knowledge. Nat. ord., *Melastomaceæ*. Allied to *Miconia*.)

Ornamental stove evergreen shrubs. Cuttings from rather firm shoots, in sandy peat, in bottom-heat, under a glass; peat and loam, with a liberal supply of water in spring and early summer.

B. quinque'ner'via. 10. Flesh-colour and white. June. Guiana. 1820.

— *trine'ria*. 8. Rose. June. Jamaica. 1789. B. M. t. 451.

Blanching, or Etiolation, is effected by excluding the light from the plants, and the more completely the light is excluded, the more entire is the absence of green 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, rhu-

barb, endive, lettuces, etc. 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 the plants less liable to decay. Lettuces and cabbages are usually whitened by tying the leaves over the heart, or centre-bud. In some instances, blanching is undesigned and a positive evil, as when *geraniums* and other plants become pale and weak, from being confined under vines in a greenhouse, where the relative heat and light are disproportionate.

Blandfordia. (Named after George, Marquis of Blandford. Nat. ord., *Hemerocallidaceæ*. Allied to *Hemerocallis*.)

Beautiful greenhouse bulbs, requiring the same treatment as *Ixias*. Seeds and offsets. Loam and peat.

- B. aurea*. 1 to 2. Golden-yellow. Summer. N. S. Wales. 1870. B. M. t. 5809.
 — *Backhousii*. See *B. grandiflora*.
 — *Cunninghamii*. 3. Red, yellow. June. New South Wales. B. M. t. 5734.
 — *hybrida*. Red with yellow margin.
 — *flammea*. Dull yellow. Australia. 1836. B. R. t. 924.
 — *elegans*. Crimson, tipped with yellow. Summer.
 — *grandiflora*. 2. Crimson. July. N. S. Wales. 1812. B. R. t. 924. Syns., *B. Backhousii* and *marginata*.
 — *intermedia*. 1½. Yellow. September. N. Holland. 1844.
 — *marginata*. B. R. 1845, t. 18. See *B. grandiflora*.
 — *noëbilis*. 2. Orange. July. N. S. Wales. 1803. B. M. t. 2003.
 — *princeps*. 1. Scarlet-yellow. Summer. Australia. 1873. Syn., *B. flammea princeps*. B. M. t. 6209. There is also a variety *splendens*, Garden, Oct. 27, 1883.

Bleaberry, or Bilberry. *Vaccinium myrtillus*.

Blechnum. (From *blechnon*, a Greek name for a Fern. Nat. ord., *Filices*.)

Spores or seed, and divisions at 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°.

- B. angustifolium*. 1. Brown. July. W. Ind.
 — *austriale*. ¾. Brown. June. Cape of Good Hope. 1691.
 — *boreale* and var. *Aitkenianum*. See *Lomaria spicant*.
 — *braziliense*. ¾. Brown. June. Brazil. 1820.
 — *cartilagineum*. 1. Brown. July. N. Holland. 1820.
 — *corcovadense*. 4. Brown. July. Brazil. 1837.
 — *denticulatum*. Brown. June. Tenerife. 1826.
 — *Pinlaysonianum*. Brown. Malacca.
 — *Fontanesianum*. Brown. July. Brazil.
 — *glandulosum*. ¾. Brown. April. Brazil. 1828.
 — *gracile*. ¾. Brown. November. Brazil. 1830.
 — *hastatum*. 1. Brown. July. Chili. 1841.
 — *intermedium*. 1. Brown. July. Brazil. 1841.
 — *lanceolata*. 3. Brown. September. Brazil. 1829.

- B. lanceola frazieri* *neum*. More dense than the type. Syn., *B. frazierifolium*.
 — *laevigatum*. 1. Brown. July. N. Holland. 1821.
 — *longifolium*. 1. Brown. July. Caraccas. 1820.
 — *nitidum*. Brown. Isle of Luzon.
 — *contra-ctum*. Philippines. 1863.
 — *occidentale*. 1. Brown. August. Brazil. 1823.
 — *orientale*. Brown. July. E. Ind.
 — *pectinatum*. 1. Brown. August. S. Amer. 1827.
 — *polypodioïdes*. See *B. unilaterale*.
 — *rugosum*. G. C. 21, p. 408.
 — *serrulatum*. ¾. Brown. July. Florida. 1819. Hardy. Syn., *B. striatum*.
 — *triangulare*. Brown. July. Mexico. 1841.
 — *trifoliatum*. Brown. July. Brazil. 1841.
 — *unilaterale*. 1. September. Brazil. 1829. Syn., *B. polypodioïdes*.

Ble'chum. (From a Greek name for an unknown plant, supposed to be *Margjoram*. Nat. ord., *Acanthaceæ*. Allied to *Dicliptera*.)

Stove herbaceous perennials. Cuttings of young, firm shoots in spring or summer; peat and loam.

- B. angustifolium*. 1. Blue. June. Jamaica. 1824.
 — *braziliense*. See *Stenandrum mandiocanum*.
 — *Brownet*. 2. White. June. W. Ind. 1780.
 — *laxiflorum*. 2. White. Jamaica. 1818.

Bleeding. See **Extravasated Sap.**

Ble'pharis. (From *blepharis*, the eye-lash; in reference to the fringed bracts. Nat. ord., *Acanthaceæ*. Allied to *Acanthus*.)

Stove and greenhouse shrubs or herbs. 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, under a bell-glass.

- B. Boerhaavioïlia*. 1. Blue. July. E. Ind. 1829. Stove annual. Wight Icon. t. 458.
 — *capensis*. 1. Blue. July. Cape of Good Hope. 1816. Greenhouse biennials. Syn., *Acanthodium capense*.
 — *carduifolia*. 1. Blue. August. Cape of Good Hope. 1816.
 — *furcata*. 2. July. Cape of Good Hope. 1816. Greenhouse evergreen shrub. Syn., *Acanthodium furcatum*.
 — *linearifolia*. 2. Blue. July. Guinea. 1823. Stove annual. Syn., *Acanthodium hirtum*.
 — *procumbens*. 1. July. Cape of Good Hope. 1825. Greenhouse evergreen trailer. Syn., *Acanthodium procumbens*.

Blephi'lia. (From *blepharis*, the eye-lash; in reference to the fringed bracts. Nat. ord., *Labiatae*. Allied to *Monarda*.)

Hardy herbaceous perennials. Seeds, and dividing the roots in spring and autumn. Garden-soil.

- B. ciliata*. 3. Blue. July. N. Amer. 1798.
 — *hirsuta*. 1 to 2. Purple or blue. August. N. Amer. 1798.

Blessed Thistle. *Cnicus benedictus*. Syn., *Carbenia benedicta*.

Ble'tia. (Named after a Spanish

botanist of the name of *Blet*. Nat. ord., *Orchidaceæ*.)

Pretty 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 manure, watering plentifully when growing.

- B. acutipetalata*. See *B. verecunda*.
 — *campanulata*. Purple and white. Peru.
 — *florida*. 2. Rose. February. Trinidad. 1786.
 Syn., *B. pallida*.
 — *Gebi* na. See *B. hyacinthina*.
 — *gracilis*. 1½. Pale greenish white. July. Mexico. 1830. B. R. t. 1681.
 — *havane'nsis*. 2½. Purple. Havannah. 1835.
 — *hyacinthina*. 1. Rose and crimson. April. China. 1802. Garden, Nov., 1879. Syn., *B. Gebina*. Has been proved quite hardy.
 — *maculatus*. See *Phaius maculatus*.
 — *pa'llida*. See *B. florida*.
 — *Parkinsoni*. 1. Rose. January. Mexico. 1838.
 — *pa'tula*. 2. Purple. March. Hayti. B. M. t. 3518.
 — *reflexa*. 2. Purple. Green. Mexico. B. R. t. 1760.
 — *seculnda*. Green, crimson. Mexico. 1840.
 — *Shepherdii*. 2. Purple and yellow. January. Jamaica. 1825. B. M. t. 3319.
 — *Sherrattiana*. Purple, white, yellow. New Grenada. 1867. B. M. t. 5646.
 — *Tankervillei*. See *Phaius grandifolius*.
 — *verecunda*. 3. Purple. March. W. Ind. 1733. B. M. t. 930. Syn., *B. acutipetalata*.
 — *Woodfordii*. 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. It is now included under *Cupania*.

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. See **Barren Plants**.

Blistered Leaves. See **Peach**.

Blight. A general term for plant-disease.

Bli'tum. The Strawberry Blite, or Spinach, is scarcely worth growing. *B. capitatum*, *B. virgatum*, and *B. maritimum* are sometimes cultivated.

Blood. See **Animal Matters**.

Blood-flower. *Hæmanthus*.

Bloodwort. *Sanguinaria*.

Bloom, or **Blossom**, is the popular name for the flowers of fruit-bearing plants.

The organs of fructification are absolutely necessary for the production of seeds, and are always producible by garden-plants properly cultivated. 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 of which the seed-producing parts are obscure.

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, impregnable by the pollen, and rendering fertile the seeds.

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 or other 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 fertilization; 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 rarely 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. In some flowers the calyx is large and petaloid, while the petals are inconspicuous and nectar-

hearing. A familiar example occurs in the Christmas rose (*Helleborus niger*), 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 Hamburg Grape, and on some plums, and green on the cucumber. It so improves their appearance that an apparatus has been suggested for adding it artificially. It seems of a resinous nature.

Blue-bells. *Campylobasis rotundifolia* and *Scilla nutans*.

Blue-bottle. *Centaurea cyanus*.

Bluets. *Vaccinium angustifolium*. In France this name is applied to *Centaurea cyanus*.

Blumenbachia. (Named after J. F. Blumenbach, of Gottingen. Nat. ord., *Loasaceæ*.)

Half-hardy annuals unless where otherwise stated. Seeds in April; rich mould.

B. chuquibambensis. Red, yellow. Peru. 1863.

Hardy. B. M. t. 6143.

— *contorta*. Orange-red, green. July. Peru. 1874. B. M. t. 6134.

— *coronata*. 1½. Orange-red. Chili. 1872.

Syn., *Catiphora coronata*.

— *insigne*. 1. White. July. Monte Video. 1826. Trailer. B. M. t. 2365. Syn.,

Loasa palmata.

— *lateritia*. 20 Red. May. Tucuman. 1835.

Syns., *Loasa lateritia* (B. M. t. 3632), and

coccinea, half-hardy perennial requiring the protection of a frame in winter.

— *multifida*. 1. Greenish-red. July. Buenos Ayres. 1826. B. M. t. 3599.

Boatlip. *Scaphyglottis*.

Bobartia. (Named in honour of Jacob Bobart, professor of botany at Oxford in the seventeenth century. Nat. ord., *Iridaceæ*.)

Many of the species referred to this genus have now been united to *Aristea*. Seeds in April; divisions in autumn or spring. Sandy loam; protection of a cool greenhouse or pit in winter.

B. aphylla. 1. White, purple. South Africa. Syn., *Marcia aphylla*.

— *aurantiaca*. See *Homeria aurantiaca*. B. M. t. 1612.

— *filiformis*. 1. Purple. South Africa. Syn., *Marcia filiformis*.

— *gladiata*. 2. Yellow. June. Cape of Good Hope. 1816. Syn., *Marcia gladiata*.

B. R. t. 229.

— *spathulacea*. 3. Yellow. June. Cape of Good Hope. 1798.

Bocco'nia. (Named after P. Boccione, M. D., a Sicilian. Nat. ord., *Papaveraceæ*.)

B. cordata is a hardy herbaceous perennial, the others greenhouse shrubs. Division, cuttings with a heel early in summer in sand, under a bell-glass.

B. cordata. Whitish. Summer. Japan. 1866.

Syns., *B. cordata-japonica* and *Macleaya yedoensis*. B. M. t. 1905. A handsome foliaged plant.

— *frutescens*. 10. White, yellow. October. W. Ind. 1739. B. C. t. 83.

— *integrifolia*. 9. Greenish. Peru. 1822.

Bœbera. (Named after Bœber, a Russian botanist. Nat. ord., *Compositæ*; Tribe, *Helenoideæ*.) See *Dysodia incana*.

Bog-bean. *Menyanthes trifoliata*.

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 (hint) 102

Alumina (clay) 16

Oxide of iron 4

Soluble, vegetable, and saline matter 4

Muriate of lime 4

Loss 2

Bog-earth Plants. Plants which are to be grown in bog-earth, such as Rhododendrons, Ericas, etc.

Bog-moss. *Sphagnum*.

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. | 3-inch pipe. | 2-inch pipe.

ft. ft. 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 " 1490

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.

Bois-perdix (Partridge-wood). *Hicstéria*.

Bolbophyllum. See **Bulbophyllum.**

Boldo'a. United to **Salpianthus.**

Bo'leum. (From *bolos*, a ball; in reference to the shape of the seed-pods. Nat. ord., *Cruciferae*; Tribe, *Isatideæ*. Allied to *Vella*.)

Desirable hardy evergreen shrub, useful for rockeries. Seed in spring in a frame or in the open border during summer. Light, rich soil. *B. asperum*. 1. Cream. June. Spain. 1818.

Boliva'ria. (Named after *Bolívar*, the late republican chief in South America. Nat. ord., *Oleaceæ*.) See **Menodora.**

Bo'llea. See **Zygopetalum.**

Bolto'nia. (Named after *J. B. Bolton*, an English professor of botany. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*. Allied to *Stenactis*.)

Hardy herbaceous perennials. Division in spring or autumn. Useful border plants for flowering in late autumn; garden-soil.

- B. asteroides*. 8. Pale violet or purplish. September. N. Amer. 1758. B. M. t. 2554. Syn., *B. glastifolia*. B. M. t. 2381.
- *decurrens*. Larger flowered and finer, with winged stems.
- *incisa*. See *Calimeris incisa*.
- *indica*. White. Upper Brnham. Syn., *Calistemon indicum*.
- *latisquamata*. Blue-violet. Autumn. N. America. 1879.

Bombax. Silk. Cotton-tree. (From *bombax*, cotton; in reference to the woolly hairs which envelope the seed, like those of the cotton-plant. Nat. ord., *Malvaceæ*.)

Stove-trees more remarkable for their prodigious size than for their use. Cuttings of rather young shoots, but firm at the base, placed in sandy soil, under a bell-glass, and in bottom-heat; rich loam.

- B. Ceiba*. 100. Pale red. S. Amer. 1692. Syn., *B. quinatum*.
- *co'ngo*. See *Cochlospermum gossypium*.
- *crian'thos*. See *Eriodendron leiantherum*.
- *globosum*. 60. Guiana. 1824.
- *gossypium*. See *Cochlospermum gossypium*.
- *grandiflorum*. See *Cochlospermum gossypium*.
- *heptaphyllum*. See *Bombax septenatum*.
- *malabaricum*. 60. Scarlet. Malabar. Wight III. t. 29.
- *penta'narium*. See *Eriodendron anfractuosum*.
- *quina'tum*. See *Bombax Ceiba*.
- *septena'tum*. 50. White. Carthage. 1699. Syn., *B. heptaphyllum*.
- *vitifolium*. See *Cochlospermum serratifolium*.

Bombyx neu'stria. Syn., *Clisiocampa neu'stria*. The Lackey, or Barred-

Tree Lackey Moth. "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 (see the annexed drawing). 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, etc. 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.

Bonapa'rtia. (Nat. ord., *Bromeliaceæ*.) See *Tillandsia*.

B. grandifolia. See *Dasythirion acrotrichum*.
—*juncea.* See *Agave geminiflora*.

Bona'tea. (Named after *M. Bonato*, a distinguished Italian botanist. Nat. ord., *Orchidææ*; Tribe, *Habenariææ*. Allied to *Habenaria*.)

Handsome terrestrial cool house orchid. Division of the roots, or semi-bulbous tubers; peat and loam.

B. speciosa. 2. Green, white. May. Care of Good Hope. 1820. B. M. t. 2926.

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. It promotes the luxuriance and beauty of most 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 super-phosphate of lime, a wine-glassful 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 super-phosphate 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 after *Heinrich Gustav Bongard*, a German botanist. Nat. ord., *Berberidaceæ*.)

A very pretty hardy tuberous perennial; the leaves are all radical and pinnate, and are remarkable from having a dark purple blotch at the base of each leaflet. In Syria and Persia it is used as a pot-herb. The soil should be of a dry sandy nature, and the tubers should be protected from wet by a hand-light during the winter, as they are very apt to rot.

B. Rauwo'lfii. †. Yellow. Spring. Syria. Persia. 1740. B. M. t. 6244. Syn., *Leontice chrysozonum*.

Bona'ya. (Named after the German botanist, *Bonnay*. Nat. ord., *Scrophulariaceæ*. Related to *Torenia*.)

Stove plants. Seeds for the annual and biennial, divisions and cuttings for the perennial; rich, sandy loam.

B. brachycarpa. Violet. June. E. Ind. 1829. Annual.

—*reptans*. †. Blue. July. E. Ind. 1820. Perennial trailer.

—*veronicifolia*. †. Pink. August. E. Ind. 1798. Biennial trailer. Wight Icon. t. 1411-2.

Bonne'tia. (Named after *C. Bonnet*, a distinguished naturalist. Nat. ord., *Ternstroemiaceæ*.)

Elegant stove tree. Cuttings of firm young shoots in sand, under a glass, in heat; loam and peat.

B. palustris. See *Mahurea palustris*.
—*sessilis*. 15. Purplish. Mount Roraima, British Guiana. 1819.

Bon'tia. (Named after *J. Bont*, a Dutch physician. Nat. ord., *Myoporineæ*.)

Stove evergreen shrub, requiring similar treatment to *Bonnetia*.

B. daphnoides. Yellow, purple. June. W. Ind. 1690.

Borage. (*Bora'go officinalis*.) Its young leaves 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 chosen, 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 wall, 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 apart. When of about six weeks' growth, the plants should be thinned to twelve inches apart.

To obtain Seed.—Some of those plants which have survived the winter must be left untouched. They will begin to flower about June; and when their seed is perfectly ripe the stalks may be collected, and dried.

Bora'go. (Derivation doubtful. Nat. ord., *Boraginææ*.)

Hardy plants. Annuale from seed; perennials by divisions; garden-soil.

- B. crassifolia*. See *Caccinea glauca*.
- cretica*. See *Trachystemon*.
- laxiflora*. 1. Blue. June. Corsica. 1813. Trailing perennial. B. M. t. 1798.
- longifolia*. 1. Blue. July. North Africa. 1825. Annual.
- officinalis*. 3. Blue. August. England. Annual. Eng. Bot. ed. 3, t. 1114.
- albiflora*. 2. White. August. England. Annual.
- orientalis*. See *Trachystemon*.
- zeylanicum*. See *Trichodesma zeylanicum*.

Bora'ssus. (One of the names applied to the spathe of the date-palm. Nat. ord., *Palmaceæ*.)

Palm-wine, or toddy, a grateful beverage, is made from the juice which flows from the wounded spathe of this and some other palms. Stove trees. Seeds in a strong bottom-heat; loam, leaf-soil and sand.

- B. tabelliformis*. 30. White, green. W. Tropical Africa. 1771. Widely cultivated in India. Roxb. Pl. Corom. t. 71-2. Syn., *B. aethiopicum*.
- pinna trifrons*. Jacq. H. Schœnb. t. 247-8. See *Chamædorea gracilis*.

Borbo'nia. (Named after *Gaston de Bourbon*, son of Henry IV. of France. Nat. ord., *Leguminosæ*; Tribe, *Genistææ*. 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 hell-

glass, in a cool house or pit; peat and loam and sand.

- B. barbata*. 4. Yellow. July. 1823.
- ciliata*. See *B. perforata*.
- cordata*. 3-6. Yellow. August. 1759. Jacq. H. Schœnb. t. 218.
- crenata*. 6. Yellow. July. 1774. B. M. t. 274.
- ericifolia*. See *Amphithalia ericæfolia*.
- lanceolata*. 3. Yellow. July. 1752. Jacq. H. Schœnb. t. 217.
- perfoliata*. See *Vascea perfoliata*.
- perforata*. 3. Yellow. July. 1816. Syn., *B. ciliata*.
- ruscifolia*. 3. Yellow. July. 1790. B. M. t. 2128.
- trineveia*. 6. Yellow. July. 1759.
- undulata*. 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, etc., draining pipes should be laid with an outfall into some neighbouring ditch. No fruit-tree will be healthy if its 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**.

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. 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 occupied 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 oleracea fimbriata*.

Varieties.—Amongst the best are

Cottagers' dwarf purple.

Ragged Jack.

Tall Green curled.

Imperial hearting.

Dwarf Green curled Scotch.

Variiegated Borecole.

Melville's variegated.

Asparagus Kale, etc.

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 removal.

Planting.—Set 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 Feb-

ruary (the earlier the better), into rows three feet apart each way, and planted deeply. The seed ripens about the beginning of August.

Boro'nia. (Named after *Boroni*, an Italian servant of Dr. Sibthorp's. Nat. ord. *Rutaceæ*.)

Greenhouse evergreen shrubs. Cuttings of young or half-ripened shoots, inserted in sand, under a glass, where there is the mildest heat; water must be given sparingly while in the cutting state; sandy peat and loam. Though greenhouse plants, most of them like a little extra heat in spring.

B. alata. 3. Red. May. Australia. 1825.

— *anemonifolia*. 2. Red. May. Australia. 1824.

— *anethifolia*. Australia. 1841.

— *varia'bilia*. Tasmania.

— *crenulata*. 2. Red. July. King George's

Sound. B. M. t. 3915.

— *cymosa*. Pink. Swan River. Syn., *B. tere-*

folia.

— *denticulata*. 2. Red. March to August. Australia. 1823. B. R. t. 1000.

— *dichotoma*. See *B. spathulata*, var. *elatior*.

— *Drummondii*. 2. Pink. May. W. Australia. Fl. Ser. t. 881.

— *elatior*. 4. Deep red-brown. May. W. Australia. 1874. B. M. t. 6285.

— *falcifolia*. Moreton Bay. 1841.

— *Fraseri*. 3. Red. May. New South Wales. 1821. B. M. t. 4052. Syn., *B. anemonæ-*

folia. Pax. Mag. 9, p. 123, but not of others.

— *latifolia*. Red. April. Australia. 1824.

— *ledifolia*. 2. Red. March. N. S. Wales. 1814.

— *megastigma*. 1. Brown-yellow. S. W. Australia. 1873. Very sweet scented. B. M. t. 6046.

— *microphylla*. 2. Pink. Australia. 1846.

— *molleis*. Australia. 1841.

— *ovata*. Crimson. May. Swan River. 1841.

— *pinna'ta*. 2. Purple. February to May. New South Wales. 1794. B. M. t. 1763.

— *polygalæfolia*. 2. Red. May. Port Jackson. 1824.

— *scabra*. 1 to 1½. Pink. Swan River.

— *serrulata*. 3. Scarlet. June. N. S. Wales. 1816. B. M. t. 842.

— *spathulata*. Pink. Swan River. 1845.

— *elatior*. Rose. October. Australia. 1841. Syn., *B. dichotoma*.

— *tetra'nara*. 2. Pale purple. May. Australia. 1824. Pax. Mag., 16, p. 227.

— *teretifolia*. See *B. cymosa*.

— *triphyl'la*. 2. Pink. May. Australia. 1840.

— Perhaps a variety of *B. ledifolia*.

— *vimi'nea*. Pink. Swan River.

Borre'ria. (Named after *J. W. Borrer*, a British cryptogamist. Nat. ord., *Rubiaceæ*.) See **Spermaceæ**.

B. commutata. See *Spermaceæ verticillata*.

Bo'scia. (Named after *L. Bosc*, a French professor of agriculture. Nat. ord. *Capparidaceæ*.)

Stove-cuttings of firm wood in heat, in sand, under a glass; lumpy, fibry loam and peat.

B. senegalensis. 3. White. Senegal. 1824.

Bosche'ria minaha'ssæ, is a garden name for what appears to be an *Artocarpad*. (1872.)

Bossia'a. (Named after *M. Bossier*

Lamartinière, who accompanied *La Pérouse* on his fatal voyage. Nat. ord., *Leguminosæ*; Tribe, *Genistææ*. Allied to *Hovea*.)

Greenhouse evergreen shrubs and trailers; cuttings of half-ripe shoots in sand, under a bell-glass, in April; peat and loam, both fibry, 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.

- E. buxifolia*. 4. Yellow. May. N. Holland. 1824.
- *cinerea*. 3. Yellow. May. Van Diemen's Land. 1802. B. M. t. 3895. Syns., *B. cordifolia* and *B. tenuicaulis*.
- *disticha*. 2. Yellow. May. N. Holland. 1840. E. R. 1841, t. 65.
- *ensata*. 6. Yellow. May. N. Holland. 1824. Syn., *B. rufa*, Maund Bot. t. 82, but not of R. Brown.
- *ericaarpa*. 1. Yellow. May. King George's Sound. 1837.
- *foliosa*. 4. Yellow. May. N. Holland. 1824.
- *Hendersoni*. Yellow and bronze. N. S. Wales. 1844.
- *heterophylla*. 3. Yellow. September. N. S. Wales. 1792. Syns., *B. lanceolata*, B. M. t. 1144, *B. ovata*, *Platylobium lanceolatum*, Andr. Rep. t. 205, and *P. ovata*, Andr. Rep. t. 266.
- *lenticularis*. See *B. rhombifolia*.
- *linnaei* des. Yellow. May. N. Holland. 1824.
- *linophylla*. 3. Orange. August. N. Holland. 1803. B. M. t. 2491.
- *microphylla*. 3. Yellow. July. N. S. Wales. 1803. B. C. t. 656. Syn., *Platylobium microphyllum*, B. M. t. 863.
- *ovata*. See *B. heterophylla*.
- *paucifolia*. See *B. rufa*, var. *virgata*.
- *prostrata*. ½. Yellow. August. N. S. Wales. 1803.
- *rhombifolia*. 1. Yellow. May. N. Holland. 1820. Syn., *B. lenticularis*.
- *rotundifolia*. 3. Yellow. May. N. Holland. 1824.
- *rufa* of R. Brown not of Maund, which is *B. ensata*. 6. Orange. August. N. Holland. 1803.
- — *foliosa*. Yellow. Australia. 1843. B. R. 1843, t. 63. Syn., *B. spinosens*.
- — *virgata*. 2. Yellow, reddish-brown. June. Swan River. 1841. B. M. t. 3986. Syns., *B. paucifolia* and *virgata*.
- *sclopesndria*. 10. Yellow. June. N. S. Wales. 1792.
- *tenuicaulis*. See *B. cinerea*.

Bostri'chus, 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. typo'graphus, Typographer-bark beetle. This attacks the pine-tribe, especially the silver-fir. A drawing of this insect is given at page 329, vol. iii. of *The Cottage Gardener*.

B. pina'stri, Pinaster, or Red-bark

beetle, confines its attacks to the pines, leaving the firs untouched, as the *B. la'rius* lives exclusively on the larch, and the *B. ortho'graphus* on the spruce-fir.

Boswe'llia. *Olibanum*-tree. (Named after *Dr. Boswell*, of Edinburgh. Nat. ord., *Burseraceæ*.)

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.

- B. gla'bra*. 39. Pale yellow. Coromandel. 1823. Bedd. Fl. Syl. t. 124.
- *serra'ta*. 20. Pale yellow. E. Ind. 1820. Linn. Trans. 15, t. 4.

Bot'hy. A residence for under gardeners, usually in or near the kitchen-garden. Besides the usual accommodation, rooms are often set apart for library and class purposes. These are always beneficial, as papers on gardening subjects are read alternately by the gardeners, followed by discussion, in which all may take part, and receive much benefit.

Mutual improvement societies should be encouraged by head gardeners wherever practicable.

Botry'ceras. (From *botrys*, a bunch, and *keras*, a horn; in reference to the bunches of horn like racemes. Nat. ord., *Anacardiaceæ*.)

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.

- B. lauri* num. 4. Cape of Good Hope. 1823.

Botry'chium. Moonwort. (From *botrys*, a bunch; in reference to the bunch-like formation of the seed-apparatus on the back of the leaf. Nat. ord., *Filices*.)

Perennial ferns, requiring greenhouse protection, with the exception of *B. lunaria* and *virginianum*, which are quite hardy. Peat, and rich loam.

- B. dawsoni'form*. 1. Himalayas. Syn., *B. sub-carnosum*.
- *lunaria*. ½. May. Britain. Eng. Bot. ed. 3, t. 1837.
- *ternatum*. 1. Hudson's Bay Territory. Syns., *B. fumaricoides* and *lunarioides*.
- — *australe*. ½. June. Australia and New Zealand. 1823. Syn., *B. australe*. Half-hardy.
- — *dissectum*. ½. July. United States. 1806. Syn., *B. dissectum*.
- — *lunariol'ides*. India.
- — *obli'quum*. ½. August. N. America. 1821. Syn., *B. obliquum*.
- *virginianum*. 1. August. N. America. 1790. Syn., *B. gracilis*. Hook. Gard. Ferns, t. 29.

Botryode'ndron. See *Meryta*.

Bottle Gourd. *Lagenaria*.

Bottle-tree. *Sterculia rupe'stris*.

Bottom-heat. Naturally the tem-

perature 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 more 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.

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*, having the horns of an ox; in reference to the curved lobes of the corona. Nat. ord., *Asclepiadaceæ*. Allied to *Stapelia*.)

Greenhouse succulent perennials. For cultivation, see *STAPELIA* and *CARALLUMA*.

B. europæa. †. Purple-brown, yellow. Summer. Sicily. 1833. B. E. t. 1731. Syn., *Stapelia Gussonianæ*, *S. europææ*, *Apteranthæ Gussonianæ*.

— *marocœna*. †. Purple-brown, yellow. Summer. Morocco. 1875. B. M. t. 6137.

— *tessellata*. See *Echinopsis cereiformis*.

Bou'chea. (In honour of *C. and P. Bouche*, two German naturalists. Nat. Ord., *Verbenaceæ*. Allied to *Stachytarpheta*.)

Stove perennials. For cultivation, see *VERBENA*.

B. cuneifolia. 4. White. April. Cape of Good Hope. 1821. Syn., *Chascanum cuneifolium*.

— *pseudogeranioides*. 2 to 5. Purple, white. September. Brazil. 1874. B. M. t. 6221.

Bougainvillea. (Named after the French navigator, *Bougainville*, who died in 1811. Nat. ord., *Nyctagineæ*.)

Greenhouse climbers, some of which are very showy. They are always best planted in the borders, and trained up pillars or rafters. When the blooming period is over, about November, they should be kept dry, and in February they should be closely spur-pruned, as practised with the vine. Cuttings of half-ripened wood in sand under a bell-glass. Rich turfy loam and leaf-soil.

B. glabra. Yellow; bracts large, pale rose. Brazil. 1861.

— *refulgens*. Purple-mauve. Brazil. 1887.

— *speciosa*. Yellow; bracts large, rosy. Brazil. 1861. Flor. Mag. vol. 1, t. 62.

— — *variegata*. Leaves variegated. Garden variety. 1890.

— *spectabilis*. 15. Pink. S. Amer. 1829. Syn., *Josepha angusta*. B. M. t. 4810.

— — *lateritia*. Bracts brick-red. Ill. Hort. t. 466.

— *splendens*. S. America. 1848.

— *vitifolia*. S. America. 1848.

Bourbon Palm. *Lata'nia*.

Boussingaultia. (Named after the celebrated chemist, *Boussingault*. Nat. ord., *Chenopodiaceæ*.)

Half-hardy tuberous-rooted plants. Seeds; division of the tuberous roots and the tubercules produced on the stem. Peat and rich loam.

B. baselloides. White. July. S. Amer. 1835. B. M. t. 3620.

— *Lachau'mei*. Rose. Cuba. 1872. Constantly in flower.

Bouvardia. (Named after *Dr. Bouvard*, curator of the Botanic Garden at Paris. Nat. ord., *Rubiaceæ*; Tribe, *Cinchoneæ*.)

Greenhouse evergreen under-shrubs, except where otherwise specified. Seed at times, in heat. Cuttings of young shoots in heat, in March or April. Shut up during the day, and air given at night. Also by roots, cut into pieces, and inserted in sandy soil, and placed in a brisk, sweet heat, in spring. Light, fibry soil. The species of this genus readily hybridize.

- B. angustifolia*. 2. Red. September. Mexico. 1838. Pax. Mag. vol. 7, p. 99.
 — *Cavanillei*. 1½. Scarlet. May. Mexico. 1846.
 — *flava*. 1½. Yellow. September. Mexico. 1844. B. R. 1846, t. 52.
 — *hirtella*. Scarlet. Mexico.
 — *Humboldtii corymbiflora*. White. 1879.
 — *Jacquinii*. See *B. triphylla*.
 — *Jasminiflora*. White. S. America. 1869.
 — *lesiantha*. 2. Scarlet. July. Guatemala.
 — *longiflora*. 2. White. Mexico. 1827. B. M. t. 4223.
 — *multiflora*. 1. White, violet. S. America.
 — *scabra*. 1. Bright pink. January. Mexico. 1884.
 — *strigillosa*. 3. Yellow. March. 1845.
 — *triphyllo*. 2. Scarlet. July. Mexico. 1794. B. R. t. 107; B. M. t. 1854. Syn., *B. Jacquinii*.
 — — *glabra*. 2. Scarlet. July. Mexico. 1794.
 — — *pubescens*. 2. Scarlet. July. Mexico. 1794.
 — — *splendens*. 2. Scarlet. April. Mexico. 1838. Syn., *B. splendens*. B. R. 1840, t. 37.
 — *versicolor*. 2. Red. August. S. Amer. 1814. B. R. t. 245.

Bowenia. (In honour of *Sir G. Bowen*, governor of Queensland. Nat. ord., *Cycadaceæ*.)

For cultivation, see *CYCAS*.

- B. spectabilis*. Queensland, Australia. B. M. t. 5398 and 6008.
 — — *serrulata*. Rockingham Bay. 1863. III. Hort. t. 366.

Bower. See **Arbour**.

Bowiea. (In honour of *J. Bowie*, Kew collector. Nat. ord., *Liliaceæ*.)

Half-hardy bulb. Seeds, offsets. Any light open soil. Placed in a sunny border, under the wall of a stove or greenhouse facing the south, this curious and interesting plant does well. At first the bulb throws up a single slender leaf, and afterwards a long leafless twining stem, which branches and flowers freely. Must be protected from frost.

B. vultabilis. Green. S. Africa. 1866. Stem twining. B. M. 5619.

Box (*Buxus sempervirens*), is noticed by the gardener chiefly as a plant suitable for edgings. For this purpose it is neat; but it is an exhaustor 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. See *The Cottage Gardener*, iv. 328, 350.

Box Elder. *Negundo*.

Box Thorn. *Lyceum*.

Brabei'um. African Almond. (From *brabeion*, a sceptre; in reference to the flower-racemes. Nat. ord., *Proteaceæ*. Allied to *Persoonia*.)

Greenhouse evergreen tree. Cuttings of ripe shoots under a bell-glass, in sand. Sandy loam. *B. stella'tum*. 15. White. August. Cape of Good Hope. 1731. Sweet scented.

Brachychi'ton. (From *brachys*, short, and *chiton*, a tunic. Nat. ord., *Sterculiaceæ*.)

Greenhouse shrubs, allied to *STERCULIA*. Cuttings in sand. Soil, rich loam.

- B. acerifolium*. 60 to 120. Bright red. Australia.
 — *Biadwilli*. Red. September. N. E. Australia. 1851. B. M. t. 5133.
 — *diversifolium*. 20 to 30. Australia. 1824.

Brachyc'ome. (From *brachys*, short, and *kome*, hair. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*. Allied to the *Daisy*.)

Annuals. Sown in a gentle hotbed in March, and transplanted as a half-hardy annual, or sown in the open with the other annuals in April. *B. diversifolia* by cuttings of half-ripe shoots, under a bell-glass; peat and loam.

- B. diversifolia*. ½. White. May. Australia. 1824. Greenhouse evergreen. Syn., *Pyrethrum diversifolium*, B. R. t. 1025.
 — *iberidifolia*. ½. Purple. May. Swan River. 1840. Half-hardy annual. B. R. 1841, t. 9.
 — — *albiflora*. ½. White. Swan River.

Brachylæ'na. (From *brachys*, short, and *læna*, a cloak, or covering; referring to the shortness of the involucre. Nat. ord., *Compositæ*; Tribe, *Inuloideæ*. Allied to *Tarhonanthus*.)

Greenhouse evergreen shrubs. Cuttings of half-ripe shoots, same as *Brachycome diversifolia*.

- B. dentata*. Yellow. Cape of Good Hope.
 — *nereifolia*. 4. White. September. Cape of Good Hope. 1752.

Brachyo'tum. (From *brachys*, short, and *otos*, the ear; in reference to the short appendages at the base of the anthers. Nat. ord., *Melastomaceæ*.)
 Stove shrub. For cultivation, see *PLEROMA*, to which it is allied.

- B. confertum*. Violet; bracts white. Andes, Peru. 1873. B. M. t. 6018.

Brachy'pteris. (From *brachys*, short, and *pteron*, a wing. Nat. ord., *Malpighiaceæ*.)

- Stove climber.
B. borealis. 6. Yellow. July. Columbia

Brachyse'ma. (From *brachys*, short, and *sema*, standard; the flowers having the standard petal short. Nat. ord., *Leguminosæ*; Tribe, *Podalyriacæ*.)

Greenhouse evergreen climbers. Seeds in March, in heat; cuttings of half-ripened shoots in summer, in sand, under a bell-glass, in a mild bottom-heat; loam and peat, with a little sand. *B. acuminatum*. Scarlet. Australia. Rev. Hort. 1866, t. 21.

- *aphyllum*. Brownish-crimson. N. Holland. 1849. B. M. t. 4481.
- *bracteolum*. 3. Crimson. April. Swan River. 1843.
- *hybridum*. Crimson, cream. March.
- *lancoletum*. 3. Scarlet. February. Swan River. 1848. B. M. t. 4652.
- *lactifolium*. 3. Crimson. May. N. Holland. 1803. B. M. t. 2008.
- *melanopetalum*. 4. Blackish-purple. April. S. W. Australia. 1874.
- *platyptera*. Crimson. May. Swan River. 1844.
- *præmorsum*. Red. N. S. Wales. 1848.
- *undulatum*. 3. Green. March. N. S. Wales. 1828. B. E. t. 642, B. M. t. 6114.
- *villosum*. 3. Crimson. March. Swan River.

Brachyspa'tha. (From *brachys*, short, and *spatha*, a spathe; the spathe is much shorter than the spadix. Nat. ord., *Araceæ*.)

Stove tuberous perennial. For cultivation, see AMORPHOPHALLUS, to which it is allied.

B. varia *bilis*. 3. Spathe greenish-purple, spadix whitish. E. Indies. 1876. G. C. 1876, p. 680.

Brachyste'ma. (From *brachys*, short, and *stelma*, a crown; referring to the coronal processes of the flowers. Nat. ord., *Asclepiadaceæ*.)

Greenhouse tuberous perennials, from the Cape of Good Hope. Cuttings in sandy soil, in heat; division of the roots; fibry loam.

- B. Arnottii*. ½. Brown, green. S. Africa. 1868. Ref. Bot. t. 9.
- *Barbæra*. Purple, speckled with yellow. S. Africa. 1866. B. M. t. 5607.
- *crispum*. ½. Brown, yellow. September. 1829.
- *ovatum*. 1. Yellowish-green. S. Africa. 1872. Bot. Ref. t. 226.
- *spatula* *tum*. 1. Green. June. 1826. B. R. t. 1113.
- *tuberosum*. 1½. Purple. June. 1821. B. M. t. 2343.

Bract. A reduced leaf in the axil of which one or more flowers are situated. Sometimes numerous bracts are arranged in a ring which is called an *involucre*, e.g., Daisy and Carrot. In the Lime-tree (*Tilia europæa*), the bract is partly united to the flower stalk.

Bracteole. A secondary bract.

Bra'hea. (Named in honour of *Tycho Brahe*, the celebrated astronomer. Nat. ord., *Palmaceæ*.)

Dwarf greenhouse palms. Imported seeds Rich light loam and fibrous peat.

- B. dulcis*. Mexico. 1865. Mart. Palm. t. 187.
- *flamentosa*. Lower California. 1875. Syns.,

Pritchardia filifera and *Washingtonia filifera*.

- B. nitida*. Mexico. Rev. Hort. 1887, p. 344.
- *Roezii*. California. 1876.

Brai'nea. (After *C. J. Braine*, Esq., of Hong Kong. Nat. ord., *Filices* — *Polypodiaceæ*.)

Stove Fern. See FERNS.

- B. insignis*. Hong Kong. 1856. Hook. Fil. Exot. t. 38.

Brake. *Pteris aquilina*.

Bramble. *Rubus fruticosus*.

Branching Annual Stock. *Malcolmia maritima*.

Bras'enia. (Derivation unexplained. Nat. ord., *Nymphæaceæ*; Tribe, *Cabombeeæ*.)

- B. peltata*. Red. July. N. America. 1798. Syn. *Hydropeltis purpurea*.

Brassa'vola. (Named after *A. M. Brassavola*, a Venetian botanist. Nat. ord., *Orchidaceæ*; Tribe, *Epidendree-Lælicæ*.)

Epiphytal orchids, requiring an intermediate house. Divisions; best grown on blocks of wood, with a little sphagnum. Water plentifully during the growing season.

- B. acavilis*. ½. Cream-coloured. June. Central America. 1852. Pax. Fl. Gard. v. 2, t. 152.
- *amazonica*. Brazil. B. R. 1839, sub t. 5.
- *angustata*. Yellowish-green. June. Demerara.
- *cordata*. 1. White, green. May. Brazil. B. M. t. 3732.
- *cucullata*. ½. Purple and white. June. W. Ind. 1790. Syns., *B. odoratissima*, Gf. t. 33, and *Epidendrum cucullatum*, B. M. t. 543.
- *cuspidata*. ½. White. March. Trinidad. 1859. B. M. t. 3722.
- *Digbyana*. ½. Yellow, white, and purple. July. Honduras. 1844. B. M. t. 4474.
- *elegans*. Lilac. Antigua. B. M. t. 3098. Syn. *Bletia rigida*.
- *Gibbia* *na*. White, spotted with chocolate.
- *glauca*. 1. Orange, white. March. Vera Cruz. 1837. B. M. t. 4033.
- *grandiflora*. See *B. nodosa*, var. *grandiflora*.
- *lineata*. Light yellow. S. Amer. 1850. B. M. t. 4734. Syn., *B. Mathiewana*.
- *Martiana*. 1. White. March. Berbice. 1838.
- *nodosa*. 1. Yellowish-green. October. Mexico. 1838. B. M. t. 3229.
- *grandiflora*. Yellow, white, purple. S. America. 1865.
- *odoratissima*. See *B. cucullata*.
- *Perriani*. 1. Green. September. Rio Janeiro. 1831. B. M. t. 3761.
- *retusa*. White, green. March. Maracaybo.
- *rhopalorrhachis*. Guatemala.
- *tuberculata*. ½. White. July. Botaf Bay. 1827. B. M. t. 2878.
- *venosa*. 1. White. March. Honduras. 1839. B. R. 1840, t. 39.

Bra'ssia. (Named after *Mr. Brass*, a botanical traveller. Nat. ord., *Orchidaceæ*. Tribe, *Vandeeæ*.)

Stove orchids. Divisions; rough peat, in pots or baskets, well drained. Those from Guatemala require less heat than those from the West

Indies; water freely when growing, but give little when at rest.

- B. angu'sta*. See *B. Lawrenceana*, var. *angusta*.
 — *antho'stes*. Deep yellow, blackish-purple. Tropical America. 1879. Warn. Orch. Alb. t. 159.
 — *arcu'gera*. Peru. 1869.
 — *arista'ta*. Yellow, brown. August. Guatemala. 1844.
 — *bi'dens*. Brown, yellow. May. Brazil. 1842.
 — *brachia'ta*. 2. Yellowish-green and brown. September. Guatemala. 1843. B. R. 1847, t. 29.
 — *cauda'ta*. 1. Yellow and brown. February. W. Ind. 1823. B. R. t. 832.
 — — *hierogly'phica*. The brown marks on the sepals and petals are in the form of bars, not spots. W. Ind. III. Hort. 1881, t. 410.
 — *cinnamo'mea*. Dull brown, lip whitish, speckled with purple. New Grenada. Syn., *B. havanensis*.
 — *chlo'rops*. 2. Green, blackish. Costa Rica. 1873.
 — *Clowe'sii*. Brown, yellow. August. Brazil. 1844.
 — *cochlea'ta*. See *B. Lawrenceana*, var. *cochleata*.
 — *cryptophta'lmia*. Yellow, blackish-violet. Winter. Peru. 1876.
 — *euo'des*. Brownish-red, yellow. May. Columbia. 1830.
 — *farini'fera*. Red, brown. Ecuador. 1870.
 — *Greondia'na*. Yellow, spotted with deep red. Costa Rica.
 — *gluma'cea*. Greenish-yellow, with brown rings and spots. Venezuela. 1868.
 — *gutta'ta*. See *B. maculata*, var. *guttata*.
 — *havane'nsis*. See *B. cinnamomea*.
 — *Keilia'na*. Orange. Brazil. 1862.
 — — *tri'stis*. Deep amber brown; lips pale lemon, with brown spots near base. Caraccas. Warn. Orch. Alb. t. 347.
 — *Lancea'na*. 2. Yellow - brown spotted. January. Surinam. 1843. B. R. t. 1754.
 — — *macrosta'chya*. 2. Green, brown. Demerara. Syn., *B. macrostachya*.
 — — *pu'mila*. Yellow, purple. 1844.
 — — *viridifo'ra*. 2. Green. March. Demerara. 1833.
 — *Lawrenceana*. 1. Yellow, brown. April. Brazil. 1839.
 — — *angu'sta*. Yellow. October. Brazil. 1839. Syn., *B. angusta*.
 — — *cochlea'ta*. 1. Green, brown. April. Demerara. 1834. Syn., *B. cochleata*.
 — — *longi'ssima*. 1. Orange-yellow, purple-brown. September. Costa Rica. 1868. B. M. t. 5748.
 — *macrosta'chya*. See *B. Lanceana*, var. *macrostachya*.
 — *macula'ta*. 1. Yellow-red spotted. April. Jamaica. 1806. B. M. t. 1691.
 — — *gutta'ta*. Green, yellow. August. Guatemala. 1843. B. M. t. 4003. Syn., *B. Wrayæ*.
 — *peruvia'na*. 1. Yellow, green. April. 1844.
 — *pu'mila*. See *B. Lanceana*, var. *pumila*.
 — *signa'ta*. Green turning to yellow, with brown lines at base; lip white, with purple and orange spots. 1881.
 — *thyrs'o'des*. Yellow, spotted with greenish. Peru. 1868.
 — *verruco'sa*. Green, with dark purple blotches; lip white. March. Guatemala.
 — — *grandifo'ra*. Larger and paler than the type.
 — *Wrayæ*. See *B. maculata*, var. *guttata*.

Bra'ssica. Cabbage. (From *bresic*, the Celtic name for Cabbage. Nat. ord., *Cruciferae*.)

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. botry'tis*. Broccoli.
 — *caulifo'ra*. Cauliflower.
 — *cau'lo-ra'pa*. Kohl Rabi.
 — *simbria'ta*. Borecole.
 — *na'pa-bra'ssica*. Turnip-cabbage.
 — *na'pus*. Rape.
 — *olera'cea*. Cabbage.
 — *Rutaba'ga*. Swede.

Bravo'a. (Named after *Bravo*, a Mexican botanist. Nat. ord., *Amaryllideæ*.)

Pretty Mexican small bulbs, requiring slight protection in winter, admirably adapted for the greenhouse. Offsets or seeds sown as soon as ripe; light, rich loam, leaf-soil, and sand.

B. Bullia'na. 2-3. Whitish, tinged with greenish-purple outside; dull yellow within. Mexico. 1884.

— *geminifo'ra*. Orange-red. July. Mexico. 1841. B. M. t. 4741.

Brazil-nut. *Bertholle'tia*.

Brazil-wood. *Caesalpi'nia bra-silic'nsis*.

Bread-fruit. *Artocarpus*.

Bread-nut. *Brosi'mum*.

Bread-root. *Psora'lea esculen'ta*.

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. (Dedicated to the memory of *Professor J. G. S. van Bred*, Nat. ord., *Melastomaceæ*.)

Greenhouse shrub. Seeds, cuttings of the ripened shoots in sandy loam, under a hand-glass, in heat. Rich light loam and peat. Summer temp. 60° to 75°; winter, 50° to 60°.

B. hirsu'ta. Rosy. Autumn. Japan. 1870. B. M. t. 6647.

Bremontie'ra. Bois de Sable. (Named after *M. Bremontier*. Nat. ord., *Leguminosæ*; Tribe, *Hedysareæ*. Allied to *Hedysarum*.)

Stove evergreen shrub. Cuttings in sand, under a glass, in heat; fibry loam and peat, with a little sand. Summer temp. 60° to 75°; winter, 50° to 55°.

B. ammo'nylon. 4. Purple. Mauritius. 1826.

Brevoo'rtia coccinea. B. M. t. 5857. See **Brodiaea coccinea**.

Bre'xia. (From *brexis*, rain; in reference to the protection from rain given

by the large leaves of some of the species. Nat. ord., *Saxifrageæ*; Tribe, *Escallo-niææ*.)

Stove evergreen trees. Half-ripened shoots in sand, under a bell-glass, in bottom-heat; sandy peat, and a third loam. Summer temp. 60° to 75°; winter, 50° to 55°.

B. chryso'phylla. 30. Mauritius. 1820. B. R. t. 730.

— *madagascari'ensis*. 30. Green. June. Madagasc. 1812. B. R. t. 872.

— *spino'sa*. 30. Green. June. Madagascar. 1812.

— — *integrifolia*. Rchb. Hort. t. 222.

Brickellia. (Nat. ord., *Compositæ*; Tribe, *Eupatoriaceæ*.) Syn., *Bulbostyles*.

Stove plants. Cuttings in sand, with bottom-heat, under a bell-glass; loam and peat.

B. Cavanille'sii. 1½. Purple. August. Mexico. 1827. Evergreen undershrub.

— *pe'ndula*. Yellow. August. Mexico. 1832.

— *veronicifolia*. 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.

Bridges, says Mr. Whately, are inconsistent with the nature of a lake, but characteristic of a river. They are, on that account, used to disguise the termination of the former; but the deception has been so often practised that it no longer deceives, and a bolder aim at the same effect will now be more successful. If the end can be turned just out of sight, a bridge at some distance raises a belief, while the water beyond it removes every doubt of the continuation of the river. The supposition immediately occurs, that if a disguise had been intended, the bridge would have been placed further back, and the disregard thus shown to one deception gains credit for the other.

As a bridge is not a mere appendage to a river, but a kind of property which denotes its character, the connection between them must be attended to. From the want of it, the single wooden arch, once much in fashion, seemed generally

misplaced. Elevated, without occasion, so much above it, it was totally detached from the river, and often seen straggling in the air without a glimpse of the water to account for it; and the ostentation of it, as an ornamental object, diverted all that train of ideas which its use as a communication might suggest. The vastness of Walton Bridge cannot, without affectation, be mimicked in a garden where the magnificent idea of inducting the Thames under one arch is wanting; and where the structure itself, reduced to a narrow scale, retains no pretension to greatness. Unless the situation makes such a height necessary, or the point of view be greatly above it, or wood or rising ground, instead of sky, behind fill up the vacancy of the arch, it seems an effort without a cause, forced and preposterous.

The vulgar footbridge of planks, only guarded on one hand by a common rail, and supported by a few ordinary piles, is often more proper. It is perfect as a communication, because it pretends to nothing further; it is the utmost simplicity of cultivated nature; and, if the banks from which it starts be of a moderate height, its elevation preserves it from meanness. No other species of bridge so effectually characterizes a river. It seems too plain for an ornament, too obscure for a disguise; it must be for use, it can be a passage only. It is, therefore, spoiled if adorned; it is disfigured if only painted of any other than a dusky colour. But, being thus incapable of all decoration and importance, it is often too humble for a great, and too simple for an elegant, scene. A stone bridge is generally more suitable to either; but in that, also, an extraordinary elevation is seldom becoming, unless the grandeur compensates for the distance at which it leaves the water below.

A gentle rise and easy sweep more closely preserve the relation. A certain degree of union should also be formed between the banks and the bridge, that it may seem to rise out of the banks, not barely to be imposed upon them. It ought not, generally, to swell much above their level; the parapet-wall should be brought down near to the ground, or end against some swell; and the size and the uniformity of the abutments should be broken by hillocks or thickets about them. Every expedient should be used to mark the connection of the building, both with the ground from which it starts, and the water which it crosses.

In wild and romantic scenes may be introduced a ruined stone bridge, of which some arches may be still standing; and the loss of those which have fallen may be supplied by a few planks with a rail thrown over the vacancy. It is a picturesque object—it suits the situation and the antiquity of the passage. The care taken to keep it still open, though the original building is decayed, the apparent necessity which thence results for a communication, give it an imposing air of reality.

Brillantaisia. (In honour of M. Brillant. Nat. ord., *Acanthaceæ*. Syn., *Belantheria*.)

Stove evergreen. For culture, see BARLE'RIA. *B. ovarie'nsis*. 3. Purple. March. Western Africa. 1863. B. M. t. 4717. Syns., *Belantheria Belvisiana*, and *B. lamium*. — *Vogelia'na*. Syn., *Belantheria Vogeliana*.

Brining. See **Steeping.**

Briza. (From *brizo*, to nod. Nat. ord., *Gramineæ*.)

Ornamental hardy grasses, largely used for bouquets and decorative purposes; the branches should be collected when full grown, and placed in stands to dry. *B. media* is a useful rock plant. *B. spicata* requires a stove or intermediate house. Seeds and division.

B. Clu'sii. 1½. June. South Europe. 1820. Annual. — *ma'xima*. 1½. June. South Europe. 1633. B. M. t. 357. Annual. — *me'dia*. 1. June. Britain. Eng. Bot. ed. 3, t. 1744. Common quaking grass. Perennial. — *mi'nor*. ½. July. England. Syns., *B. gracilis* and *minima*. Eng. Bot. ed. 3, t. 1775. Annual. — *rotunda'ta*. Mexico to Chili. Gf. 1887, p. 638. Perennial? — *ru'bra*. 1. June. South Europe. 1820. Annual. — *spica'ta*. ¾. Brazil. About 1883. Very graceful.

Brocchia. (Nat. ord., *Bromeliaceæ*.)

Stove tree. *B. cordylinoi'des*. 15. Yellow. British Guiana. 1888.

Brodiaea. (Named after J. J. Brodie, a Scotch cryptogamist. Nat. ord., *Liliaceæ*. Allied to *Allium*.)

Charming hardy bulbs requiring a light rich soil and sunny position; offsets, and seeds.

B. Bridge'sii. Blue. California. 1838. — *califo'rnica*. Pale brown. July. California. 1848. — *capita'ta*. 1. Violet. May. California. 1871. Syn., *Milla capitata*. — *cocci'nea*. Blood-red, yellow, green. June. California. 1870. Syn., *Brevortia coccinea*, B. M. t. 5857. — *cong'es'ta*. 1. Blue. July. Georgia. 1806. — — *alba*. White. — *Dou'g'sii*. White. July. N. Amer. 1826. B. M. t. 6907. Syn., *Triteleia grandiflora*.

B. grandiflora. 1½. Blue. N. Amer. 1806. B. E. t. 1183. Syn., *Hookera coronaria*. — *Henderso'ni*. Yellow striped green, and purple. W. North America. 1890. — *Hove'lii*. 1½ to 2. Bluish purple. July. California. 1880. B. M. t. 6989. — *izoi'des*. See *Milla*. — *la'ctea*. 1 to 2. White. June. California. 1833. Syns., *Hesperocordon lacteum*, and *Milla hyacinthina*. — *multi'flora*. Blue-purple. California. 1872. B. M. 5989. — *Palme'ri*. 1 to 2. Bright purple. California. 1889. — *volu'bilis*. 4 to 12. Rose. California. 1874. B. M. t. 6123. Syn., *Stropholirion volubile*.

Hookera pulchella, Salis. Parad. t. 117, is probably a *Brodiaea*.

Bromelia. (Named after Bromel, a Swedish botanist. Nat. ord., *Bromeliaceæ*. 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. agavo'i'des*. 1881.

— *a'nanas*. B. M. t. 1554. See *Ananassa sativa*. — *antiaca'ntha*. Purple, scarlet. Brazil. 1864. — *bi'color*. Scarlet. Chili. 1872. Syns., *B. Jovillei* and *B. pitcairniaefolia*. — *bractea'ta*. 2. Pink. September. Jamaica. 1785. — *chrysa'ntha*. 2. Blue. Caraccas. 1819. Jacq. H. Schoenb. t. 55. — *clande'stina*. See *Gregia sphacelata*. — *crue'nata*. 2. Blue, white. August. Rio Janeiro. 1824. — *di'scolor*. Pink. April. South Europe. — *exu'dans*. See *Echmea*. — *fastuo'sa*. 4. Purple. August. S. Amer. 1816. — *Ferna'nda*. Yellowish; bracts orange-red. Para. 1872. — *hu'milis*. See *Karatas*. — *Kara'tas*. 2. Pink. W. Ind. 1739. Red. Lil. t. 457. — *lingula'ta*. 1½. Yellow. May. S. Amer. 1759. — *longifo'lia*. 2. Pink. August. Guiana. 1852. — *paucifo'ra*. White, blue; bracts white. Tropical America. 1866. — *Pi'nguini*. 3. Red. March. W. Ind. 1690. Red. Lil. t. 396. — *scarlati'na*. 1881. — *scé'ptrum*. Purple, scarlet. 1864. Syn. B. *fastuosa Bergmanni*. — *sy've'stris*. 3. Crimson. July. S. Amer. 1820. B. M. t. 2392.

Bromheadia. (Named after Sir E. F. Bromhead, Bart. Nat. ord., *Orchideæ*. Allied to *Ansellia*.)

Stove orchid. Offsets or division after flowering, sandy, fibry peat with plenty of drainage. Water plentifully during the growing season.

B. patu'stris. 3. White, yellow, and purple. June. Sumatra. 1840. B. M. t. 4001.

Brongniartia. (Named after Brongniart, a French botanist. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*.)

Ornamental greenhouse evergreen under-shrubs. Cuttings in sand, under a bell-glass, of young shoots, but firm at the base; sandy loam and fibry peat.

B. Podalyrioi'des. 1. Flesh. September. New Spain. 1827.

— *seri'cea*. 1. Purple. September. Mexico. 1843.

Broom. See *Besom*.

Broom. *Spartium* and *Cytisus spinosus*.

Broom (Spanish). *Genista hispanica*.

Broom-Cypress. *Ko'chia scoparia*.

Broom-Rape. *Oroba'nche*.

Brosimum. Bread-nut. (From *brosimos*, edible, or good to eat; the fruit being edible. Nat. ord., *Urticaceae*.)

The far-famed Cow-tree of South America, whose milky juice is as rich and wholesome as the milk of the cow, is *Brosimum Humboldtii*. Another species, *B. alicastrum*, 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, fibry loam.

B. alicastrum. 6. Jamaica. 1776.
— *spurium*. See *Pseudolmedia spuria*.
— *Humboldtii*. 50. Caraccas. 1829. Rev. Hort. 1874, p. 314. Syn., *Galactodendron utile*.

Brote'ra ova'ta. See *Melhania*.

Broughtonia. (Named after Mr. Broughton, an English botanist. Nat. ord., *Orchidaceae*; Tribe, *Epidendreae-Laeliaceae*.)

Stove evergreen orchids allied to *Laelia*, thriving best on blocks with a little sphagnum. Water abundantly during the growing season; division.

B. aurata. See *Epidendrum aurantiacum*.
— *nitida*. 1½. Red. June. E. Ind. 1824.
— *sanguinea*. ¾. Crimson. May. Jamaica. 1793. Syn., *B. coccinea*, B. M. t. 3536.
B. M. t. 3076 is a form with longer leaves and narrower petals.

Broussonetia. (Named after Broussonet, a French naturalist. Nat. ord., *Urticaceae*.)

In general aspect resembling the mulberry-tree; but less hardy. Suckers and cuttings of ripened wood, inserted in autumn, and seeds sown when ripe, or kept over to the following March; good garden-soil.

B. papyrifera. 12. June. Japan. 1751. B. M. t. 2358.
— *cucullata*. 12. June. Japan. 1824. Syn., *B. navifolia* and *spathulata*.
— *fructu-albo*. 12. August.
— *lacinata*. 1847. Syn., *B. papyrifera*, var. *dissecta*.
— *macrophylla*. Leaves large.
— *variegata*. 1846.
— *Plumieri* and *tinctoria*. See *Chlorophora tinctoria*.
— *spathulata*. See *B. papyrifera*, var. *cucullata*.

Browallia. (Named after J. Browallius, bishop of Abo. Nat. ord., *Scrophulariaceae*.)

Ornamental shrubs or herbs, hardy unless where otherwise stated; seeds sown in a mild heat, in March; potted and re-potted, and kept

in the greenhouse during summer; light, rich soil.

B. abbreviata. Light red. 1852. Gfl. t. 94.
— *demi'ssa*. ¾. Blue. August. S. Amer. 1735. B. M. t. 1136. Syn., *B. elata* (B. M. t. 34), *B. elongata* and *lactea*. Stove.
— *grandiflora*. 2. Light yellow. June. Peru. 1829. B. M. t. 3069. Syn., *B. cordata*.
— *Jamesoni*. B. M. t. 4605. See *Streptosolen Jamesoni*.
— *Roe'zlii*. 1½ to 2. Light blue or white. Summer. Rocky Mountains. Greenhouse.
— *speciosa*. 2. Purple. September. Quindin. 1846.

Bro'wnea. (Named after Dr. Brown. Nat. ord., *Leguminosae*; Tribe, *Amherstieae*. Allied to *Caesalpinia* and *Amherstia*.)

Stove evergreen shrubs. Cuttings of ripe wood in sand, under a glass, and placed in a strong bottom-heat; peat and loam.

B. Ariza. 30. Crimson-scarlet. March. Columbia. Syn., *B. princeps*. B. M. t. 6469.
— *Birsche'lii*. 10. Rose. La Guayra. 1872. B. M. t. 5998.
— *coccinea*. 6. Scarlet. July. W. Ind. 1793. B. M. t. 3964.
— *erecta*. 10. Scarlet. S. America.
— *grandiceps*. 6. Red. Caraccas. 1829. B. M. t. 4859.
— *latifolia*. 6. Scarlet. Trinidad. 1824. Jacq. Frag. t. 17.
— *macrophylla*. Orange-scarlet. Central America. 1879.
— *racemosa*. 6. Rose. Caraccas. 1826.
— *rosa del Monte*. 8. Scarlet. June. S. Amer. 1820. Syn., *B. speciosa*.

Brownlowia. (Named after Lady Brownlow. Nat. ord., *Tiliaceae*. Allied to *Grewia*.)

Stove tree. Cuttings of ripe shoots in heat; rich, loamy soil.
B. elata. 60. Yellow. May. E. Ind. 1820. B. M. t. 1472.

Brown-tailed Moth. *Porthesia*.

Bru'cea. (Named after Bruce, the African traveller. Nat. ord., *Simarubaceae*.)

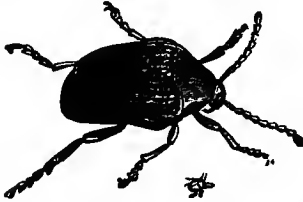
This genus possesses that intense bitter, for which *Quassia*, the head of this small order, has long been celebrated. Stove evergreen shrubs. Ripened cuttings in sand, under a glass, in bottom-heat.

B. antidysentrica. 8. Green. May. Abyssinia. 1775. Syn., *B. ferruginea*.
— *sumatрана*. 20. Green. May. Malay Archipelago. 1820. Syn., *B. gracilis*.

Bru'chus. A genus of small beetles, which confine their depredations chiefly to the seeds of leguminous plants.

Bru'chus 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

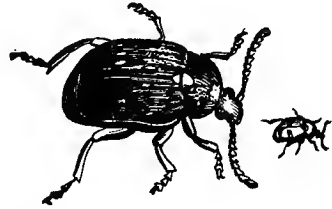
pierced but would produce either a weak, unhealthy plant, or not vegetate at all. Those holes in the "worm-eaten" peas and beans are made by a small beetle (*Bruchus granarius*), produced from a grub, or caterpillar, which has eaten away the vital parts of the seed; and, when it has passed through the 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 a'ter. The Furze-Beetle. This little insect is shown in the annexed cut of its natural size, as well as magnified. 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 p'isi*, 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-pots of *Chorizema*, and other delicate and scarce leguminous plants in greenhouses, pierced by the *Bruchus p'isi*. 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.

Brugmansia. See *Datura*.

B. floribunda. Paxt. Mag. vol. 9, p. 3. See *Juanulloa*.

Bruise. See *Canker*.

Brunfelsia. (Named after *Brunfels*, a German physician. Nat. ord., *Scrophulariaceæ*; Tribe, *Salpiglossideæ*. Allied to *Salpiglossis*.)

Stove evergreen shrubs. Cuttings in sandy soil, in a moist heat; rich, lumpy, fibry soil.

B. acuminata. 2. Purple. April. Rio Janeiro. B. M. t. 4189.

— *americana*. 4. Pale yellow. June. W. Ind. 1735. B. M. t. 393.

— *angustifolia*. 4. Pale yellow. July. W. Ind.

— *latifolia*. 4. Pale yellow. June. W. Ind.

- B. angusta*. 2. Purple. April.
 — *calycina*. 2. Pale purple. June. Brazil. 1850. B. M. t. 4583.
 — *confertiflora*. 1½. Blue. January to June. Brazil.
 — *eximia*. 2½. Purple. June. Brazil. 1847. B. M. t. 4790.
 — *grandis*. 2. Pale cream. June. 1847.
 — *grandiflora*. 3. Green. June.
 — *Hopea* na. 1. Blue-purple, throat yellow. Brazil. 1828. Syn., *Franciscea Hopeana*. B. M. t. 2829.
 — *hydrangeoformis*. 4. Purple. April. Brazil. 1840. B. M. t. 4209.
 — *latifolia*. 4. Purple. April. Rio Janeiro. 1840. B. M. t. 3907.
 — *Lindeniana* na. Purple. Brazil. 1865. Syn., *Franciscea Lindeniana*. Belg. Hort. 1865, p. 226.
 — *Lockhartii*. Purple. April. W. Ind. 1840.
 — *montana* na. 4. White. July. S. Amer. 1820.
 — *nitida*.
 — *— jamaicensis*. 5. Yellow. June. Jamaica. 1844. B. M. t. 4287.
 — *Pohlia* na. Blue, white. April. Brazil. 1840.
 — *undulata*. 4. White. June. Jamaica. 1820.
 — *uniflora*. 3. White, purple. July. Brazil. 1826. B. C. t. 1332.
 — *violacea*. 3. Livid purple. July. W. Ind. 1815. B. C. t. 792.

Brunia. (Named after *C. Brun*, a traveller in the Levant. Nat. ord., *Bruniaceæ*.)

Greenhouse evergreen shrubs and undershrubs, from the Cape of Good Hope. Cuttings of young shoots in sand, under a hand-light, in summer; sandy peat.

- B. abrotanoides*. See *Berzelia abrotanoides*.
 — *ciliata*. See *Staavia*.
 — *como'sa*. See *Berzelia lanuginosa*, var. *glabra*.
 — *e'legans*. 2. White. July. 1817.
 — *ericoides*. See *Berzelia squarrosa*.
 — *formosa*. 2. White. 1817.
 — *globosa*. See *Berardia globosa*.
 — *glutinosa*. See *Staavia*.
 — *la'vis*. 2. White. July. 1822.
 — *macrophylla*. 1. White. July. 1815.
 — *microphylla*. See *Berardia microphylla*.
 — *nodiflora*. 6. White. July. 1786.
 — *paleacea*. See *Berardia paleacea*.
 — *phylicoides*. See *Berardia phylicoides*.
 — *radicata*. See *Staavia*.
 — *squarrosa*. See *Berzelia squarrosa*.
 — *superba*. See *Berzelia lanuginosa*, var. *longifolia*.
 — *virgata robustior*. 3. White. July. 1794. Syn., *B. verticillata*.

Brunnichia. (Named after *Brunnich*, a Danish botanist. Nat. ord., *Polygonaceæ*.)

Greenhouse evergreen climber. Cuttings root freely; fibry loam, with a little sand.

- B. cirrho'sa*. 6. Pink. July. Carolina. 1787.

Brunonia. (Named after *Dr. Brown*, the celebrated English botanist. Nat. ord., *Brunoniaceæ*.)

Dr. Brown himself, and other great authorities, have been in doubts as to the true position and affinity of the solitary genus of which this order is composed. Herbaceous perennial. Seeds and divisions; sandy loam and fibry peat. It requires the protection of a frame or greenhouse in winter; fragrant.

- B. austr'alis*. 1. Blue. Australia. 1834. B. R. t. 1833.

Brunsvigia. (Named after the noble house of Brunswick. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllidææ*.)

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 South Africa. Offsets; loam and fibry peat; 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. ciliaris*. B. R. t. 1153. See *Buphane ciliaris*.
 — *Cooperi*. 1½. Yellow, red. S. Africa. 1872. Ref. Bot. t. 330.
 — *Cora'nica*. See *Ammocharis falcata*.
 — *palida*. See *Ammocharis falcata pallida*.
 — *disticha*. See *Buphane disticha*.
 — *falcata*. ¾. Red. May. 1774. B. M. t. 1443.
 — *gigantea*. 1. Red. July. Cape Colony. 1700. Syn., *B. multiflora*, B. M. t. 1619, and *Amaryllis orientalis*.
 — *grandiflora*. 1. Pink. August. 1827. B. R. t. 1335.
 — *Josephina*. 1½. Scarlet. July. 1814. B. R. t. 192-3. Syn., *Amaryllis Josephina*.
 — *— mi'nor*. 1. Scarlet. July. 1814.
 — *— striata*. 1½. Scarlet. July. 1823.
 — *lu'cida*. See *Nerine lucida*.
 — *marginata*. See *Nerine marginata*.
 — *mi'nor*. ¾. Pink. July. 1822. B. R. t. 954.
 — *multiflora*. See *B. gigantea*.
 — *radula*. ¾. Red. June. 1790. Syn., *Amaryllis radula*, Jacq. H. Schœn. t. 68.
 — *Slateriana*. Bright rose-red. Cape Colony. Syn., *Amaryllis Banksiana*, B. R. 1842, t. 11.
 — *striata*. ¾. Pink. July. Cape Colony. 1823. Syn., *Amaryllis striata*, Jacq. H. Schœn. t. 70.
 — *tozicaria*. B. R. 567. See *Buphane disticha*.

Brussels Sprouts. See *Borecole*.

Brya. (From *bryo*, to germinate; the seeds, at times, sprouting in the pod. Nat. ord., *Leguminosææ*; Tribe, *Hedysareææ*. Allied to *Hedysarum*.)

Stove evergreen shrubs. Seeds and cuttings in hotbed; rich, fibry loam.

- B. e'benus*. 12. Yellow, green. July. Jamaica. 1713. B. M. t. 4670. Jamaica ebony.
 — *leone'nsis*. 12. Yellow, green. Sierra Leone. 1824.

Bryanthus. See *Menziesia*.

Bryonia. (From *bryo*, to sprout; in allusion to annual growth from the tuber. Nat. ord., *Cucurbitaceææ*.)

Tuberous-rooted perennial herbaceous plants, producing annual climbing stems. Seeds, division of the tubers. Rich loam.

- B. dio'ica*. Greenish yellow; berries bright red. Summer. Britain. Hardy. Eng. Bot. ed. 3, t. 517.
 — *lacinio'sa*. Yellowish; berries scarlet, striped with white. India. 1865. Syn., *Bryonopsis laciniosa*. Stove.

Bryonopsis. See *Bryonia*.

Bryophyllum. (From *bryo*, to sprout, and *phyllon*, a leaf. Nat. ord., *Crassulaceææ*.)

A greenhouse succulent plant, chiefly regarded as a curiosity; but a single leaf laid down on a damp surface will throw out young plants all round its margin.

B. calycinum. S. Yellowish-red. April. India. 1806.

Bubro'ma. See **Guazuma**.

B. guazu'ma. See *Guazuma ulmifolia*.

Bucco. (Nat. ord., *Rutaceæ*.)

B. crenata. See *Barosma crenata*. B. M. t. 8418.

— *prolifera.* See *Agathosma prolifera*.

Buchne'ra. (Nat. ord., *Scrophulariaceæ*.)

B. viscosa. See *Sphenandra viscosa*. B. M. 217.

Bu'cida. Olive Bark-tree. (From *bous*, an ox; in reference to the fruit being like an ox's horn. Nat. ord., *Combretaceæ*.)

B. bu'ceras. See *Terminalia*.

Buck-bean. *Menya'nthes trifoliata*.

Buckla'ndia. (Named in honour of Dr. *Buckland*, Dean of Westminster and Professor of Geology at Oxford. Nat. ord., *Hamamelidaceæ*. Allied to *Liquidambar*.)

Greenhouse shrub, growing to a tall tree. Foliage ornamental in young plants. Cuttings of ripened shoots in sandy loam, under a hand-glass, and in moderate heat. Rich loam and peat, or leaf-mould.

B. popu'lnæa. 100. Himalaya. 1875. B. M. t. 6507.

Buckler Mustard. *Biscutella*.

Buckthorn. *Rhamnus*.

Buckwheat. *Polygonum fagopyrum*.

Buckwheat-tree. *Mylocaryum*.

Bud. The buds are organized 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 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.

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. Deli-

cate 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; but 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.¹ 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.

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, prudent, 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 organization, 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 paralyzed 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

¹ The best budding instrument we have ever seen is made by Mr. Turner, Neepsend, Sheffield. It has a budding-knife at one end, and a grooved hook at the other end. This hook being inserted in the T cut made with the knife, keeps it open, and allows the bud to be slipped easily down the groove into its place. It really supplies the budder with a third hand.

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, etc.—about the first or second week in August; the period, of course, being liable to be modified by several circumstances, as heat, drought, etc. 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 half 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.

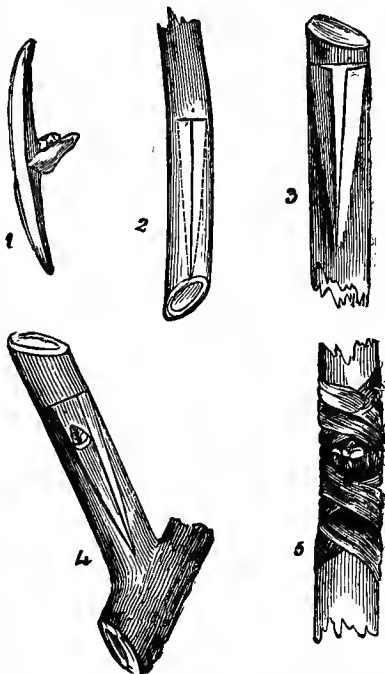
We before observed, that when the season is late, and the bark rises somewhat badly, it may be excited to rise. A liberal watering with liquid-manure, of the temperature of 90°, the day before the operation, will, in general, facilitate the proceeding. When the bud, or shield, after the wood is removed, 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 your stocks, and all the side-branches to three, that is, for standards. For dwarfs, cut off to within six inches of the ground; then, with the knife, make an incision on the upper side of

the young side-branches, as close to the main stem as possible. The incision should be about an inch long, lengthwise on the branch. Cut a cross just at the top of this incision, in a direction somewhat more slanting than in the annexed drawing (fig. 2). 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



1. The bud, with the wood taken out, and ready to be put into the stock side-branches.
2. The branch, or stem, with the incisions made, previously to raising the bark.
3. The bark raised for receiving the shield of the bud.
4. The bud fitted into its place.
5. The bandage put over the parts. It is here represented as done with a shred of bass-mat; but stout worsted thread is better.

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. A laurel-leaf fastened at each end by a ligature round the stock, so as to arch over the bud, will complete the arrangement; and thus the sun's rays, the air, and wet will be most effectually excluded, the admittance of any one of which is fatal to the union of the bud with the stock. We feel it almost impossible to give instruction to be understood, in words only, for such a complex operation. We have, therefore, given the preceding woodcuts, to show all the several parts of this interesting process.

Buddle'ia. (Named after *A. Buddle*, an English botanist. Nat. ord., *Loganiaceæ*.)

Stove evergreen shrubs, except where otherwise specified. *B. globosa*, a 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 hand-lights, 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. americana*. 10. Yellow. August. Mexico. 1826. Syn., *B. occidentalis*.
- asiatica*. 3. White. E. Indies. 1874. Half-hardy. B. M. t. 6323.
- auriculata*. Cream colour. Greenhouse shrub. G. C. 16 (1881), p. 633. S. Africa.
- braziliensis*. 10. Orange. Brazil. 1822. B. M. t. 2713.
- carnea*. Lilac. Rev. Hort. 1879, p. 90.
- connata*. 5. Orange. May. Peru. 1826. B. M. t. 2853.
- crispata*. 13. Purple. March. Himalaya. B. M. t. 4793.
- curvispora*. Rosy-violet. Loo Choo Islands. 1870. Hardy.
- diversifolia*. 6. Java. 1823.
- globosa*. 15. Orange. May. Chili. 1774. Hardy herbaceous. B. M. t. 174.
- heterophylla*. See *B. madagascariensis*.
- insignis*. Purple. 1878. Rev. Hort. 1878, p. 330.
- intermedia*. Purple with white centre. Rev. Hort. 1873, p. 150.
- Lindleyana*. 6. Violet. September. China. 1844. Greenhouse evergreen. B. R. 32, t. 4.
- madagascariensis*. 10. Orange. Madagascar. 1824. B. M. t. 2824. Syn., *B. heterophylla*.
- Nee'nda*. 15. White. June. Nepal. 1824.
- occidentalis*. See *B. americana*.
- paniculata*. 14. White. August. Nepal. 1823.
- reflexa*. A dwarf plant with prostrate branches. Rev. Hort. 1879, p. 90.
- salicifolia*. Jacq. H. Schœnh. t. 29. See *Chilianthus*.
- saligna*. See *Chilianthus arboreus*.

B. salicifolia. 3. Crimson. August. Cape of Good Hope. 1760. Greenhouse evergreen.

— *thyrsoides*. Yellow. S. Amer. 1823.

Buettne'ria. (Named after *Buettner*, a German Professor. Nat. ord., *Sterculiaceæ*.)

Erect or trailing. Stove shrubs, cuttings under a bell-glass, fibry loam.

B. dasyphylla. See *Rulingia pannosa*. B. M. t. 2191.

— *Hermanniaefolia*. See *Rulingia Hermanniaefolia*.

— *microphylla*. 5. White, purple. S. Amer. 1816.

— *scabra*. 6. Purple. July. W. Ind. 1793.

Bugle. *A'juga reptans*.

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 elaborated sap, and retaining the vital powers of the plant, ready for reproduction at the appropriate season. Besides root bulbs (as are the onion, etc.), 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, inclosing the rudiments of a future plant, and originating, sometimes in the axil of the leaves, as in *Dentaria bulbifera* and several Lilyworts, and sometimes at the base of the umbel of flowers, as in *Allium carinatum* 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 early autumn, and to the autumn-flowering in spring. Many require to be taken up annually, or, at farthest, 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 stored in a dry well ventilated room or shed.

Bulbine. (From *bolbos*, a bulb. Nat. ord., *Liliaceæ*; Tribe, *Asphodeleæ*.)

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

- B. alooi*'des. 1. Yellow. June. Cape of Good Hope 1732. Syn., *Anthericum alooides*, B. M. t. 1317.
- *a'nnua*. $\frac{1}{2}$. Yellow. May. Cape of Good Hope. 1731. Syn., *Anthericum annuum*. B. M. t. 1451.
- *asphodeloi*'des. 2. White. July. Cape of Good Hope. 1759. Syn., *Anthericum asphodeloides*, Jacq. Vind. t. 181, and *Bulbine graminea*.
- *australi*s. See *Bulbine bulbosa*.
- *bisulca*'ta. 1. Yellow. November. Cape of Good Hope. 1823.
- *bulbo*'sa. 1. Yellow. June. Australia. 1820. Syn., *Bulbine australis* and *suavis*, *Anthericum bulbosum*, B. M. t. 3017, and *A. semibarbatum*, B. M. t. 3129.
- *caule*'scens. 2. Yellow. June. Cape of Good Hope. 1702. B. M. t. 816. Syn., *B. frutescens*.
- *cilia*'ta. See *Anthericum ciliatum*.
- *floribu*'nda. See *B. semibarbata*.
- *frute*'scens. See *B. caulescens*.
- *glau*'ca. 2. White. Bolivia and Peru. 1828. Syn., *Anthericum glaucum*, B. M. t. 3610.
- *grami*'nea. See *B. asphodeloides*.
- *hi*'spida. See *Anthericum hispidum*.
- *latifo*'lia. 2. White. July. Cape of Good Hope. 1812. Syn., *Anthericum latifolium*, Jacq. Ic. t. 408.
- *longisca*'pa. 1. Yellow. June. Cape of Good Hope. 1759. Syn., *Anthericum altissimum* Mill. and *A. longiscapum*, B. M. t. 1339.
- *Macke*'ni. 1. Yellow. July. Natal. 1870.
- *mesembryanthoi*'des. $\frac{1}{2}$. Yellow. May. Cape of Good Hope. 1822.
- *narcissifo*'lia. $\frac{1}{2}$. Yellow. Cape of Good Hope.
- *nu*'tans. 1. Yellow. July. Cape of Good Hope. 1820. Syn., *Anthericum nutans*, Jacq. Ic. t. 407.
- *præmo*'rsa. 1. Yellow. June. Cape of Good Hope. 1818. Syn., *Anthericum præmorsum*, Jacq. Ic. t. 406.
- *pugioni*'formis. 1. Yellow. May. Cape of Good Hope. 1793. Syn., *Anthericum pugioniformis*, B. M. t. 1454.
- *rostra*'ta. 2. Yellow. June. Cape of Good Hope. 1812. Syn., *Anthericum rostratum*, Jacq. Ic. t. 403.
- *scabra*. See *Anthericum scabrum*.
- *semibarba*'ta. 1. Yellow. July. Cape of Good Hope. 1820. Syn., *B. floribunda* and *Anthericum semibarbatum*, B. C. t. 300, not B. M. t. 3129.
- *sua*'vis. See *B. bulbosa*.
- *trique*'tra. See *Anthericum triquetrum*.

Bulbocodium. (From *bolbos*, a bulb, and *kodion*, wool; referring to the woolly covering of the bulbs. Nat. ord., *Liliaceæ*; Tribe, *Colchicæe*.)

Small hardy bulbs, having the aspect of *Crocus*. Offsets; sandy loam, well drained.

- B. Aitchisoi*'ni. See *Merendria persica*.
- *Eichle*'ri. Gf. 952. See *Merendria caucasicæ*, var. *Eichleri*.
- *trigyn*'um. See *Merendria caucasicæ*.
- *vernum*. $\frac{1}{2}$. Purple. February. Spain. 1629. B. M. t. 153.
- *versicolor*. $\frac{1}{2}$. Purple. August. Crimea. 1820. B. R. t. 571.

Bulbophyllum. (From *bolbos*, a bulb, and *phyllon*, a leaf; referring to

the leaves issuing from the apex of the pseudo bulbs, as in our figure. Nat. ord., *Orchidææ*; Tribe, *Epidendrææ*.)

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. Few of the species are worth growing.



- B. adenopetalum*. Yellowish. Sweet scented. Singapore.
- *alopecu*'ram. Burmah. 1880.
- *amplebractea*'tum. Buitenzorg. 1866.
- *angustifo*'lium. Java. 1866.
- *auranti*'acum. Australia. 1870.
- *aurif*'comum. India. 1866.
- *bala*'nceps. Philippines? 1863.
- *barbi*'gerum. $\frac{1}{2}$. Greenish-brown. June. Sierra Leone. 1835. B. R. t. 1942.
- *Becca*'rii. Brown, violet. Borneo. 1875. A remarkable and gigantic climbing species, with leaves 2 ft. by 1 to 1½ ft., and very thick. B. M. t. 6517.
- *Bereni*'cis. 1880.
- *bifo*'rum. Java. 1866.
- *blephari*'stes. Yellow. Burmah. 1872.
- *Bowringia*'num. White, green, spotted sepia-brown. Assam. 1881.
- *bractea*'tum. 1. Yellow, purple. July. Demerara. 1836. B. R. t. 4088, t. 57.
- *calama*'ria. $\frac{1}{2}$. Yellow, dull purple. Sierra Leone. 1844. B. M. t. 4088.
- *caespito*'sum. Bourbon. 1858.
- *capit*'lipes. Moulmein. 1872.
- *capita*'tum. Java. 1866.
- *Careya*'num. $\frac{1}{2}$. Brown, purple. October. Nepal. 1832. B. M. t. 4166.
- *ce*'rnuum. Purplish. Java. 1866.
- *chei*'ri. Manila.
- *chloroglo*'ssum. Whitish, or rosy, lip green. Brazil. 1871.
- *cilia*'tum. Java. 1866.
- *clande*'stinum. Singapore.

- B. cocoïnum*. 1. Flesh. October. Sierra Leone. 1835. B. R. t. 1864.
 — *compre'ssum*. Sumatra. 1866.
 — *cro'ceum*. Java. 1866.
 — *cu'preum*. Copper-colour. Manilla. 1837. B. M. t. 5316.
 — — *fla'vum*. Yellow.
 — *Daya'nun*. Green, yellow, purple. Burmah. 1865.
 — *Dea'ret*. 1833. Syn., *Sarcopodium Dearei*.
 — *ere'ctum*. Mauritius. 1834.
 — *flave'scens*. Java. 1866.
 — *fla'vidum*. Yellow. March. Sierra Leone. 1840.
 — *fu'scum*. Chocolate. April. Sierra Leone. 1837.
 — *gibbo'sum*. Java. 1866.
 — *gra'cile*. †. Green, brown. July. Moulmein. 1874.
 — *grandiflorum*. Pale yellowish green. New Guinea. 1866. Flowers 8 inches in diameter.
 — *herminiosa'chys*. Sierra Leone.
 — *hi'rtum*. Whitish. E. Ind. 1846.
 — *imbria'tum*. Purple. March. Sierra Leone. 1845.
 — *ina'equale*. Orange, nerved with purple, lip dark purple. Java. 1866.
 — *in'ers*. White. Assam. 1880.
 — *in'd'ps*. Greenish, purple. 1880.
 — *java'nium*. Java. 1866.
 — *khasya'num*. Ochre, brown. Khasia Hills. 1878.
 — *lasia'nthum*. †. Purple. Sumatra. 1855.
 — *lemnisa'tum*. †. Purple, green. Moulmein. 1872. B. M. t. 5961.
 — *leopardi'num*. Yellowish-green. E. Ind. 1837.
 — *limba'tum*. 1. Purple. February. Singapore. 1840.
 — *Lo'bbii*. 1. Yellow, brown. March. Java. 1845.
 — — *siam'e'nse*. Yellowish, purple. Siam. 1867. Ref. Bot. t. 116.
 — *macra'nthum*. †. Lemon. March. Sierra Leone. 1844. B. R. 1844, t. 13.
 — *macula'tum*. India.
 — *mandibula're*. Brown, light green, purple, white. N. Borneo. 1882.
 — *membrana'ceum*. Java. 1866.
 — *mucrona'tum*. Pale yellow. Java. 1866.
 — *nasu'tum*. Sulphur, purple, orange. 1871.
 — *neilgherre'nse*. †. Green, brown. January. Neilgherries. 1849. B. M. t. 5050.
 — *ocula'tum*. Java. 1866.
 — *occu'tum*. Sierra Leone.
 — *odora'tum*. Java. 1866.
 — *oligoglo'ssum*. Yellowish, white. Burmah. 1865.
 — *oxy'don*. See *Megaclinium oxydon*.
 — *Pahu'di*. See *Cirrhopetalum*.
 — *palea'ceum*. †. Yellowish green, purple-brown. Autumn. Assam. 1877. Syn., *Ione paleacea*.
 — *pa'rulium*. Orange. Java. 1866.
 — *pavimenta'tum*. Deep red. Tropical Africa. 1862. B. M. t. 5329.
 — *pilea'tum*. Ochre yellow. Singapore.
 — *pi'pio*. W. Tropical Africa. 1877. Xenia, vol. 3, p. 45, t. 219, f. 7-13.
 — *psittacoglo'ssum*. Yellow, purple. Moulmein.
 — *psycho'on*. Green. Assam. 1878.
 — *radia'tum*. Brownish-yellow. March. India. 1836.
 — *recu'rurum*. Green, white. September. Sierra Leone. 1822. Syn., *Tribrachia pendula*, B. R. t. 963.
 — *reticula'tum*. Cream, purple. Borneo. 1866. B. M. t. 5605.
 — *retusini'sculum*. Moulmein. 1869.
 — *rhizo'phoræ*. Purplish. Tropical Africa. 1862. B. M. t. 5309.
 — *ri'ngens*. Burmah? 1865.

- B. rufi'num*. India. 1881.
 — *saltato'rurum*. †. Greenish-brown. December. Sierra Leone. 1835. B. R. t. 1970.
 — *seti'gerum*. Purple. December.
 — *siam'e'nse*. See *B. Lobbiï*, var. *siamense*.
 — *Sillemia'num*. Orange, mauve, whitish. Burmah. 1884.
 — *Shepher'di*. Australia. 1860.
 — *so'rdidum*. Olive-brown, mottled with bright purple inside. Guatemala.
 — *sulca'tum*. Java. 1866.
 — *tene'llum*. Light orange, lip dark purple. Java. 1866.
 — *tenuifo'tum*. Java. 1866.
 — *tetra'gonum*. Sierra Leone.
 — *tri'ste*. 1. Greenish, purple. Khasia. 1864. Ref. Bot. t. 117.
 — *umbella'tum*. †. Yellow, spotted with red, lip red or purple. E. Ind. 1837.
 — — *Bergema'nii*. Gfl. t. 244.
 — *vagina'tum*. Brown. March. Singapore. 1840.
 — *vitta'tum*. Java. 1863.

Bulbo'styles. (From *bolbos*, a bulb, and *stylos*, the style. Nat. ord., *Compositæ*; Tribe, *Eupatoriaceæ*.) See **Brickellia**.

Buli'mus Gooda'llii. This is a small snail, with a narrow-conical spiral shell, about half an inch long, that was accidentally imported from the West Indies, and has now got spread into many stoves, sometimes proving very troublesome and destructive. It is nocturnal in its habits, and should be sought for at night and destroyed; the earth in the vicinity of its haunts should also be changed.

Bullace-tree. *Prunus insiti'tia*.

Bull Grapes. *Vitis rotundifolia*.

Buncho'sia. (From *bunchos*, coffee; the seeds resembling coffee-berries. Nat. ord., *Malpighiaceæ*.)

Stove shrub and tree; cuttings of ripe shoots under a glass, in moist bottom-heat; sandy loam and peat.

- B. arge'nsea*. 10. Yellow. July. Caraccas. 1810.
 — *cane'scens*. 20. Yellow. July. W. Ind. 1742.
 — *elli'ptica*. Yellow. 1877.
 — *glandulo'sa*. 10. Yellow. April. Dominica. 1806.
 — *ni'tida*. 10. Red. July. St. Domingo. 1800. Syns., *Malpighia media*, and *M. poly-stachya*, Andr. Rep. t. 604.
 — *odora'ta*. 10. Yellow. July. Carthagen. 1806.
 — *panicula'ta*. See *Triopteris ovata*.

Bupha'ne. (From *bous*, an ox, and *phone*, slaughter; the bulbs when eaten by cattle are said to be fatal to them. Nat. ord., *Amarylloideæ*; Tribe, *Amaryllece*.)

For culture, see BRUNSVIGIA.

- B. cilia'ris*. †. Dull purple. Cape Colony. 1795. Syns., *Brunsvigia ciliaris*, B. R. t. 1153; *Crossyne ciliaris*.
 — — *gutta'ta*. Leaves narrower.
 — *di'sticha*. †. Cape Colony. Syns., *Brunsvigia disticha*, and *B. toxicaria*, B. R. t. 567; *Hæmanthus toxicarius*, B. M. t. 1217.

Buphtha'lum. Ox-eye. (From *bous*, an ox, and *ophthalmos*, eye; the disk of the flower ox-eye-like. Nat. ord., *Compositæ*; Tribe, *Inuloideæ*.)

Showy perennials; division in March; ordinary garden-soil.

HARDY.

- B. aquat'icum.* See *Odontospermum*.
- *cordifo'lum.* 4. Yellow. July. Croatian and Bannatian Mts. 1739. Syn., *Telekia spectosa*, B. M. t. 3466.
- *grandifo'lum.* 1½. Yellow. August. Austria. 1722. Herbaceous perennial.
- *salicifo'lum.* 1½. Yellow. September. Austria. 1759. Herbaceous perennial.
- *speciosissimum.* 2. Yellow. July. South Europe. 1826. Herbaceous perennial.
- *spino'sum.* See *Pallenis spinosa*, Sibth. Fl. Gr. t. 898.

GREENHOUSE.

- B. lævigat'um.* See *Jasonia lævigata*.
- *maritimum.* See *Odontospermum*.
- *sericeum.* See *Odontospermum*.
- *stenophyllum.* See *Odontospermum*.

Bupleu'rum. Hare's-Ear. (From *bous*, an ox, and *pleuron*, a side; the leaves, if eaten, are supposed to swell cattle. But this derivation is very doubtful. Nat. ord., *Umbelliferae*. Tribe, *Ammineæ*.)

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; dry, sandy loam.

HARDY ANNUALS.

- B. glaucum.* ½. Green, yellow. July. South Europe. 1819.
- *gracile.* ¼. Green, yellow. July. Caucasus. 1820.
- *heterophyllum.* 1. Green, yellow. July. Tauria. 1820. Biennial. Syn., *B. lanceifolium*.
- *ju'nceum.* 1. Green, yellow. July. South Europe. 1772. Syn., *B. Gerardi*, Sibth. Fl. Gr. t. 262.
- *odontites.* Yellow. July to October. Austria. Jacq. Vind. 3, t. 91.
- *oppositifo'lum.* 1. Green, yellow. July. Pyrenees. 1819.
- *Pollichii.* See *B. tenuissimum*.
- *protractum.* ¾. Yellowish. July. Portugal. 1824. Twiner. Syn., *B. subovatum*.
- *rotundi'folium.* 2. Green yellow. June. Britain. Eng. Bot. ed. 3, t. 589.
- *semi-compositum.* ¾. Green, yellow. July. Spain. 1778.
- *subvatum.* See *B. protractum*.
- *tenuissimum.* ½. Green, yellow. July. England. Eng. Bot. ed. 3, t. 591. Syn., *B. Pollichii*.
- *trifidum.* 2½. Yellow. July. Italy. 1824. Biennial.

HARDY PERENNIALS.

- B. aristat'um.* Pale yellow. June. Britain. Eng. Bot. ed. 3, t. 590.
- *aurum.* 1. Yellow. May. Siberia. 1820.
- *coriacum.* See *B. gibraltarcum*.
- *falcat'um.* ¾. Green, yellow. August. Germany. 1739.
- *frutescens.* 2. Yellow. August. Spain. 1752.
- *graminifolium.* ¾. Green, yellow. June. Switzerland. 1768. Jacq. Ic. t. 56. Syn., *B. petraeum*.

- B. longifo'lum.* 3. Green, yellow. June. Switzerland. 1713.
- *multine'vve.* 3. Yellowish. Altai.
- *paniculat'um.* 1½. Yellow. July. Spain. 1824.
- *petraeum.* See *B. graminifolium*.
- *polyphyllum.* 1. Green. Yellow. May. Caucasus. 1823.
- *scorzoneræfo'lum.* Yellow-streaked. June. Germany. 1818.
- *spino'sum.* Yellow. July. Spain. 1752. Evergreen shrub.

GREENHOUSE.

- B. canescens.* 5. Yellow. August. Barbary. 1809. Evergreen shrub.
- *fruticosum.* 3. Yellow. July. South Europe. 1596. Evergreen half-hardy.
- *gibraltarcum.* Yellow. June. Gibraltar. 1784. Evergreen half-hardy. Syn., *B. arborescens*, Jacq. Ic. t. 351, and *B. coriaceum*.
- *plantagineum.* 3. Yellow. July. Mount Atlas. 1810. Evergreen half-hardy.

Burbi'dgea. (Named in honour of *Mr. F. W. Burbidge*, a traveller in *N. W. Borneo*, and author. Nat. ord., *Scitamineæ*; Tribe, *Zingiberaceæ*. Allied to *Hedychium*.)

Stove herbaceous perennial, readily increased by divisions of the rootstock. Light sandy loam, leaf-mould, and a little fibry peat, well drained; moist atmosphere and shade. Only one species of the genus is known; the flowers are large, very brilliant, and freely produced.

- B. nitida.* 2 to 4. Orange-scarlet. Summer. *N. W. Borneo*. 1872. B. M. t. 6403.

Burcha'rdia. (Named after *H. Burchard*, *M.D.* Nat. ord., *Liliaceæ*; Tribe, *Anguillariceæ*. Allied to *Veratrum*.)

Greenhouse herbaceous perennial; offsets and divisions; sandy peat.

- B. umbellata.* 2. White, green. August. Australia. 1820.

Burche'llia. (Named after *Burchell*, an African traveller. Nat. ord., *Rubiaceæ*. Allied to *Gardenia*.)

Stove evergreen shrubs, from Cape of Good Hope. Cuttings of young shoots, getting firm at the base, in April and May; fibry loam and sandy peat.

- B. cape'nsis.* 12. Scarlet. March.
- *parviflora.* 3. Scarlet. 1818. B. M. t. 2339. Syn., *B. bubalina*, and *B. parviflora*. B. R. t. 891.

Burlingto'nia. See *Rodriguezia*.

Burn Onion. See *Potato Onion*.

Burnet. (*Poterium sanguisorba*.) 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 brick rubbish, or fragments of chalk. A small bed will be sufficient for the supply of a family.

Propagation is either by seed or by slips and partings of the roots. The seed sown towards the close of February, if open weather, and until the close of

May. 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 place those removed 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 americana*.

Burrielia gracilis. See **Bæria gracilis**.

Bursa'ria. (Named from *bursa*, a pouch. Nat. ord., *Pittosporaceæ*.)

Greenhouse evergreen shrub. Cuttings of young shoots in sand, under a bell-glass; sandy peat and fibry loam.

B. spinosa. 10. White. October. N. S. Wales. 1793. B. M. t. 1767.

Bursera. (Named after *Burser*, an Italian botanist. Nat. ord., *Bursaceæ*.)

Stove trees; cuttings under a glass, with bottom-heat; loam and peat.

B. gummi'fera. 20. White, green. W. Ind. 1690.
— *serrata*. 30. Whitish. E. Ind. 1818.

Burtonia. (Named after *D. Burton*, a collector for the Kew Gardens. Nat. ord., *Leguminosæ*; Tribe, *Podalyriæ*. Allied to *Pultenæa*.)

Greenhouse evergreen under-shrubs; seeds in March and April, in sandy peat; cuttings of half-ripened shoots in sand, under a bell-glass; fibry peat, sandy loam, and pieces of charcoal, mixed with soil and drainage.

B. Brunioi'des. 1½. Yellow. June. N. Holland. 1844.
— *conferta*. 2. Violet. July. N. Holland. 1830. B. R. t. 1600.
— *minor*. See *Gompholobium minus*.

B. sca'bra. 1. Yellow. June. N. Holland. 1803. Syns. *B. pulchella*, B. M. t. 4392, and *B. sessiliflora*.
— *villo'sa*. 2. Purple. May. Swan River 1844. B. M. t. 4410.

Bushel. See **Basket**.

Butcher's Broom. *Ruscus aculeatus*.

Butea. (Named after *John, Earl of Bute*. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. 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 tilted to admit of air being given, during the night; loam and peat

B. frondo'sa. 30. Scarlet. E. Ind. 1796. Bedd. Fl. Syl. t. 176.

— *parviflora*. See *Spatholobus Roxburghii*.

— *superba*. 30. Scarlet. E. Ind. 1798.

Butomopsis. (From *Butomus*, and *opsis*, like. Nat. ord., *Alismaceæ*; Tribe, *Butomeæ*.)

B. lanceolata. 1. White. June. Nepaul. 1823. Syn., *Butomus latifolius*.

Butomus. Flowering Rush. (From *bous*, an ox, and *temno*, to cut; in reference to its acid juice, causing the mouth to bleed. Nat. ord., *Alismaceæ*; Tribe, *Butomeæ*.)

Hardy perennial aquatic; divisions; rich loam in water.

B. latifolius. See *Butomopsis lanceolata*.

— *umbellatus*. 2. Pink. June. Britain. Eng. Bot. ed. 3, t. 1443.

Butter-bur. *Petasites vulgaris*.

Buttercup. *Ranunculus*.

Butter Nut. *Caryocarpus and Juglans cinerea*.

Butter and Eggs. *Narcissus incomparabilis*, var. *aureantia*.

Butter and Tallow Tree. *Pentadema*.

Butter-tree. *Bassia*.

Butterfly Plant. *Oncidium papilio*.

Butterwort. *Pinguicula*.

Button Flower. *Gomphia*.

Button Tree. *Conocarpus*.

Button Weed. *Spermacoce*.

Button Wood. *Cephalanthus*.

Buxus. Box-tree. (From *pyknos*, dense; referring to the hardness of the wood. Nat. ord., *Euphorbiaceæ*.)

Hardy evergreen 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 *suffruticosa*, generally used as edgings to walks; cuttings of *balearia* will require protection in winter. The New Holland species requires a cold pit or greenhouse in winter.

- B. australis*. 6. N. Holland. 1820.
 — *balea'rica*. 8. Yellow, grain. July. Minorca. 1780.
 — *chine'nsis*. See *Simmondsia californica*.
 — *Fortu'nei*. Green. Spring. China. 1871.
 — *longifo'lio*. Green. Spring. Nepaul. 1871.
 — *sempervi'rens*. 8. Yellow, green. April. England. Eng. Bot. ed. 3, t. 1252.
 — — *angustifo'lia*. 8. Yellow, green. April.
 — — *arbo're'scens*. 30. Yellow, green. May. Britain.
 — — *arg'e'ntea*. 30. Yellow, green. May. Britain.
 — — *au'rea*. 20. Yellow, green. May. Britain.
 — — *margina'ta*. 30. Yellow, green. April. Britain.
 — — *myrtifo'lia*. 8. Yellow, green. April. Britain.
 — — *obcorda'ta-variega'ta*. Green. Japan. 1861.
 — — *suffrutico'sa*. 1. Yellow, green.
 — — *variega'ta*. 30. Yellow, green. May. Britain.

By'blis. (A classical name, after *Byblis*, daughter of Miletus. Nat. ord., *Droseraceæ*.)

Greenhouse aquatic; seeds; fibry-black peat, immersed in water.

- B. tinifo'ra*. ½. Blue. May. N. Holland. 1800. Salis. Parad. t. 95.

Byrs'o'nima. (From *byrsa*, a hide; in reference to the tanning properties of the genus. Nat. ord., *Malpighiaceæ*.)

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, and in a moist bottom-heat; loam and peat.

- B. alti'ssima*. 60. White. July. Guiana. 1820.
 — *chryso'phy'lla*. 10. Yellow. August. Orinoco. 1823.
 — *coria'cea*. 30. White. June. Jamaica. 1814.
 — *crassifo'lia*. 20. Yellow. July. Guiana. 1793.
 — *lauro'ly'lia*. 10. Yellow. July. Cumana. 1824.
 — *lu'cida*. 6. Pink. July. W. Ind. 1759.
 — *Mouret'la*. 20. Yellow. August. S. Amer. 1823.
 — *nerv'o'sa*. 8. Yellow. July. Brazil. 1820.
 — *pa'llida*. 4. Pale. Cayenne. 1820.
 — *reticula'ta*. See *Heteropterys platyptera*.
 — *spica'ta*. 6. Yellow. August. Antilles. 1810.
 — *verbascifo'lia*. 6. Pale red. July. Guiana. 1810.
 — *vol'u'bilis*. See *Hircea Simsiana*.

Bystro'pogon. (From *byo*, to close, and *pogon*, a beard; in reference to the throat of the flower being closed up with hairs. Nat. ord., *Labiatae*; Tribe, *Satureineæ*. Allied to Thyme.)

Greenhouse evergreen under-shrub; cuttings of stubby side-shoots in sandy soil, under a glass; peat and loam.

- B. canarie'nsis*. 1½. Pale purple. July. Canaries. 1714.
 — *organifo'lius*. 1½. Pale purple. July. Canaries. 1815.
 — *plumo'sus*. 1½. Pale purple. June. Canaries. 1779.
 — *puncta'tus*. 1½. Pale purple. June. Madeira. 1775.

C.

Cabaret. See *A'sarum*.

Cabbage. Nearly all the varieties of this delicious vegetable have been derived from *Bra'ssica olera'cea*, a native of the rocky parts of the sea-shores of England and Scotland, and which is said to possess in its wild state a most nauseous taste. It will grow in almost any soil, but prefers a light stony one, made rich with stable manure. Seeds should be sown broadcast from the beginning of July to the middle of August. When the plants have attained a sufficient size, plant them out about a foot apart, in rows fifteen inches from each other, where they will remain until ready for cutting the following spring. When the heads are cut, remove the lower leaves as well, the lateral buds will then develop into *sprouts* ready for use the following winter. To obtain a succession, seeds may also be sown in February, in a slight hotbed.

To obtain seeds, select some of the strongest plants, and remove their lower leaves to allow the nourishment to be concentrated on the terminal inflorescence.

The best sorts of White Cabbage to grow are:—Atkins' Matchless, Carter's Heartwell, Defiance, Enfield Market, Early Battersea, Early Dwarf York, Early Rainham, Ellam's Early Dwarf, Hill's Dwarf, Little Pixie, Oxheart, St. John's Day, Sugar-loaf, Wheeler's Cocoa-nut and Imperial, and Portugal or Couve Tronchuda.

The Red Dutch Cabbage, which should be sown in August or February, is the best for pickling purposes.

See also **Savoy**.

Cabbage diseases. The disease that affects the roots of Cabbages, Turnips, etc., which takes the form of tubercles and swollen distorted growths, and is known under the several terms of **AM-BURY, CLUBBING, CLUB-ROOT, FINGERS AND TOES**, etc., seems to be due to more than one cause, or at least is the result of two combined causes.

It would appear that in some instances the so-called disease is but a greater or lesser tendency to revert to the wild form of root. In other cases it is a true disease caused by a fungus; whilst in others still it appears to be due to the attacks of the larva of a weevil (*Ceutorhynchus sulcicollis*), as described below; although Mr. Woronin, who has carefully studied the disease, maintains that

the weevil is not the cause of the disease, but is merely an accessory to it. However this may be, whether the weevil does or does not actually produce one form of the disease, it is certain that the fungus, which was discovered and named *Plasmiodiophora brassicæ* by Mr. Woronin, if not the only real cause of the disease, as maintained by that gentleman, is one of the chief causes of it, and it may be that Mr. Woronin is right, and that the weevil larva does not attack healthy roots and produce the disease, but only those affected by the fungus, in which case it is probable that it feeds upon the fungus and is therefore of some benefit in checking the ravages of the fungus. This is an important question that requires to be cleared up. We shall here confine ourselves to the fungus, as an account of the weevil has already been given as above quoted.

The *Plasmiodiophora* is a member of that remarkable group of plants, the *Myxomycetes*, which completely unite in themselves the Animal and Vegetable Kingdoms in their lowest phases; since they have during a portion of their life a purely animal existence, and during another portion of it a purely vegetable existence.

The *Plasmiodiophora* commences its existence as a spore, which in water or moist earth gives birth to a minute jelly-like body endowed with life, called a myxamœba, which is capable of moving about and assuming various forms, but never encases itself in a cell wall. The myxamœba enters the roots of the Cabbage, Turnip, and other Cruciferous plants, and passes from cell to cell, consuming their contents, and causes great irritation and consequent swelling of the tissues it comes in contact with, thus producing the "clubbing." After a time the plasmodium (as the body of the fungus is termed when inside the tissues of the root) breaks up into a multitude of exceedingly minute spores, which in their turn develop into myxamœba, plasmodia, and spores again, and so increase and perpetuate the disease.

If sections of roots in the very earliest stages of disease be examined under a microscope, the cells attacked by the fungus will be seen to be larger than those not attacked, and filled with an opaque granular substance; in later stages of the disease, this substance will be found to have increased in size, and some of the cells of the diseased plant will be found to contain some minute globular colourless bodies; these bodies

are the spores, and the granular substance is the body, or plasmodium, of the *Plasmiodiophora*. Such is the curious life history of this insignificant but terrible enemy to our Cabbages, Turnips, etc.

Young seedling Cabbage plants, bearing only their seed leaves, or one or two stemleaves, are often attacked by another kind of fungus, which causes them to decay at about ground level, and very soon to perish. This fungus (*Chytridium brassicæ*) consists of a minute globular bladder with a slender neck; the bladder part is buried in the tissue of the young Cabbage stem, below the seed leaves, and the neck, which is longer or shorter according to the depth at which the bladder part is seated in the tissue, penetrates through the epidermis to the outside of the Cabbage stem. The *Chytridium* reproduces itself by zoospores, which are very minute globose bodies, furnished with a single whip-like cilium, or hair, by the lashing of which they are enabled to move about. The zoospores are either ejected through the neck of the *Chytridium* on to the outside of the young Cabbage stem, or the globular portion breaks up and the zoospores swarm in the interior tissues. It also propagates itself by resting spores.

As remedies against clubbing several plans have been tried, of which the following two have been much recommended:

1. Mix soot with a rather smaller quantity of sifted earth, into a rather thin paste with water, and dip the seedling plants in the mixture up to the base of the leaves before planting. Some who have tried this remedy consider it to be very effectual.

2. Mix some of the Gishurst compound and Pooley's tobacco-powder in a pail of water, adding a little stiff loam to give it consistence, and well puddle the roots with it before planting, after which give the plants another good watering, especially round the collar.

To both the above mixtures we think a little powdered phosphate of lime might be added with advantage. Wood ashes are also said to form a good application.

In transplanting Cabbages from the seed bed, any that show the least signs of disease should be burnt, as this will be an effectual means of preventing the spread of the disease from that source. In the way of experiment we would suggest the following as worthy of a trial. In the winter, or at any other time when the ground upon which it is

intended to plant Cabbages is empty of crop and dry, dig in and well mix with the soil some *unslaked* lime, and then well water. This would in all probability burn and destroy any fungus spores and insect eggs that may be contained in the earth, but the ground must not be planted until the destructive powers of the lime have abated. The quantity of lime to be employed must be regulated by the nature of the soil, and the experience and judgment of the gardener.

Another experiment that might be tried, would be to water the ground, when there is no crop upon it, with dilute sulphuric acid, as mentioned by us under **Potato Disease** for this acid is very destructive to fungi, and it is evident that to cope with the disease effectually it must be dealt with when in the spore condition.

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. This wart contains a small white maggot, the larva of a little insect called the weevil. If on the gall and its tenant being removed, the plant is again placed in the earth, where it is to remain, unless it is again attacked, the wound usually heals, and the growth is little retarded. On the other hand, if the gall is left undisturbed, the maggot continues to feed upon the albumen, or young woody part of the stem, until the period arrives for its passing into the other insect form, previously to which it gnaws its way out through the exterior bark. The disease is now almost beyond the power of remedies. The gall, increased in size, encircles the whole stem; the albumen being so extensively destroyed, prevents the sap ascending; consequently, in dry weather, sufficient moisture is not supplied from the roots to counterbalance the transpiration of the leaves, and the diseased plant is very discernible among its healthy companions by its pallid hue and flagging foliage. The disease now makes rapid progress, the swelling continues to increase, for the roots continue to afford their juices faster than they can be conveyed away; moisture and air are admitted to the interior of the excrescence, through the perforation made by the maggot; the wounded vessels ulcerate, putrefaction supervenes, and death concludes the stunted existence of the miserable plant. The tumour usually attains the size of a large hen's egg, has a rugged, ulcerated, and even mouldy surface, smelling strong and offensively. The

fibrous roots, besides being generally thickened, are distorted and monstrous from swellings which appear throughout their length, apparently arising from an effort of nature to form receptacles for the sap. These swellings do not seem to arise immediately from the attacks of the weevil. When it attacks the turnip, a large excrescence appears below the bulb, growing to the size of both hands, and, as soon as the winter sets in, it is, by its own nature, brought to maturity, becoming putrid, and smelling very offensively. The parent weevil is of a dusky-black colour, with the breast spotted with white, and the length of the body one line and two-thirds. The ambury of the turnip and cabbage usually attacks these crops when grown for successive years on the same soil. This is precisely what might be expected; for, where the parent insect always deposits her eggs, some of these embryo ravages are to be expected. The ambury is most frequently observed in dry seasons. This is also what might be anticipated; for insects that inhabit the earth just beneath its surface, are always restricted and checked in their movements by its abounding in moisture. Moreover, the plants actually affected by the ambury are more able to contend against the injury inflicted by the larva of the weevil by the same copious supply.

Anthomyia brassicæ, 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 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 leaden or yellow colour, and droop in midday from the effects 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. brassicæ* 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.—*Gardener's Chronicle*.

Cabbage Butterfly. See *Pieris*.

Cabbage - Garden Pebble - Moth. *Pyralis*.

Cabbage Moth. *Mamestra*.

Cabbage Powdered-wing. See *Aleyrodes proletella*.

Cabbage Tree. *Andira inermis*.

Cabo'mba. (Native name. Nat. ord., *Nymphæaceæ*.)

A small water-plant, with floating shield-like leaves, and small yellow flowers, which look, at a distance, like so many Crowfoot-flowers. An 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 it well.

C. aquatica. Yellow. May. Guiana. 1823.

Caca'lia. (From *kakos*, pernicious, and *lian*, exceedingly; supposed to be hurtful to the soil. Nat. ord., *Compositæ*.)

Propagated by division of the root, when tuberos. Also by cuttings in sandy soil; sandy loam, fibry peat, equal parts; lime rubbish and very rotten cow-dung, equal parts of each.

C. alpina. See *Adenostylis glabra*.

— *articulata*. See *Kleinia articulata*.

— *atriplexifolia*. 3 to 6. White. August. United States.

— *bicolor*. See *Gynura bicolor*, B. R. t. 110.

— *carinosa*. See *Kleinia carinosa*.

— *coccinea*. B. M. t. 564. See *Emilia sagittata*.

— *cordifolia*. 1. White. August. Mexico. 1823. Hardy tuberos-rooted.

— *cylin'drica*. See *Othonna cylin'drica*.

— *hastata*. 1. White. September. Siberia. 1780.

— *Haworthii*. See *Kleinia Haworthii*.

— *Kleinia*. See *Kleinia nerifolia*.

— *longifolia*. See *Kleinia pugioniformis*.

— *ovatis*. See *Gynura ovalis*.

— *papillaris*. See *Kleinia papillaris*.

— *pugioniformis*. See *Kleinia pugioniformis*.

— *radicans*. See *Kleinia radicans*.

— *reniformis*. 1½. White. July. N. America. 1752.

— *reticulata*. 2. Yellow. Bourbon. 1823.

— *scandens*. See *Senecio volubilis*.

— *suaveolens*. 6. White. August. N. America. 1752.

— *tuberosa*. 1. August. N. America. 1812. Hardy tuberos-rooted.

Cacci'nia. (Nat. ord., *Compositæ*.)

G. glauca. 1883.

Cacou'cia. (The Indian name. Nat. ord., *Combretaceæ*. Allied to *Combretum*.)

A fine stove climber, requiring the same treatment as *Combretum purpureum*. Cuttings of stiff side-shoots in sand, under a bell-glass, in bottom-heat. Peat and loam, both sandy and fibry.

C. coccinea. Scarlet. May. Guiana.

Ca'ctus Da'hlia. *Dahlia Juarezii*.

Ca'ctus. Melon Thistle. (A name applied by Theophrastus to some spiny plant.) A large number of plants were formerly grouped under the generic name of *Cactus*, but have now been separated into well-marked genera, and the name *Cactus* dropped. The species enumerated here may be regarded as typical of those genera, detailed lists being inserted under the various generic names in other parts of this work.

A. Calyx-tube produced beyond the ovary. Stem covered with elongated tubercles or ribs, which are aculeate, rarely leafy.

MELOCA'CTUS.

Melocactus communi'sis. B. M. tt. 3090-3091.

MAMILLA'RIA (Syn., ANHALO'NIUM)

M. atrata, B. M. t. 3642.

— *clava*, B. M. t. 4353.

— *floribunda*, B. M. t. 3647.

— *Lehmanni*, B. M. t. 3634.

— *pycnantha*, B. M. t. 3972.

— *tennis*, B. M. t. 3646.

— *tetracantha*, B. M. t. 4060.

— *turbinata*, B. M. t. 3984.

ECHINOCA'CTUS

E. centetarius, B. M. t. 3974.

— *corynodes*, B. M. t. 3906.

— *Leeanus*, B. M. t. 4184.

— *longhamatus*, B. M. t. 4632.

— *Mackenziana*, B. M. t. 3561.

— *multiflorus*, B. M. t. 4181.

— *myriostigma*, B. M. t. 4177.

— *Ottomnis*, B. M. t. 3107.

— *oxygonus*, B. R. t. 1717.

— *pectiniferus*, B. M. t. 4190.

— *Pentlandii*, B. M. t. 4124.

— *rhodophthalma*, B. M. t. 4486.

— *sessiliflorus*, B. M. t. 3569.

— *streptocaulon*, B. M. t. 4562.

— *tenuspinus*, B. M. t. 3963.

— *tubiflorus*, B. M. t. 3627.

— *Visnaga*, B. M. t. 4559.

— *Williamsii*, B. M. t. 4296.

PHYLOCA'CTUS.

Ca'ctus phyllanthus, B. M. t. 2692.

— *speciosissimus*, B. M. t. 2306.

Cercus Ackermanni, B. M. t. 3598.

— *crenatus*, B. R. 1844, t. 31.

Disocactus biflorus, B. R. 1845, t. 9.

EPIPHYLLUM.

Ca'ctus truncatus, B. M. t. 2562.

Epiphyllum Russelianaum, B. M. t. 3717.

B. Calyx-tube not produced beyond the ovary. Stem branched, jointed.

RHI'PSALIS.

Ca'ctus alatus, B. M. t. 2820.

Rhipsalis Cassutha, B. M. t. 3080.

— *fasciculata*, B. M. t. 3079.

— *grandiflora*, B. M. t. 2740.

— *mesembrianthemoides*, B. M. t. 3073.

NOPA'LEA.

Ca'ctus cochemillifer, Andr. Rep. t. 533.

OPUN'TIA.

Opuntia aurantiaca, B. R. t. 1606.

— *brasiliensis*, B. M. t. 3293.

— *cylin'drica*, B. M. t. 3301.

— *decumbens*, B. M. t. 3914.

— *Drummondii*, Maund Bot. 5, t. 246.

— *monacantha*, B. M. t. 3911.

— *Salmiana*, B. M. t. 4542.

PERESKIA.

Pereskia aculeata, B. R. t. 1928.
— *Ble'o*, B. M. t. 3478, B. R. t. 1473.

Culture.—The features of cultivation common to all these genera are a high temperature and a somewhat moist atmosphere when growing in summer; a dry atmosphere when ripening their growth; and a dry atmosphere—dryness comparatively at the roots—and a low temperature when in a state of rest. 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.

Ca'dia. (Derivation uncertain. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ*.)

Dwarf shrub, requiring stove treatment.

C. Ellisia'na. Rose-red. December. Madagascar. 1870. B. M. t. 6685. Remarkable for having regular flowers resembling those of a mallow.

Cæno'pteris. (From *kainos*, new, and *pteris*, a fern. Nat. ord., *Filices*.)

Divisions, like most Ferns; peat and loam.

GREENHOUSE EVERGREENS.

C. appendiculata. †. Brown. July. N. Holland. 1822.

— *odontites.* See *Asplenium flaccidum*.

STOVE HERBACEOUS.

C. myriophylla and *rhizophylla.* See *Asplenium rhizophyllum*.

— *thalictroides.* 1. September. Jamaica.

Cæsalpi'nia. Brasiletto. (Named after *Cæsalpinus*, physician to Pope Clement VIII. Nat. ord., *Leguminosæ*; Tribe, *Eucæsalpineæ*.)

"As hard as Brazils" refers to the Brazil-wood—that of *Cæsalpi'nia brasiliensis*. Stove evergreens, except where otherwise stated. Seeds and cuttings in sand, and in bottom-heat. Peat and loam.

C. alternifolia. Orange. Central America. 1868.

— *bahamensis.* 15. White. Bahama. 1820.

— *brasiliensis.* 20. Orange. Jamaica. 1739.

— *cassioides.* 6. Yellow. S. Amer. 1821.

— *chinensis.* See *C. Nuga*.

— *digyna.* 15. Yellow. E. Ind. 1820. Syn.,

C. oleosperma.

— *Gilliesii.* Mendoza. 1829. Deciduous.

— *japonica.* Yellow. Japan. Hardy. First flowered in 1887. Syn., *C. crista*, G. C. 1888, vol. 4, p. 513.

— *mi'naz.* White, purple. April. Canton.

— *Nuga.* 10. Yellow. E. Ind. 1820. Syn., *C. chinensis*.

— *oleosperma.* See *C. digyna*.

— *paniculata.* 6. Yellow. Malabar. 1817.

— *pectinata.* See *Coultéria tinctoria*.

— *pro'cera.* 30. Yellow. Cuba. 1824.

— *pulche'rri'ma.* 12. Red, tipped yellow. W.

Ind. Maund Bot. 4, t. 151.

— *punctata.* 6. Yellow. Brazil. 1820.

— *Sappan.* 20. Yellow. E. Ind. 1773.

— *scandens.* 20. Yellow. E. Ind. 1800. Climber.

— *India.* Climber. Yellow. April. Ind. 1857. Syn., *Biancea scandens*.

— *tinctoria.* See *Coultéria tinctoria*.

— *vesicaria.* See *Coultéria mexicana*

Cæ'sia. (Named after *F. Cæsia*. Nat. ord., *Liliaceæ*; Tribe, *Asphodelææ*. Allied to *Anthericum*.)

Greenhouse tuberous-rooted perennial. Seeds in March, in heat; division of the roots; loam and peat.

C. vittata. 1. Pale blue. July. N. S. Wales. 1816.

Caio'phora. See **Blumenbachia.**

Caja'nus. Pigeon Pea. (From its Malabar name, *Catjang*. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Phaseolus*.)

Stove evergreen shrubs. Seeds in spring; young cuttings under a bell-glass in heat; sandy loam and peat.

C. indicus. Yellow. E. India. B. M. t. 6440.

— *bi'color.* 4. Yellow. July. E. Ind. 1800.

— *jav'nis.* 4. Yellow. July. E. Ind. 1687.

Cajeput-tree. *Melaleuca leucade'ndron.*

Cajo'phora. This genus is now united to **Blumenbachia.**

C. Pentla'ndii. See *Loasa Pentla'ndii*.

Calaba-tree. *Calophyllum ca'laba.*

Calabash. *Crescentia Cuje'te.*

Calade'nia. (From *kalos*, beautiful, and *aden*, a gland. Nat. ord., *Orchideæ*. Allied to *Limodorum*.)

Greenhouse terrestrial orchids. Division of the roots; loam, peat, sand, and broken pots in equal portions. They must be kept cool in winter.

C. alata. June. Tasmania. Fl. Tasm. t. 125.

Probably a form of *C. carnea* with smaller flowers.

— *cœru'lea.* Blue. Australia. 1804.

— *car'nea.* Flesh-coloured. July. Australia. 1826.

— *alba.* White. July. Australia. 1810.

— *Syn., C. alba.*

— *clavi'gera.* June. N. S. Wales.

— *defo'rmis.* Yellow. August. Swan River.

— *Syn., C. unguiculata.*

— *dilatata.* See *C. Patersonii*, var. *dilatata*.

— *elongata.* See *C. latifolia*.

— *filamento'sa.* Yellow. Swan River. Syn.,

C. denticulata.

— *gemmata.* †. Soft deep blue. W. Australia.

— *gra'cilis.* See *C. testacea*.

— *h'irta.* Yellow. May. Swan River.

— *iziol'des.* Yellow. May. Swan River.

— *latifolia.* Yellow. Swan River. Syn., *C.*

mollis.

— *longicauda.* See *C. Patersonii*, var. *dilatata*.

— *marginata.* Purple. May. Swan River.

— *Patersonii.* N. S. Wales.

— *dilatata.* Yellow. Lip broad. June.

Swan River. Fl. Tasm. t. 122, fig. B.

Syns., *C. dilatata* and *C. longicauda*.

— *pili'fera.* Purple. September. Swan River.

— *re'pians.* Purple. August. Swan River.

— *testacea.* July. Australia. 1824. Syn., *C.*

gracilis.

— *ungiculata.* See *C. deformis*.

Caladium. (A word of uncertain derivation, perhaps from *kaladion*, a cup. Nat. ord., *Aroideæ*. Allied to *Colocasia*.)

The ginger-like roots of *C. bi'color*, etc., are used as common food in tropical countries, under

the name cocoa-roots ; but the roots of others are very acid. Stove plants. 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°.

- C. aculeatum*. See *Montrichardia aculeata*.
 — *arborescens*. See *Montrichardia arborescens*.
 — *arborescens*. 9. White. Cumana. 1820.
 — *argyretes*. III. Hort. 1858, t. 185. See *C. Humboldtii*.
 — *argyreneura*. 2. S. America.
 — *auritum*. See *Syngonium auritum*.
 — *Baraquinii*. Para. 1858. III. Hort. 1860, t. 257.
 — *Bellefleurii*. III. Hort. 1858, p. 61, is a variety of *C. picturatum*.
 — *bicolor*. 1. White. June. Madeira. 1778. Syn., *Arum bicolor*. B. M. t. 820. Varieties of this species have received the following names :—*albomaculatum*, *argyrosiphilum*, *Curvaadii*, *Devonianum* (III. Hort. 1862, t. 322, f. 1. Syn., *C. Ottonis* and *C. Wallisii*), *Duchartrei*, *Eckhartii*, *hæmostigma* (Syn., *C. discolor*, in part), *Hendersonii*, *Houbyanum*, *Houlletii*, *Kettleri*, *Kochii*, *Kramerianum*, *Leopoldii*, *Lindeni*, *marginatum*, *mirabile* (II. Hort. 1863, t. 354), *Neumannii* (B. M. t. 5199), *peltucidum*, *rubellum*, *Steboldii*, *splendens* (Syn., *C. roseum*), *Stangeanum*, *Thelemanii*, *transparens*, *Vellozianum* (Syn., *C. pusillum*, Belg. Hort. 1860, vol. x. p. 169), etc.
 — *Brogneri*. Para. 1858.
 — *Canna*. Leaves green, with pale blotches, veins deep red. Para. 1863.
 — *cardinalis*. 1882.
 — *Chantii*. Para. 1858.
 — *cucullatum*. See *Alocasia cucullata*.
 — *cupreum*. See *Alocasia cuprea*. *C. cupreum* of III. Hort. 1861, t. 297, is *C. picturatum*, var. *porphyroneron*.
 — *Devosianum*. Para. 1862. Leaves angular, blotched white and pink.
 — *edule*. See *Xanthosoma edule*.
 — *erythraea*. 1. S. America.
 — *esculentum*. See *Colocasia antiquorum*, var. *esculentum*.
 — *fragrantissimum*. B. M. t. 3314. See *Philodendron fragrantissimum*.
 — *hæmatostigma*. Crimson-spotted. S. America.
 — *Hartii*. Leaves red-tinged and slightly white-spotted. Para. 1862.
 — *hastatum*. III. Hort. 1858, p. 68, is a variety of *C. picturatum*.
 — *helleborifolium*. See *Xanthosoma helleborifolium*.
 — *Humboldtii*. Para. 1858. Syn., *C. argyrites*.
 — *myriostigma*.
 — *Jenni*. See *Alocasia*.
 — *Kochii*. Leaves white-spotted. Para. 1862.
 — *Koerum*. See *Philodendron lacinum*.
 — *Lematra*. Leaves green, with whitish-green venation. S. America. 1861. III. Hort. 1862, t. 311.
 — *Leopoldii*. Leaves green, marbled with red, and blotched with pink. Para. 1864.
 — *lividum*. 1. Dingy. September. W. Indies. 1828.
 — *Lovii*. See *Alocasia*.
 — *lividum*. B. C. t. 1590. See *Staurostigma concinnum*.
 — *macrophyllum*. Leaves palish green, blotched with greenish-white. Para. 1862.
 — *maculatum*. 6. Green. August. S. Amer. 1820.
 — *marmoratum*. Yellow. Guayaquil. Syn., *Alocasia Roezlii*.
 — *mirabile*. Leaves white-mottled. Para. 1863.
 — *myriostigma* is a variety of *C. Humboldtii*.

- C. nymphæifolium*. A variety of *Colocasia antiquorum*.
 — *odoratum*. B. C. t. 416. See *Alocasia macrorrhiza*. Syn., *C. odorum*. B. R. t. 641.
 — *ovatum*. See *Lagenandra toxicaria*.
 — *pedatum*. See *Philodendron laciniatum*.
 — *Perrii*. Leaves green, with red blotches. Brazil. 1861.
 — *petiolatum*. See *Anchomanes difformis*.
 — *pictum*. S. America.
 — *picturatum*. Greenish. S. America.
 — *pinnatifidum*. See *Philodendron pinnatifidum*.
 — *pœtile*. White. Brazil. Syn., *C. pallidivervium*.
 — *primitum*. See *Gonatanthus sarmentosus*, B. M. t. 5275.
 — *regule*. Leaves of a mottled green, with white blotches. Brazil. 1861. III. Hort. 1862, t. 316. Syn., *C. surinamense* and *Wagneri*.
 — *Rougiéri*. Leaves green, with white spots ; the centre pale green, with red veins. Para. 1864.
 — *rubrovenium*. Leaves greyish-green in the centre, with red veins. Para. 1862.
 — *sagittæfolium*. 2. White. W. Ind. 1710.
 — *sanguinolentum*. Leaves with a white centre blotched with red. Amazons. 1872.
 — *scandens*. See *Culcasia scandens*.
 — *Schomburgkii*. Leaves green, with white veins. Brazil and Guiana. 1861. III. Hort. t. 297, f. 2. Syn., *C. Schoelleri*, *Alocasia argyreneura*.
 — *Schmittii*. Centre of leaf whitish, with green network, midrib and veins red. Brazil. 1861. Syn., *Alocasia erythraea*.
 — *Seguinum*, Mill. Ic. t. 295. See *Dieffenbachia Seguine*.
 — *smaragdinum*. White. Caraccas.
 — *spectabile*. Leaves with blotches of pink and white. Brazil. 1861.
 — *splendidum*. A synonym of *C. bicolor*.
 — *splendissimum*. Leaves red-centred. Para. 1861.
 — *striatipes*. Brazil. Syn., *Philodendron striatipes*.
 — *subrotundum*. Leaves roundish, spotted with red and white. Brazil. 1858.
 — *tripartitum*, Jacq. H. Schomb. t. 190. See *Philodendron tripartitum*.
 — *Troubetskoyi*. Fl. Ser. t. 1879 is a form of *C. picturatum*.
 — *Verschaffeltii*. Brazil. B. M. t. 5263.
 — *virginicum*. See *Peltandra virginica*.
 — *viviparum*. See *Remusatia vivipara*.
 — *Wallisii*. Leaves green, spotted with white ; veins pale. Para. 1864.
 — *Wightii*. Leaves green, with blotches of pink and white. Brazil.
 — *xanthorrhizum*. See *Xanthosoma sagittæfolium*.
 — *zamiæfolium*. See *Zamioculcas*. B. M. t. 598.

Cala'is. See *Microseris*.

Calami'ntha. Calamint. (From *kalos*, beautiful, and *mintha*, mint. Nat. ord., *Labiatae* ; Tribe, *Satureineæ*. Allied to *Melissa*. Syn., *Acinos*.)

Hardy herbaceous perennials, except where otherwise stated. Division and seeds ; common soil.

- C. Acinos*. †. Bluish purple. July. England. Eng. Bot. ed. 3, t. 1048. Syn., *Acinos villosus* and *vulgaris*.
 — *alba*. †. White. July. Hungary. 1818.
 — *alpina*. †. Purplish. S. Europe. 1731. Syn., *Acinos alpinus*. B. M. t. 2153.

- C. caroliniana*. 1. Flame-coloured. June. Carolina. 1804.
 — *coccinea*. Scarlet. June to October. S. United States. 1834. Syns., *Gardouita Hookeri*, B. M. t. 1747, and *Melissa coccinea*.
 — *cretica*. $\frac{1}{2}$. Purple. June. South Europe. 1596. Half-hardy evergreen.
 — *fructicosa*. See *Otostegia scariosa*.
 — *grandiflora*. 1. Red. July. Italy. 1596. Syn., *Acinos grandiflorus*.
 — — *variegata*. 1. Red. July. Gardens.
 — *graveolens*. 1. Purple. June. S. Europe. 1820. Syns., *Acinos graveolens* (Sibth. Fl. Gr. t. 576) and *purpurascens*.
 — *marifolia*. See *Micromeria marifolia*.
 — *minuloides*. $\frac{1}{2}$. Yellow. September. California. 1849.
 — *pataviua*. $\frac{1}{2}$. Reddish. S. Europe. 1776.
 — *rotundifolia*. $\frac{1}{2}$. Purple. June. Spain. 1829. Syn., *Acinos rotundifolius*.
 — *suaveolens*. 1. Reddish-purple. S. Europe. 1817. Syns., *Acinos heterophyllus* and *suaveolens*.

Calampe'lis. A synonym of Eccremocarpus.

Calamus (From *kalom*, the Arabic word for a reed. Nat. ord., *Palmaceæ*; Tribe, *Lepidocarpeæ*. Syn., *Dæmonorops*, which differs only in having deciduous spathes.)

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. accedens*. India.
 — *adspersus*. 20. Java. 1866.
 — *albus*. 50. E. Indies. 1812.
 — *asperrimus*. Climber. Java. 1877. Ill. Hort. t. 275.
 — *australis*. Fitzroy Island. 1861.
 — *calicarpus*. Malacca.
 — *calolepis*. Java.
 — *ciliaris*. E. Indies. 1869.
 — *cinnamomea*. Java? 1870.
 — *delicatulus*. Ceylon.
 — *dra'co*. 50. E. Indies. 1819.
 — *eretus*. Silhet.
 — *farinosus*. Sumatra. 1873.
 — *fi'ssus*. Borneo. Syn., *Dæmonorops fissus*.
 — *flagellum*. 6. Sikkim Himalaya.
 — *floribundus*. Upper Assam.
 — *guineensis*. Sikkim.
 — *heteroides*. Java.
 — *hystric*. Malacca and Java.
 — *Jenkensiana*. Assam and Sikkim Himalayas.
 — *kentiaformis*. G. G. 1884, vol. 21, p. 711.
 — *latifolius*. Chittagong and Burmah.
 — *leptospadia*. Khasia Mts.
 — *Lewisiana*. Java. 1878.
 — *Lindei*.
 — *marginatus*. Borneo.
 — *melanocheates*. 150. Malay Archipelago. Syn., *Dæmonorops melanocheates*.
 — *micranthus*. Malaya.
 — *montanus*. Sikkim Himalayas.
 — *Muelleri*. Tropical Australia.
 — *Nicola'i*. Kerch. Palm. p. 237.
 — *niger*. E. Indies. 1824.
 — *oblongus*. 50. Java. 1857.
 — *ornatus*. Java. 1875. Syn., *Dæmonorops ornatus*.
 — *ovoides*. Java. 1872.
 — *oxya*. Java.
 — *pachyste'nos*. Ceylon.
 — *palembanicus*. Java. 1872. Syn., *Dæmonorops palembanicus*.

- C. periacanthus*. Java. 1872. Syn., *Dæmonorops periacanthus*.
 — *princeps*. Java. 1872.
 — *rotang*. Papua.
 — *Rotang*. India. Syn., *Arundo Rotang*.
 — *Rozburghii*. Java. 1872.
 — *Royale'nis*. N. W. Himalayas.
 — *rude'ntum*. 200. Java. 1812. Probably the same as *C. albus*.
 — *schizospathus*. Sikkim and Khasia Mts.
 — *spectabilis*. Malacca.
 — *subangulatus*. E. Indies.
 — *tenuis*. Silhet.
 — *trichosus*. Sumatra.
 — *trine'rvus*. E. Indies.
 — *Verschaffeltii*. Madagascar. 1861.
 — *verticillaris*. Malacca. 1873. Syn., *Dæmonorops verticillaris*.
 — *verus*. 20. Cochin China. 1812. Syn., *C. Rumphii*.
 — *viminalis*. 50. Java. 1847.
 — *Wightii*. Deccan.
 — *Zalacca*. See *Zalacca edulis* or *Wallichiana*.

Calandra grana'ria. Granary Weevil. This insect is a very troublesome pest, not only to the farmer, whose corn it destroys wholesale, but to the gardener also; attacking his seed stores and devouring some of his fruit. The beetle averages about two lines in length (the line [α] by the side of our illustration represents the length of a rather large individual from which our drawing was made); it is of a blackish-brown



colour, punctate on the thorax, and striato-punctate on the elytra; the roundish head is furnished with a rather long proboscis. The eggs are deposited in various kinds of grain, but only one egg is deposited in each seed, in which the larva feeds, and changes to the pupa state, from which in a short time the perfect beetle emerges. The whole process, from the laying of the egg to the development of the perfect insect, is completed in a space of six or seven weeks, so that many generations are produced in a year; and if not constantly checked, and every possible means taken to lessen their numbers, they will be found to have destroyed a very large proportion of the crop they have attacked, in the course of one summer. Neglected barns and granaries are their chief resorts; and from these they spread in myriads, doing damage to everything

that is agreeable to them. This insect is very difficult to get rid of; perfect cleanliness in all grain stores, and the destruction of the beetle whenever seen, is the best way to contend against its ravages. In all places where it is troublesome, traps should also be set for it, such as sopped bread, or bits of fruit, or shallow plates of milk, and the insects destroyed in boiling water.

Calandri'nia. (Named after *Calan-drini*, a German botanist. Nat. ord., *Portulacæe*.)

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. arenaria*. $\frac{1}{2}$. Orange, red. July. Valparaiso. 1831. Herbaceous perennial. B. R. t. 1665.
 — *caulescens*. Rose. August. Mexico. 1827. Annual.
 — *compressa*. $\frac{1}{2}$. Rose. August. Chili. 1826. Annual.
 — *Menziesii*. Crimson-purple. Summer. California. 1831. B. R. t. 1598. Syn., *C. speciosa*, B. M. t. 3379.
 — *monandra*. $\frac{1}{2}$. Red. August. Chili. 1837. Annual. Syns., *C. glandulosa* and *parviflora*.
 — *oppositifolia*. Prostrate. Pearly-white. Summer. Oregon and N. California. 1838. B. M. t. 7051.
 — *procumbens*. $\frac{1}{2}$. Rose. August. Peru. 1827. Annual.
 — *speciosa*. See *C. Menziesii*.
 — *umbellata*. $\frac{1}{2}$. Rose. July. Peru. 1826. Annual. Pax. Mag. vol. 12, p. 271.

GREENHOUSE.

- C. Andre'wsii*. Rose. August. W. Ind. 1812. Deciduous shrub. Syn., *Talinum Andre'wsii*.
 — *discolor*. $1\frac{1}{2}$. Rose. July. Chili. 1834. Herbaceous perennial. B. M. t. 3357.
 — *glauca*. Rose. August. Chili. 1827. Annual.
 — *Lockhartii*. Rose. June. Trinidad. 1825. Deciduous shrub. Syn., *Talinum grandiflorum*.
 — *nitida*. $\frac{1}{2}$. Red. August. Chili. 1837. Annual.
 — *phacosperma*. Red. August. Chili. 1837. Biennial.

STOVE.

- C. ciliata*. $\frac{1}{2}$. Purple. August. Chili. 1823. Annual.
 — *compressa ascendens*. $\frac{1}{2}$. Purple. Brazil. Herbaceous perennial. Syn., *C. ascendens*.
 — *grandiflora*. 1. Purple. July. Chili. 1826. Herbaceous perennial. B. M. t. 3369.
 — *Llavea*. April. Mexico. Herbaceous perennial.
 — *paniculata*. $1\frac{1}{2}$. Purple. July. S. Amer. 1816. Herbaceous perennial.

Cala'nthe. (From *kalos*, beautiful, and *anthos*, a flower. Nat. ord., *Orchidæe*.)

Terrestrial orchids, all evergreens except *C. vestita*. 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°.

- C. anchorifera*. Pale ochre. December. Polynesia. 1832.
 — *australis*. See *C. veratrifolia*.
 — *Barberiana*. White, yellow, occasionally light purple. 1831. Hybrid between *C. vestita* and *C. Turneri*.
 — *bella*. Lilac; lip carmine bordered white, spur pale yellow. 1831. Hybrid between *C. Veitchii* and *C. Turneri*.
 — *bicolor*. See *C. striata*.
 — *bracteosa*. White. Samoa. 1833.
 — *brevicorua*. Rose. White. August. Nepal. 1838.
 — *Cecilia*. Light ochre, shaded purple, calli yellow. Malay Peninsula.
 — *coiorans*. G. C. 24, p. 360.
 — *curculigoides*. 2. Orange. October. Malacca. 1844. B. R. 1847, t. 8.
 — *Curtisii*. Rose outside, white within; lip yellow with purple calli; column white. Sunda Islands. 1834.
 — *densiflora*. $\frac{1}{2}$. Yellowish. September. E. Ind. 1837. B. R. t. 1646.
 — *diphyryx*. Purple. Sunda Islands. 1834.
 — *discolor*. Dark purple; lip white, tinged rose. Japan. 1837.
 — *Domini*. Lilac-purple, white; lip becoming deep red. Hybrid between *C. Masuca* and *C. furcata*. Dr. Lindley states this to be the first hybrid orchid raised. Seed obtained in 1854, flowered 1855.
 — *emarginata*. Lindley not Wight. Violet, orange. Java. 1866.
 — *flavicans*. White, blue. April. E. Ind. 1838.
 — *Forstermannii*. Yellow; lip pale yellow. Burmah.
 — *furcata*. White. Luzon Isles. 1836.
 — *gracilis*. Greenish-yellow, or nearly white. September. Khasya. 1851.
 — *Ha'lli*. Garden hybrid. 1888.
 — *La'ngi*. Deep yellow. New Caledonia.
 — *lentiginosa*. White; lip spotted with purple. Garden hybrid, probably between *C. labrosa* and *C. Veitchii*.
 — *Masuca*. 2. Purple; lip darker. June. E. Ind. 1838. B. R. 1844, t. 37.
 — *natale'nsis*. Pale lilac; lip salmon-colour. Natal. B. M. t. 6844.
 — *ochracea*. Pale yellow. April. Japan. 1836.
 — *Pe'tri*. White, yellow. Polynesia. 1830.
 — *plantaginea*. Lilac. February. Nepal. 1839.
 — *pleiochroma*. Whitish, purplish, ochre, orange. Japan. 1871.
 — *porphyrea*. Purple; lip yellowish at base. Garden hybrid.
 — *proboscidea*. White, or light ochre; calli vermilion. Sunda Islands.
 — *Regnierii*. White; column and lip crimson-purple; spur yellowish-green. Cochinchina. 1833.
 — *fau'sta*. Purple.
 — *rosea*. Pale rose, white. Moulmein. 1851. B. M. t. 5312.
 — *Sandhorstiana*. Similar to *C. vestita*, but with an eye-spot on the lip.
 — *sanguinaria*. Blood-red, pale purple. Seedling form.
 — *Sieboldii*. 1. Yellow. Japan. 1837. Gf. t. 635.
 — *Stevensii*. Cochinchina. 1833.
 — *striata*. $1\frac{1}{2}$. Yellow, brown. Japan. 1838. B. M. t. 7026. Syn., *C. Sieboldii*.
 — *sylvatica*. White, changing to yellow. Madagascar. 1823.
 — *Teatori*. Cream-white, violet, red changing to ochre. 1879.
 — *Turneri*. Gard. Chron. 1882, vol. 17, p. 49.
 — *niva'lis*. Pure white. 1832.
 — *Veitchii*. Pure white with rose-coloured eye. There are several varieties of this. Syn., *Limatodes rosea*. B. M. t. 5375.
 — *veratrifolia*. 2. White. April. Java. 1819.
 — *macroleba*. Polynesia. 1873.

- C. versicolor*. Whitish-blue. August. Mauritius. 1836.
 — *vestita*. 2½. White and pink. November. This has pseudo-bulbs. No water given between December and March, its time of rest.
 — *oculata gigantea*. White, with fiery-red blotch on base of lip. Borneo. Warn. Orch. Alb., t. 211.
 — *Willia'nsii*. Deep crimson. 1884.
 — *viridifusca*. Greenish-brown. April. Assam.
 — *Willia'nsii*. See *C. vestita*, var. *Williamsii*.

Calathea. (From *kalathos*, a basket; in reference to the leaves being worked into baskets in South America. Nat. ord., *Scitamineæ*; Tribe, *Marantaceæ*.)

Stove herbaceous perennials. Divisions; sandy peat and fibry loam. Summer temp. 60° to 75°; winter, 55° to 60°

- C. affinis*. 1879.
 — *Allou'ya*. Guiana.
 — *angustifolia*. 1879.
 — *apicata* ta. White. Brazil. 1875. Syn., *Maranta pinnato-picta*. Belg. Hort. 1875, t. 18.
 — *argyrea*. 1. Bahia. 1859.
 — *arrecta*. Ecuador. 1872. Syn., *Maranta arrecta*. Ill. Hort. 1871, t. 77.
 — *Bachemia'na*. Leaves silvery, with green lines and blotches. Brazil. 1875.
 — *Baraquinia'na*. Leaves with two silvery bands. Amazons. 1868. Syn., *Maranta Baraquinii*.
 — *bellu*. Leaves greyish-green, with the margins and two series of central patches deep green. Brazil. 1875. Syn., *Maranta bella* and *M. tessellata Kegebiani*.
 — *bellula*. Leaves dark green, with rosy-white festoons along the midrib. Amazons. 1872. Syn., *Maranta bellula*.
 — *chimborace'nsis*. See *Maranta*.
 — *cinerea*. Amazons. 1872. Syn., *Maranta cinerea*.
 — *crocata*. Orange. Brazil. 1875.
 — *de'nsa*. Brazil. 1865. Syn., *Phrynium densum*.
 — *eximia*. 1857. Syn., *Phrynium eximium*. Gf. t. 686.
 — *fasciata*. 1. Brazil. 1869. Syn., *Maranta fasciata*. Gf. t. 255.
 — *flavescens*. 1½. Yellow. August. Brazil. 1822.
 — *grandifolia*. 2. Yellow. July. Rio Janeiro. 1826.
 — *hieroglyphica*. Leaves deep green, paler along the midrib, with two white lines between each pair of veins. Columbia. 1873. Ill. Hort. 1873, t. 122.
 — *illust'ris*. Leaves creamy-zoned, red beneath. Ecuador. 1866. Syn., *Maranta illustris*.
 — *inscri'pta*. Leaves opaque green, with curved silvery lines. Brazil. 1875. Syn., *Maranta inscripta*.
 — *Kerchovia'na*. ½. Leaves green, with two rows of brown blotches. Brazil. 1879. Syn., *M. leuconeu'ra Kerchoviana*.
 — *Kornickia'na*. White. Brazil. 1874. Syn., *C. propinqua* and *Riedeliana*.
 — *Kummeria'na*. Leaves dark green, with silvery bands. Brazil. 1875.
 — *Legrellia'na*. Ecuador. 1867. Syn., *Maranta Legrelliana*.
 — *Lei'tzei*. Leaves deep green, with short yellow-green bands. Brazil. 1875. Gf. t. 935.
 — *leopardi'na*. 2. Yellow. Brazil. 1875. Syn., *Maranta leopardina*. Gf. t. 893.
 — *leuconeu'ra*. White, purple. Brazil. 1875. Syn., *Maranta leuconeu'ra*.

- C. leucostachys*. 1. White. October. Costa Rica. 1874.
 — *Lindenia'na*. Leaves banded with pale and dark green. Peru. 1866. Syn., *Maranta Lindentana*. Ill. Hort. 1871, t. 82.
 — *longibractea'ta*. 1. Purple. July. Brazil. 1826.
 — *Lucia'ni*. Leaves shining green, the midrib festooned with silvery white. Tropical America. 1872. Syn., *Maranta Luciani*.
 — *Makoya'na*. Leaves greyish, with oblong dark green patches. Tropical America. 1872. Syn., *Maranta Makoyana* and *M. olivaris*. Gard. Chron. 1872, p. 1589.
 — *Massangea'na*. White. Brazil. 1875. Syn., *Maranta leuconeu'ra Massangeana*.
 — *me'dio-pi'cta*. Purple; leaves dark green, with feathered white central stripe. Brazil. 1878.
 — *meta'llica*. Violet. New Grenada. 1855.
 — *mi'cans*. Brazil.
 — *ama'bilis*. 1879. Syn., *C. amabilis*.
 — *ni'gro-costa'ta*. Columbia. 1874.
 — *ni'tens*. Brazil. 1880.
 — *Oppenheimia'na*. Leaves deep green, with white bands. Brazil.
 — *orbicula'ta*. 2. Yellow. August. W. Ind. 1830.
 — *orna'ta*. 1. Columbia 1849. Syn., *Maranta ornata*.
 — *al'bo-linea'ta*. Columbia. 1848. Syn., *Maranta albo-lineata*.
 — *maje'stica*. Rio Purus. 1866. Syn., *Maranta majestica*.
 — *rega'lis*. Peru. 1856. Syn., *Maranta regalis* and *M. coriifolia*.
 — *ro'seo-linea'ta*. 1. 1848. Syn., *Maranta roseo-lineata*.
 — *pacifi'ca*. Leaves emerald green, purple beneath. E. Peru. 1871. Syn., *Maranta pacifica*.
 — *par'di'na* and *pavoni'na* are white-spotted. Fl. Ser. t. 1101.
 — *pictura'ta*. Brazil. 1866.
 — *porphyroca'lis*. Columbia. 1875. Syn., *Maranta porphyrocaulis*.
 — *prasi'na*. Leaves with a yellow-green central band. Brazil. 1875. Syn., *Maranta prasina*.
 — *pri'nceps*. 2. Leaves metallic green, with two yellow bands, purple beneath. Peru. 1869. Syn., *Maranta princeps*.
 — *propinqua*. See *C. Kornickiana*.
 — *pru'na'ta*. Nicaragua. 1872. Syn., *Maranta pruinata*.
 — *pulche'lla*. Leaves bright green, with two series of deep green blotches, alternately large and small. Brazil. 1859. Syn., *Maranta pulchella*.
 — *Riedelia'na*. See *C. Kornickiana*.
 — *ro'seo-pi'cta*. Leaves rose-banded, red beneath. Upper Amazon. 1866. Syn., *Maranta roseo-picta*. Gf. t. 610.
 — *Wagne'ri*. Syn., *Maranta Wagneri*.
 — *rotundifo'lia*. 1857. Syn., *Maranta orbifolia*.
 — *rufiba'rba*. Brazil. 1879.
 — *Scema'nni*. Leaves satiny emerald-green, midrib whitish. Nicaragua. 1872. Syn., *Maranta Seemannii*.
 — *smaragdi'na*. See *Maranta*.
 — *sple'ndida*. Leaves green-banded, purple beneath. Brazil. 1864. Syn., *Maranta splendida*.
 — *tami'na*. White. Brazil. 1876.
 — *tubisp'ata*. Yellow; leaves brown-blotched. W. Tropical America. 1865. B. M. t. 5542.
 — *undula'ta*. Leaves bright green, with silvery central stripe. Peru. 1871. Syn., *Maranta undulata*.
 — *Va'nden He'cke'i*. Leaves deep green, marked with grey. Brazil. 1865. Syn., *Maranta* and *Phrynium Vanden Hecke'i*.

- C. varians*. 1855.
 — *variegata*. 1½. Tropical America. 1857.
 — *villosa*. 3. April. Brazil. 1825.
 — *violacea*. 1½. Purple. July. Brazil. 1815.
 — *virginalis*. Amazons. 1868. Syn., *Maranta virginalis*.
 — — *major*. Peru. 1869. Syn., *Maranta virginalis major*.
 — *vittata*. Brazil. 1857. Syn., *Maranta vittata*.
 — *Veitchiana*. White; leaves green-blotched. W. Tropical America. 1865. Syn., *Maranta Veitchii*. B. M. t. 5535.
 — *vestita*. 1½. Whitish. Bahia. 1872. Ref. Bot. t. 311.
 — *Wallisii*. South America. 1867. Syn., *Maranta Wallisii*.
 — — *discolor*. Leaves bright velvety green, with the centre and margins grey. S. America. 1871.
 — *Warszewiczii*. 1. White. February. Tropical America. 1879. Syn., *Maranta Warszewiczii*. Gfl. t. 515.
 — *Wiotii*. Leaves bright green, with two series of olive-green blotches. Brazil. 1875. Syn., *Maranta Wiotii*.
 — *zebrina*. Red, yellow. Brazil. 1815. B. M. t. 885.

Calcea'ria pi'cta. See **Corys-anthes**.

Calathian Violet. *Gentiana pncumona'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 carbonate of lime, 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.

Calceola'ria. Slipperwort. (From *calceolus*, a slipper; in reference to the shape of the flower. Nat. ord., *Scrophulariaceæ*.)

Herbaceous kinds, to bloom early, sow seeds in August and September, and cuttings at the same time. 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°.

ANNUAL.

- C. chelidonioides*. 1. Yellow. June. Peru. 1852.

HERBACEOUS PERENNIALS.

- C. amplexicaulis*. 1½. Yellow. June. Peru. 1845. B. M. t. 4300.
 — — *albescens*. Pale yellow. 1882.
 — *arachnoides*. 1. Purple. June. Chili. 1827. B. M. t. 2874.
 — — *alba*. 1. White. June.
 — — *crenatispora*. Garden hybrid 1888.

- C. bellidifolia*. ½. Yellow, red. Chili. 1861.
 — *Burbiagei*. 2-4. Yellow. Autumn. 1882. Hybrid between *C. Pavonia* and *C. fuchsifolia*.
 — *conno'ta*. B. M. t. 2876. See *C. petiolaris*.
 — *corymbosa*. 1. Yellow. May. Chili. 1822. B. R. t. 723.
 — *crenatispora*. 1½. Yellow-spotted. June. Chili. 1831. B. M. t. 3255.
 — *cuneiformis*. 1½. Pale lemon. Bolivia. 1846.
 — *flexuosa*. 3. Yellow. Peru Mountains. 1847. B. M. t. 5154.
 — *Fothergillii*. ½. Orange. April. Falkland Isles. 1777. B. M. t. 348.
 — *Herbertiana*. B. R. t. 1313. See *C. racemosa*.
 — *Kayii*. Tall. Yellow. Gard. Chron. 1882, vol. 17, p. 828.
 — *lobata*. ¾. Yellow, spotted with purple-red. Peru. 1877. Half hardy. B. M. t. 6330.
 — *Pavonii*. 2. Yellow. July. Peru. B. M. t. 4525.
 — *petiolaris*. 3. Yellow. Chili. 1824. Biennial. Syn., *C. connata*.
 — *pinna'ta*. 2. Yellow. July. Peru. 1773. Annual.
 — *plantaginea*. 1. Yellow. August. Chili. 1827. B. M. t. 2805.
 — *polyfolia*. 1. Yellow. July. Chili. 1827. B. M. t. 2897.
 — *purpurea*. 1. Purple. July. Chili. 1827. B. M. t. 2775.
 — *purpurea elegans*. 1. Pale purple. June. Chili. 1832.
 — — *pi'cta*. 1. White, purple. June. Chili. 1832.
 — *racemosa*. ½. Yellow. June. Chili. 1828. Syn., *C. Herbertiana*.
 — *sua'ris*. 1. Purple. Chili.
 — *tenu'la*. ¾. Yellow. 1873. Hardy. B. M. t. 6231.

SHRUBBY EVERGREENS.

- C. alba*. 1½. White. June. Chili. 1844. B. M. t. 4157.
 — *andina*. 2. Yellow. April. Valparaiso. 1836. Syn., *C. Herbertiana parviflora*. B. R. t. 1576.
 — *angustiflora*. B. M. t. 3094. See *C. verticillata*.
 — *adscendens*. 1. Yellow. July. Cordilleras. 1826. B. R. t. 1215. Syns., *C. crenata*. (B. R. t. 790) and *C. rugosa* (B. R. t. 1588).
 — *bicolor*. 2. Yellow. August. Peru. 1820. B. R. t. 1374. Syn., *C. diffusa*.
 — *conno'ta*. See *C. petiolaris*.
 — *crenatispora*. Yellow-spotted. July. Chili. 1831. Syns., *C. anomala* and *pendula*.
 — *denta'ta*. 2. Yellow. August. Chiloe. 1830. Syn., *C. chilensis*. B. R. t. 1476.
 — *diffusa*. See *C. bicolor*.
 — *ericoides*. 2. Yellow. Chili. 1853.
 — *floribunda*. B. R. t. 1214. See *C. petiolaris*.
 — *fuchsifolia*. 1 to 2. Yellow. Peru. Spring. 1878. Syn., *C. deflexa* of gardens. Garden, 1879, p. 258.
 — *Henrici*. 2. Yellow. Andes of Cuenca. 1865. B. M. t. 5772.
 — *Herbertiana parviflora*. See *C. andina*.
 — *hyssopifolia*. 2. Yellow, white. June. Quito. 1852. B. M. t. 5548.
 — *integrifolia*. See *C. rugosa*.
 — *Kelleya*. Orange, spotted reddish-brown. 1883.
 — *pendula*. Swt. Fl. Gard. ser. 2, t. 155. See *C. crenatispora*.
 — *petiolaris*. 1½. Pale yellow. September. Quito. 1843. Syns., *C. connata*, B. M. t. 2876, and *C. floribunda*.
 — *pisacome'nsis*. Orange-red. Peru. 1868.
 — *punctata*. 3. Purple, yellow. Chili. 1863.
 — *rugosa*. 2. Yellow. August. Chili. 1822. B. R. t. 744. Syn., *C. integrifolia*.

- C. rugosa angustifolia*. 2. Yellow. August. Chili. 1822.
 — — — *viscosissima*. 3. Yellow. August. Chili. 1832.
 — *scabioscefolia*. 2. Yellow. May. Chili. 1822. Trailer. B. M. t. 2405.
 — *sesilis*. 1½. Yellow. September. Valparaiso. 1832. B. R. t. 1629.
 — *Sinclairia*. 1-2. Lilac, spotted red-purple within. June. New Zealand. B. M. t. 6597.
 — *stricta*. 3. Yellow. September. Peru. 1852.
 — *tetragona*. Yellow. July. Peru. 1852.
 — *thyrsoiflora*. 1½. Yellow. June. Chili. 1827. B. M. t. 2915.
 — *violacea*. 2. Purple. June. Chili. 1853. B. M. t. 4929.

Calceolaria as a Florist's Flower.—*Propagation by Cuttings*.—

In August, immediately after flowering, and in March. In August, from a spent hotbed, remove the soil, and place six inches of dry coal-ashes or saw-dust. In spring, prepare a hotbed of leaves, or stable litter, a month before it is wanted, to allow the strong heat to subside; then cover it with the same depth of coal-ashes or saw-dust. Fill a sufficient number of pots, within an inch of the top, with light, sandy loam; fill up to the rim with silver-sand, and water gently, to settle the sand firmly. Take off the cuttings (the young tops are the best); cut off the bottom leaves, leaving two or three at the top; put them in the sand by the aid of a small, sharp-pointed stick, pressing the sand about them firmly. The herbaceous varieties should be placed rather thinly round the edge of the pot; the half-shrubby ones may be put in all over the pot, neatly, in rows; then give a gentle watering. Allow the water to dry off, and then plunge them into the hotbed, in the ashes or saw-dust, up to the rims of the pots, taking care that the heat is moderate. Shade for a week all the day; afterwards, only when the sun shines. If the sand becomes dry, water in the morning of a fine day; but very little water will be necessary. Remove all decaying leaves, or dead cuttings, as they occur. As soon as the cuttings are rooted, pot them off in the same kind of soil, and in 2½-inch pots, and set them on the surface of the same bed till they make fresh roots; then remove them into a shady part of the greenhouse for a week previously to re-potting.

By Seed.—Sow twice, as soon as the seed is ripe, and in early spring. Sow in wide, shallow seed-pans, rather thinly, and very slightly covered. A similar situation as for cuttings will answer; but, as soon as the seedlings are up, place them on a shelf, near the glass, in an airy greenhouse. When

they are large enough, pot them into 2½-inch pots, singly, and keep re-potting, as they require it, till they are in 6-inch pots; then allow them to flower; and such as are of a good form, bright, distinct colours, and a fair size, re-pot again, and keep them to propagate by cuttings; but all others either throw away or plant them out to ornament the flower-borders till the frost kills them.

To save Seed.—Impregnation is necessary in order to produce good seed and to produce variety. Choose the pollen from a bright-coloured, clear-spotted variety, and apply it to the best-formed ones destined to bear the seed—the male parent for colour, and the female for shape.

Soil.—Light, sandy, yellow loam, two bushels; leaf-mould, half a bushel, much-decayed cow-dung, one peck; mix thoroughly, and use in a moderately dry state. If the loam is not sandy naturally, add as much sifted river-sand as will make it so.

Summer Culture.—Commence potting as early in spring as possible; autumn-struck cuttings early in March; and the spring-struck as soon as they are fit. Old stools never make such fine specimens as cuttings: they had better be thrown away as soon as they have yielded a crop of cuttings. Drain plentifully with broken potsherds, using a greater quantity every time. Re-pot about three times, and leave the plants, at last, in 11-inch pots to bloom. No flower-stems should be allowed to remain until the plants have attained their full growth. Keep them as near the glass as possible, in a light, airy greenhouse. After the last potting, the plants should present a healthy appearance, with large, broad leaves, of a dark-green colour. The flower-stems may now be allowed to grow: each should be tied to a neat, small, green stick. Place the sticks so as to slope outwards, to allow room for the heads to bloom. Plenty of air should be given, to cause a stout growth. They should be in perfection early in July. Each plant will be then two feet high, and as much in diameter. They will be fine objects either for the greenhouse, when few other things are in bloom, or for exhibition purposes.

Winter Culture.—As soon as the flowers are all dead (if no seed is required), the stems ought to be cut down, and the plants either removed out of doors, or, still better, into a cold pit. Plenty of air should be given on all favourable occasions; and, as soon

as the frost of winter begins to appear, remove them into the greenhouse, place them as near the glass as possible, and keep them there till the time of propagation arrives. Take off the cuttings then, and throw the old stools away.

Forcing.—On account of their impatience of heat, Calceolarias, excepting a few shrubby ones, do not force well. These may be re-potted in January, and put into a heat of 55° to 60°. Give water moderately, and allow the flower-stems to grow from the first. They will then flower in April and May.

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.

Calceolarias for bedding-out should be propagated in the autumn, and kept in the cutting-pots through the winter. Pot them singly in the spring, place them in a cold frame, and gradually harden them off by May. Then plant them out in a rich, light soil, where they are to flower.

Calda'sia. See Bonplandia.

C. heterophylla. See *B. geminiflora*.

Caldcluvia. (Named after A. Caldclough, F.R.S., who collected botanical specimens in Chili. Nat. ord., *Saxifragæ*; Tribe, *Cunoniæ*. Allied to *Cunonia*.)

The principal character of this and other *Cunoniæ* is the leaves growing opposite, with stipules between the leaf-stalks. The panicles of little white flowers have a pretty appearance. Greenhouse evergreen shrubs; cuttings of half-ripened wood in sand, under glass, and a little bottom-heat; peat and loam.

C. paniculata. White. June. Australia. 1831.

Ca'lea. (From *kalos*, beautiful; referring to the flowers. Nat. ord., *Compositæ*; Tribe, *Helianthoidæ*. Allied to *Galinsoga*. Syn., *Caleacte*.)

Stove evergreen shrubs; seed in March; side-

shoots strike freely at any time, in sand, and placed in bottom-heat, under a glass.

C. jamaicensis. 3. Purple. June. Jamaica.

1739. Syn., *C. cordifolia*.

— *lobata.* B. M. t. 1734. See *Neuroleena lobata*.

— *pinnatifida.* Yellow. June. Brazil. 1816.

— *scoparia.* See *Baccharis scoparia*.

— *solidaginea.* 4. Caraccas. 1817.

— *urticifolia.* 2. Yellow. July. Vera Cruz.

1740. Syn., *Solidago urticifolia*.

Caleacte. See *Ca'lea*.

Caleana. (Named after G. Caley, superintendent of the Botanical Garden, St. Vincent. Nat. ord., *Orchidacæ*; Tribe, *Neottiæ*; sub. tr. *Diurideæ*.) Syn., *Caleya*.

Greenhouse terrestrial orchids; division of the plants; fibry peat, lumpy loam, and a little charcoal, well drained.

C. major. Green, brown. June. N. S. Wales.

1810. Fl. Tasm. t. 107.

— *minor.* Green, brown. June. N. Holland.

1822.

— *nigrita.* Dark. Swan River.

Calectasia. (From *kalos*, beautiful, and *stachys*, a spike. *Calectasias* are branched herbs, with dry, permanent, starry flowers, of a bright violet. Nat. ord., *Juncacæ*. Allied to *Bacteria*.)

Greenhouse herbaceous perennial; divisions; peat and loam.

C. cyanæa. Blue. June. Australia. 1840.

B. M. t. 3834.

Cale'ndula. Marigold. (From *calendæ*, the first day of the month; its flowers produced almost all the year round. Nat. ord., *Compositæ*; Tribe, *Calendulacæ*.)

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. arborescens. Jacq. Ic. t. 596. See *Tripteris arborescens*.

— *chrysanthemifolia.* B. M. t. 2218. See

Dimorphotheca chrysanthemifolia.

— *denticulata.* 1½. Yellow. May. Cape of

Good Hope. 1790. Syn., *C. dentata*.

— *flaccida.* See *Dimorphotheca Tragus*, var.

flaccida.

— *fruticosa.* See *Dimorphotheca fruticosa*.

— *muricata.* See *Tripteris arborescens*.

— *oppositifolia.* See *Dimorphotheca oppositifolia*.

— *suffruticosa.* 1. Yellow. December. Cape

of Good Hope. 1823.

— *Tragus.* See *Dimorphotheca Tragus*.

— *viscosa.* See *Dimorphotheca Tragus*.

HARDY ANNUALS.

C. ægyptiaca. Yellow. Egypt.

— *arvensis.* 2. Yellow. June. 1597.

— *asterius.* 1½. Yellow. August. Europe. 1838.

— *Dalgerium.* See *C. marginata*.

— *gracilis.* Yellow. June. Persia. 1836.

— *graminifolia.* See *Dimorphotheca graminifolia*.

graminifolia.

— *hispanica.* See *C. marginata*.

— *hybrida.* See *Dimorphotheca pluvialis*.

— *incana.* 1½. Yellow. July. Barbary. 1796.

— *maderensis.* 2. Orange. Madeira. 1795.

- C. marginata*. Yellow. Gibraltar. Syns., *C. Dalgesirum* and *hispanica*.
 — *nudicaulis*. See *Dimorphotheca nudicaulis*.
 — *officinalis*. 2. Orange. June. South of Europe. 1573. B. M. t. 3204. Common Marigold.
 — *floroplena*. 3. Orange. June.
 — *prolifera*. The central head is surrounded by several smaller ones.
 — *persica*. Yellow. June. Persia. 1830.
 — *pluvialis*. See *Dimorphotheca pluvialis*.
 — *sacata*. 2. Yellow. June. Levant. 1731.
 — *sicula*. 1. Yellow. June. Sicily. 1816.
 — *stellata*. 2. Yellow. July. Barbary. 1796.

Cale'ya. See *Caleana*.

Calico-bush. *Ka'mia latifolia*.

Californian Maybush. *Photinia arbutifolia*.

Californian Pepper-tree. *Schinus mollis*.

Californian Poppy. *Platystemon californicum*.

Caline'a sca'ndens. See *Dolioscarpus Calinea*.

Calime'ris. (From *calyx*, a cup, and *meris*, part; referring to the involucre. Nat. ord., *Compositæ*; Tribe, *Asteroidæ*.)

Hardy. Ordinary garden-soil. Seeds, division.

C. Albe'rti. 2. Lilac-purple. Turkestan. 1884. Perennial. Gd. t. 1152, f. 2.

Caliphru'ria. (Derivation not explained. Nat. ord., *Amaryllidææ*. Allied to *Eurycles*.)

Pretty greenhouse bulbs, flowering, when not in leaf, like the Guernsey lily. Offsets; sandy loam and a little peat. They may also be grown in a cold pit, or a warm border, and protected during winter.

C. Hartwegia'na. 1. White. July. Columbia. 1843. B. M. t. 6259.

— *Herbertia'na*.

— *subdentata*. See *Eucharis subdentata*.

Calisaya-bark. *Cincho'na calisaya*.

Ca'lla. (From *kalos*, beautiful. Nat. ord., *Aroidææ*; Tribe, *Caliceæ*.)

Hardy aquatic division; rich loam and peat. Useful for shallow ponds, etc.

C. aethiopia'ca. B. M. t. 832. See *Richardia aethiopia'ca*.

— *aromat'ica*. B. M. t. 2279. See *Homalomena aromatica*.

— *occulta*. B. C. t. 12. See *Homalomena aromatica*.

— *palm'stris*. $\frac{1}{2}$. White. July. N. Amer. 1768. Perennial aquatic. B. M. t. 1831.

— *pertusa*. 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., *Leguminosææ*; Tribe, *Ingeææ*. Allied to *Inga*.)

Stove evergreen shrubs; cuttings of rather

firm young wood in sand, under a glass, in heat; peat and loam.

C. bre'vipes. 5. Pink. October. Brazil.

— *diadema'ta*. Lem. Jard. Fl. vol. 3, t. 305.

Syn., *C. bicolor*.

— *formosa*. 10. White. Mexico. 1825.

— *gracilis*. Yellowish-white. Columbia. 1870.

Ref. Bot. t. 294.

— *hæmatocephala*. 30. Crimson. February.

Mauritius. B. M. t. 5181.

— *Harri'sii*. 20. Rose. Brazil. 1845. B. M.

t. 4238.

— *portoricensis*. 6. White. July. W. Indies.

1824.

— *quadrangul'ris*. 4. White. August. 1825.

— *Twoe'dii*. 6. Scarlet, crimson. Mexico.

1845. B. M. t. 4188.

Callica'rra. (From *kalos*, beautiful, and *carpos*, fruit; referring to the beautiful berries. Nat. ord., *Verbenacææ*; Tribe, *Viticææ*. Allied to *Petreæa*.)

The leaves of *C. lanata* 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.

C. america'na. 6. Red. June. N. Amer. 1724. Greenhouse deciduous shrub. Syn.,

Johnsonia americana.

— *arbo'rea*. 12. Purple. August. E. Ind. 1820.

— *ca'na*. 3. Purple. E. Ind. 1799. B. M. t. 2107.

— *ferrugi'nea*. 2. Blue. June. Jamaica. 1794.

— *incana*. 4. Red. July. E. Ind. 1800.

— *integrifolia*. See *Egiphila arborescens*.

— *japo'nica*. 3. Pink. August. Japan. 1861.

Pax. Fl. G. vol. 2, p. 165.

— *lanata*. 4. Purple. June. E. Ind. 1788.

— *longifolia*. 3. White. April. China. 1825.

— *lanceolata*. 4. Purple. July. E. Ind. 1822.

— *subglabra'ta*. White, edged with pink.

March. Syn., *C. longifolia*, B. R. t. 864.

— *macrophy'lla*. 6. Pink. India. 1808.

— *purpura'ea*. 3. Purple. July. E. Ind. 1822.

Fl. Ser. t. 1359.

— *reticulata*. 2. Red. July. Jamaica. 1820.

— *rubella*. 2. Red. May. China. 1822. B. R.

t. 883.

Callichro'a. (From *kalos*, beautiful, and *chroa*, colour; referring to the bright yellow colour of the flowers. Nat. ord., *Compositææ*.) See *Layia*.

C. platygi'ssa. B. M. t. 3719. See *L. platyglossa*.

Callico'ma. (From *kalos*, beautiful, and *coma*, hair; in reference to the tufted heads of its yellow flowers. Nat. ord., *Saxifragææ*. Allied to *Weinmannia*.)

Greenhouse evergreen shrub; cuttings of half-ripened wood, under a bell-glass, in sandy peat.

C. serratifolia. 4. Yellow. June. N. S. Wales.

1793. B. M. t. 1811.

Calligonum. (From *kalos*, beautiful, and *gonum*, a joint; in reference to its leafless joints. Nat. ord., *Polygonacææ*; 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. Pall'asia. 4. Green, white. May. Caspian Sea. 1780.

posed 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 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 *kallos*, beauty, and *tharuma*, a wonder; in reference to the wonderful green colour of the flowers. Nat. ord., *Amaryllidaceæ*.) See **Stenomesson**.

C. angustifolium. B. M. t. 3866 b. See *S. viridiflorum*, var. *angustifolium*.

— *viridiflorum.* B. M. t. 3866 a. See *S. viridiflorum*.

— *Elwesii.* See *S. viridiflorum*, var. *Elwesii*.

Calli'tris. (From *kalos*, beautiful; referring to the whole plant. Nat. ord., *Coniferæ*; Tribe, *Cupressineæ*. Allied to Thuja.) Syn., *Frenela*.

The wood of *C. quadrivalvis* 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.

C. cupressiformis. 20. N. Holland. 1826.

Syns., *C. arenosa*, *C. rhomboidea*, and *Frenela rhomboidea*.

— *quadrivalvis.* 20. September. Barbary. 1815.

— *triquetra.* April. Cape of Good Hope. 1820.

Callixe'ne. (From *kallos*, beautiful, and *zenos*, a stranger; being first discovered on the inhospitable shore so unlikely to have such a plant—Magellan's Land. Nat. ord., *Liliaceæ*.) See **Luzuriaga**.

Half-hardy, evergreen, climbing shrub. Cool greenhouse. Light loam. Division.

C. polyphylla. B. M. t. 5192. See *L. erecta*.

Callu'na. Ling. (From *kalluno*, to adorn; in reference both to the beauty of the Ling, and to its use as a scrubbing-brush or broom. Nat. ord., *Ericaceæ*.)

Callu'na vulgaris, amongst the common Ling (Eng. Bot. ed. 3, t. 894), and all its varieties, are the best bee-flowers of our native Flora. The *C. vulgaris* is a native of many parts of the British Islands, and its flowers are purple, opening in April; but there are the double-blossomed, the white, the scarlet, the red, the decumbent, the spiked, the downy, and variegated varieties. See **ERICA**.

C. vulgaris alba na'na. White. Flowers solitary on the weaker branches.

— *au'rea.* White. Leaves yellowish. Loose growing.

— *coccinea.* Violet. Spreading.

— *globosa.* Flowers solitary, rosy-like. Spreading.

— *rigida.* White. Dwarf, compact.

— *tenuifolia alba.* Flowers 2-ranked.

Callus. A cushion of tissue formed over a wound in a plant, such as when a limb of a tree has been cut off. Its peculiarity consists in being developed from cells which had ceased to grow, but which are stimulated by the injury to renew their growth.

Calochi'lus. (From *kalos*, beautiful, and *cheilos*, a lip; referring to the beauty of the labellum, or lip. Nat. ord., *Orchidææ*; Tribe, *Neottieæ*. Allied to *Listera* and *Neottia*.)

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.

C. campystris. 3. Green, brown. April to June. Queensland. 1824. B. M. t. 3187.

Syn., *C. herbaceus*.

— *paludosus.* 3. Brownish. May. New South Wales. 1823.

Calochortus. (From *kalos*, beautiful, and *chortus*, grass; referring to the leaves. Nat. ord., *Liliaceæ*; Tribe, *Tulipææ*. Allied to the Tulip and *Fritillaria*.) Syn., *Cyclobothra*.

The gayest of our hardy or half-hardy bulbs, introduced by the unfortunate and intrepid Douglas from Colombia. Half-hardy bulbs. Offsets; sandy loam and peat, in equal proportions. If planted out, the bulbs should be taken up, dried and replanted before winter; if in pots, keep in a cold pit, and pot afresh when the bulbs begin to grow.

C. albus. 1. White. August. California.

1832. Syn., *Cyclobothra alba*.

— *barbatus.* 3. Yellow. August. Mexico.

1827. Syn., *Cyclobothra barbata*.

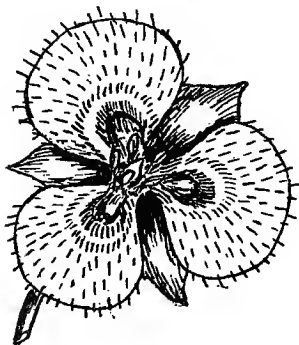
— *Benthami.* 1. Yellow. Red-brown. June. California. 1877. Syn., *C. elegans*, var. *lutea*.

— *cæruleus.* 1. Lilac, dotted with dark blue. July. Sierra Nevada.

— *elegans.* 3. Whitish, purple. June. California. 1826. B. M. t. 5976 is *C. Maweianus*.

— *Gunnisoni.* Lilac, yellowish. Rocky Mountains.

C. Gunnisoni Krela'gii. Yellow, white, green, black. California. 1873.



- *Howeii*. White, brown. Summer. Oregon. 1890.
- *lilacinus*. 3. Lilac, purplish. California. 1868. Syn., *C. uniflorus* of some gardens, and *C. umbellatus*, B. M. t. 5804.
- *longibarbatius*. 1. Pale purple with darker stripes. July. Oregon. 1890.
- *lutus*. 1. Yellow-spotted. September. California. 1881. B. R. t. 1567.
- *oculatus*. Bright yellow, with an eye inside each petal.
- *macrocarpus*. 2. Purple. August. California. 1826. B. R. t. 1152.
- *madrensis*. Orange-yellow. September. 1890.
- *Maveaenus*. 1. White, purplish. California. Syn., *C. elegans*, B. M. t. 5976.
- *monophyllus*. 2. Bright yellow. California. 1848. Syn., *Cyclobotbra monophylla*.
- *nitidus*. 2. Purple. August. California. 1826.
- *Nuttallii*. 3. White, purple. California. 1869. Syn., *C. Leichtlinii*. B. M. t. 5862.
- *obispoensis*. 1.2. Orange, purple, greenish. California. 1889.
- *pa'llidus*. 1. Brown. Mexico. 1850.
- *pulchellus*. 1. Yellow. Summer. California. 1882. Syn., *Cyclobotbra pulchella*, B. R. t. 1662.
- *parviflorus*. Yellow. California 1875.
- *purpureus*. 3. Purple, green. August. Mexico. 1827. Syn., *Cyclobotbra purpurea*, Swt. Fl. Gard. ser. 2, t. 20.
- *splen'dens*. 1. White-spotted. August. California. 1882. Syn., *C. Roezlii*.
- *uniflorus*. 2. Pink. Santa Cruz. 1868.
- *venustus*. 1. Lilac. August. California. 1836. B. R. t. 1669.
- *brachysepalus*. White, yellow, red, brown. California. 1876.
- *lilacinus*. 1. Lilac, red-brown, yellow. California. 1877.
- *purpureus*. 1. Purple-lilac, red-brown, yellow. California. 1877.
- *Weedii*. 1. Yellow. Summer. California. 1875. Syn., *C. citrinus*.

Calode'ndron. (From *kalos*, beautiful, and *dendron*, a tree. Nat. ord., *Rutaceae*. 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 shrub. Cuttings of half-ripened wood in sand, under a

bell-glass, and with a little bottom-heat; sandy loam.

C. cape'nsis. 40. Pink. Cape of Good Hope. 1789. Gf. 1884, p. 210.

Calodra'con. (From *kalos*, beautiful, and *dracon*, a dragon; intimating that it is a very handsome *Dracaena*, or Dragon Tree. Nat. ord., *Liliaceae*.) Now referred to **Cordylinae**.

Greenhouse evergreen. For cultivation, see DRACÆNA.

C. nobilis. Japan. 1852. Fl. Ser. tt. 682, 683.

Calony'ction. See *Ipomœa*.

Calope'talon. (From *kalos*, beautiful, and *petalon*, a petal. Nat. ord., *Pittosporaceae*.) This genus is united by Bentham and Hooker to **Marianthus**, from which it differs in having a 3-celled ovary and dilated filaments.

Greenhouse evergreen climbers. See MARIANTHUS.

C. ringens. Golden-red. November. Swan River. B. M. t. 5233. Syn., *Marianthus ringens*.

Calopha'ca. (From *kalos*, beautiful, and *phake*, a lentil; in reference to the lentil-like flowers. Nat. ord., *Leguminosae*; Tribe, *Galegeae*. Allied to *Astragalus*.)

Loudon says of them, "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. grandiflora. Yellow. Russia. 1886. Gf. t. 1231.

-- *Howeii*. Yellow, shaded with red. Glandular. Russia. Gf. t. 287.

-- *wolga'rica*. 2. Yellow. Glandular. May. Siberia. 1786. Wats. Dendr. t. 83.

Calopha'nes. (From *kalos*, beautiful, and *phaino*, to appear. Nat. ord., *Acanthaceae*. Allied to *Ruellia*.)

Hardy herbaceous perennial. Dividing the roots in March; loam and peat, or sandy loam.

C. oblongifolia. 1. Blue, lower lobe marked with purple spots. August. Carolina. 1832. Swt. Fl. Gard. ser. 2, t. 181.

Calophyllum. (From *kalos*, beautiful, and *phyllon*, a leaf. Nat. ord., *Guttiferæ*.)

Stove evergreen trees; cuttings of half-ripened shoots in sand, under a glass, and in bottom-heat; peat and loam.

C. Calaba. 30. White. India. 1780. Calaba-tree.

-- *Inophyllum*. 90. White. E. Ind. 1793. Wight.

 Ic. t. 77. Pinnay tree.

-- *spurium*. 80. White. Malabar. 1800.

-- *Tucamahaca*. 30. White. Bourbon. 1822.

Calo'pogon. (From *kalos*, beautiful, and *pogon*, a beard; in reference to the fringe on the lip, or labellum. Nat. ord., *Orchideae*; Tribe, *Neottieae*; Subtribe, *Arethuseae*. Allied to *Pogonia*.)

Greenhouse, or hardy orchids. Division of the tuberous roots; peat and loam.

- C. multiflorus*. Amethyst purple, lip with golden-yellow lamella. 1884.
 — *pulche'rlus*. 1½. Purple. July. N. Amer. 1771. Swt. Fl. Gard. t. 115. Syn., *Limodorum tuberosum*, B. M. t. 116.

Calosa'nthes. (From *kalos*, beautiful, and *anthos*, a flower. Nat. ord., *Bignoniaceæ*.)

This genus is established on a species taken from *Bignonia*.

- C. i'ndica*. 40. Purple. India. 1775. Wight Ic. t. 1337-8. Syn., *Bignonia indica*.

Calosco'rdum. (From *kalos*, beautiful, and *scordon*, garlic. Nat. ord., *Liliaceæ*; Tribe, *Alliææ*.) See **Nothoscordum**.

- C. nerine'storum*, B. R. 1847, t. 5. See *Nothoscordum nerine'storum*.

Caloste'mma. (From *kalos*, beautiful, and *stemma*, a crown. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllææ*. Allied to *Coburgia*.)

Greenhouse bulbs. Offsets; sandy loam and a little leaf-mould; a cold pit, or the greenhouse in winter.

- C. a'lbum*. 1. White. May. Gulf of Carpentaria. 1824.
 — *Cunningha'mi*. See *Eurycles Cunninghamsi*.
 — *lut'eum*. 1. Yellow. November. Queensland and New S. Wales. 1819. B. M. t. 2101.
 — *purpu'reum*. 1. Dark purple. November. S. Australia and New S. Wales, 1819. B. M. t. 2100.
 — *ca'rneum*. 1. Pale purple or white. Australia. 1837. B. R. 1840, t. 26. Syn., *C. carneum*.

Calotha'mnus. (From *kalos*, beautiful, and *thamnus*, a shrub. Nat. ord., *Myrtaceæ*. Allied to *Melaleuca*.)

Greenhouse evergreen shrubs, natives of Australia. Cuttings of young wood, firm at the base, in sand, under a bell-glass; sandy peat and fibry loam.

- C. clava'ta*. 2. Scarlet. July. 1824.
 — *gra'cilis*. 3. Scarlet. July. 1803.
 — *Kni'ghtii*. Blooms all year. 1839.
 — *quadri'fida*. 3. Scarlet. July. W. Australia. 1803. B. M. t. 1506.
 — *villo'sa*. 3. Scarlet. July. W. Australia. 1803. B. R. t. 1099.

Calo'tis. (From *kalos*, beautiful, and *ous*, an ear; in reference to the chaffy scales of the pappus, or seed-head. Nat. ord., *Compositææ*. Allied to *Bellium*.)

Greenhouse herbaceous perennial. Divisions; sandy loam.

- C. cuneifo'lia*. 1. Blue. June. Australia. 1819. B. R. t. 504.

Calotro'pis. (From *kalos*, beautiful, and *tropis*, a keel; referring to the flower. Nat. ord., *Asclepiadaceææ*. Allied to *Schnbertia*.)

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 hotbed, in March; cuttings of half-ripened shoots in sand, under a glass, in April;

good, common, fibry loam and leaf-soil and sand.

- C. giga'ntea*. 6 to 15. Rose, purple. August. India. 1690. B. R. t. 58.
 — *pro'cera*. 6. White. July. Persia. 1714. B. R. t. 1792.

Calpica'rpmum. (From *kalpis*, an urn, and *karpos*, fruit. Nat. ord., *Apo-cynaceææ*.)

For cultivation, see **KOPSIA**.

- C. albifo'rum*. White, crimson. Moluccas. 1864. Stove shrub.
 — *orna'tum*. Ceram.

Calpi'dia. See **Pisonia**.

Calpu'rnia. (After *T. Jul. C. Calpurnius*, a Sicilian. Nat. ord., *Leguminosææ*; Tribe, *Sophoreææ*.)

A small tree, with the habit, etc., of *Laburnum*.

- C. lasiogy'ne*. Yellow. Natal. 1890.

Ca'ltha. Marsh Marigold. (A contraction of *kalathos*, a goblet; referring to the form of the flower. Nat. ord., *Ranunculaceææ*; Tribe, *Helleboreææ*. Allied to *Hellebore*.)

Hardy herbaceous perennials. Seeds, or divisions, in March or April; common soil. A moist place, near a running stream, is where they flourish best.

- C. a'rtica*. Yellow. May. N. America. 1827.
 — *asari'fo'lia*. ½. Yellow. April. Unilas. 1824.
 — *bifo'ra*. See *C. palustris*, var. *bicolor*.
 — *flabellifo'lia*. 1. Yellow. April. N. Amer. 1818.
 — *Govenia'na*. North India. 1848.
 — *intege'rri'ma*. Yellow. May. N. Amer. 1827.
 — *leptose'pala*. 1. Yellow. May. N. Amer. 1827.
 — *mi'nor*. ½. Yellow. May. Britain.
 — *na'tans*. Yellow. May. Siberia. 1816.
 — *palu'stris*. 1. Yellow. April. Britain. Eng. Bot. ed. 3, t. 40. There are several double-flowered forms of this known as *fore-pleno*, *monstroso-pleno*, and *nano-pleno*, etc.
 — *bi'color*. ¾. White. June. N. Amer. 1827. Syn., *C. biflora*.
 — *parnassifo'lia*. ½. Yellow. April. N. Amer. 1815. Syn. *C. fscarioides*.
 — *purpu'ræ'ccens*. Shoots purplish. S. Europe.
 — *poly'peta'la*. Yellow. Caucasus. 1875.
 — *radi'cans*. ½. Yellow. April. Scotland.
 — *sagitta'ta*. ¾. Green, yellow. November. Cape Horn. 1840. B. M. t. 4056.

Caltrops. *Tri'bulus*.

Caltrops, Water. *Tra'pa na'tans*.

Calumba, False. *Cosci'nium fenestra'tum*.

Calumba Root. *Jateorrh'i'za Calu'mba*.

Calumba Wood. *Cosci'nium fenestra'tum*.

Calyca'nthus. Allspice. (From *calyx*, a calyx, and *anthos*, a flower; in reference to the coloured calyx. Nat. ord., *Calycanthaceææ*.)

The bark of *C. No'ridus*, from its aromatic fra-

grance, 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. fertilis*. B. R. t. 404. See *C. glaucus*.
 — *floridus*. 6. Brown. June. Carolina. 1726. B. M. t. 503.
 — — *asplenifolius*. 6. Brown. July.
 — — *ferax*. 6. Brown. July.
 — — *inodorus*. 6. Brown. July.
 — — *longifolius*. 6. Brown. July.
 — — *oblongus*.
 — — *ovatus*. 6. Brown. July.
 — — *variegatus*. 6. Brown. July.
 — *glaucus*. 6. Brown. May. Carolina. 1726. Syn., *C. fertilis*.
 — — *oblongifolius*. 4. Brown. May. N. Amer. 1820. Syn., *C. oblongifolius*.
 — *levigatus*. 3. Brown. June. N. Amer. 1806. B. M. t. 481.
 — *macrophyllus*. 6. California. 1848.
 — *oblongifolius*. See *C. glaucus*, var. *oblongifolius*.
 — *occidentalis*. 7½. Scarlet. September. California. 1831. B. M. t. 4808.
 — *pennsylvanicus*. 4. Brown. May. Pennsylvania. 1820.
 — *præcox*. See *Chimonanthus fragrans*.

Calycifloræ. That subdivision of Polypetalous Dicotyledons in which the corolla and stamens are inserted upon the calyx.

Calyciform. Resembling a calyx, e.g., the involucre of *Anemone hepatica* (see figure) and *Eranthis hiemalis*.



Calycophyllum. (From *kalyx*, calyx, and *phyllon*, a leaf; referring to a division of the calyx expanding into the form of a leaf. Nat. ord., *Rubiaceæ*; Tribe, *Cinchonæ*. Allied to *Bouvardia*.)

Stove evergreen shrub. Cuttings of half-ripe shoots in sand, under a bell-glass, in heat; loam, peat, and a little sand and charcoal.

C. candidissimum. 20. White. Cuba. 1830.

Calycothrix. See *Calythrix*.

Calyculate. Same as *Calyciform*.

Calyme'nia angustifolia. See *Oxybaphus angustifolius*.

Calypso. (From *kalypto*, to conceal; in reference to its place of growth

Nat. ord., *Orchideæ*; Tribe, *Epidendrea*. Allied to *Liparis*.)

Hardy terrestrial orchid. Offsets from the bulbs; sandy loam and peat. Open pit or frame, or close to the side of a wall in shade.

C. borealis. ½. Rose, brown. January. N. Amer. 1820. B. M. t. 2763. Syn., *C. americana*.

Calyptra'nthes. (From *kalyptra*, 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., *Myrtaceæ*. Allied to *Pimento*.)

The dried flower-buds of *C. aromaticus* are a good substitute for cloves. Stove evergreen trees. Layers and cuttings in heat; loam and peat.

C. caryophyllifolia. See *Eugenia*.

— *chytacula*. 12. White. April. Jamaica. 1778.

— *Jambalana*. See *Eugenia*.

— *syzygium*. 20. White. June. W. Ind. 1778.

Calyptra'ria. (From *kalyptra*, a veil; referring to the calyx. Nat. ord., *Melastomaceæ*.) This genus is reduced by Bentham and Hooker to *Centronia*.

Stove shrub. Cuttings under a bell-glass in heat. Soil, fibry loam, leaf-soil, and sand.

C. hæmanta. 4. Crimson. New Grenada. 1856. Fl. Ser. t. 924. Syn., *Centronia hæmantha*.

Calyptrion. (Nat. ord., *Violaceæ*.) See *Corynostyles*.

Calypthrocalyx. (From *kalyptra*, a veil, and *kalyx*, a cup. Nat. ord., *Palmææ*; Tribe, *Areceæ*.)

For culture, see *CALAMUS*.

C. spicatus. 12. Moluccas. Syns., *Areca globosa*, and *Pinanga globosa*.

Calyptrygy'ne. (From *kalyptra*, a veil, and *gyne*, a female. Nat. ord., *Palmææ*; Tribe, *Areceæ*.) Syn., *Calyptronoma*.

Handsome stove palms. Soil, strong loam, leaf-soil, and sand; requiring plenty of drainage. Seeds.

C. Ghiesbreghtiana. 2 to 5. Mexico. B. M. t. 5782. Syns., *Geonoma Ghiesbreghtiana*, *G. magnifica*, and *G. Verschaffeltii*.

— *spicigera*. 5. Guatemala.

— *Swartzii*. 50. Jamaica. 1878. Syn., *Calyptronoma Swartzii*.

— *teres*. British Guiana. 1882.

Calyptronoma. See *Calyptrygyne*.

Calystegia. Bearbind. (From *kalyx*, a calyx, and *stega*, a covering; in reference to the calyx being hidden by two bracts, as is the case with a section of Bindweeds. Nat. ord., *Convolvulaceæ*. Allied to *Convolvulus*.)

C. pubescens, 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 or by seeds. Common soil.

- C. Catechibiana*. Rose. July. Carolina. 1816. Twiner.
 — *dahurica*. $\frac{1}{2}$. Pink. July. Dahuria. 1823. Twiner. Fl. Ser. t. 1075.
 — *hederaea*. Rose. June. Nepaul. 1826. Half-hardy twiner.
 — *marginata*. 3. Pink. July. Australia. 1824. Twiner.
 — *pubeszens*. 15. Pale rose. June. China. 1844. Twiner.
 — *reniformis*. A synonym of *C. Soldanella*.
 — *sepium*. 6. White. July. Britain. Eng. Bot. ed. 3, t. 924. Common Bindweed. Syn., *Convolvulus sepium*.
 — *incarnata*. 6. Red. July. N. Amer.
 — *Soldanella*. Rosy-purple. June. Sandyshores of Britain. Evergreen trailer. Eng. Bot. ed. 3, t. 295. Sea Bindweed. Syn., *C. reniformis* and *Convolvulus soldanella*.
 — *spithamea*. 1. White. July. N. Amer. 1796. Twiner. Syn., *C. tomentosa*.
 — *sylvatica*. 18. White. July. Hungary. 1815. Twiner.

Cal'ytrix. (From *calyx*, a calyx, and *thrix*, hair; in reference to the divisions of the calyx ending in long, bristly hairs. Nat. ord., *Myrtaceæ*.) Syn., *Calycothrix*.

Beautiful little bushes, often not unlike Heaths, with the fragrance of the Myrtle. Greenhouse evergreen shrubs. Cuttings of points of shoots, in April or May, in sand, under a bell-glass

- C. angulata*. Yellow. May. Swan River. 1842.
 — *aurea*. Bright yellow. Swan River.
 — *brevifolia*. Pale lilac. May. Swan River. 1843.
 — *ericoides*. See *C. tetragona*.
 — *floribunda*. 4. White. N. Holland. 1820.
 — *glabra*. B. R. t. 409. See *C. tetragona*.
 — *glutinos*. Yellow, purple. May. Swan River.
 — *pubeszens*. See *C. tetragona*.
 — *sapphirina*. 2. Blue. May. Swan River. 1843.
 — *scabra*. See *C. tetragona*.
 — *tetragona*. 4. White. Anstralia. 1824. Syn., *C. brunivides*, *C. ericoides*, *C. glabra*, *C. pubescens*, *C. scabra*, and *C. virgata*, B. M. t. 3323.
 — *varia*. Lilac. May. Swan River. 1842
 — *virgata*. See *C. tetragona*.

Camari'dium. (From *camara*, an arched roof; in reference to the arched tip of the stigma. Nat. ord., *Orchideæ*; Tribe, *Vandee*; Sub-tribe, *Maxillarieæ*. Allied to *Maxillaria*.)

Stove orchids; division; shallow basket, or raised above the surface of the pots, with sphagnum and broken pots.

- C. album*. White. November. Trinidad. 1833. Syn., *Ornithidium album*. B. M. t. 3306.
 — *ochroleucum*. 1. White. Brazil. July. Trinidad. 1823. B. R. t. 844. Syn., *Cymbidium ochroleucum*, B. R. 4141.

Camaro'tis. (From *camarotos*, arched; the apex of the lip being arched. Nat. ord., *Orchideæ*; Tribe, *Vandee-Sarcanthee*.)

Stove orchid.

C. cochinchinensis. Yellow, brown. Cochinchina. 1877.

Cama'ssia. (From *Quamash*, so called by the North American Indians, who eat the bulbs. Nat. ord., *Liliaceæ*; Tribe, *Scilleæ*. Allied to *Scilla*, or *Squill*.)

Beautiful hardy bulbs; offsets and seeds, which may be sown when ripe; good border plants, common soil.

- C. Cusickii*. $1\frac{1}{2}$ -2. Purple. July. California.
 — *Engelmannii*. 1. Bright blue. Rocky Mountains. 1899.
 — *esculenta*. 2. Purple. July. Columbia. 1837. B. R. t. 1486.
 — *fo're al'bo*. $1\frac{1}{2}$. White. Columbia. 1826. Syn., *Scilla esculenta*, var. *flor'e albo*. B. M. t. 2774.
 — *Leichtlinii*. 2. Greenish-white. Spring. British Columbia. 1853. B. M. t. 6287. Syn., *Chlorogalum Leichtlinii*.—The White Camassia.
 — *Fraseri*. $1\frac{1}{2}$. Pale blue. May. Ohio and Texas. Syn., *Scilla esculenta*, B. M. t. 1574.—The Missouri Squill or Quamash, eaten by the Indians.

Cambessedesia. (Named after *James Cambessedes*, a botanical author. Nat. ord., *Melastomaceæ*.)

Charming herbaceous stove shrub, fibry peat, and sand. Cuttings of half-ripened shoots in heat under a bell-glass.

- C. paraguayensis*. $1\frac{1}{2}$. Rose red. July. Paraguay. 1874. First flowered 1881. B. M. t. 6604.

Cam'bium. That tissue which causes increase in diameter in the stems and roots of phanerogams, by the division of its cells to form other tissues. In Dicotyledons and Conifers it forms a ring, which develops wood on its inner, and bark on its outer, side.

Camellia. (Named after *Camellus*, a Moravian Jesuit. Nat. ord., *Fernströmiaceæ*.)

A good table-oil is extracted from the seeds of *C. Sasanqua*. 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. By bringing forward in a vinery they may be induced to flower at almost all seasons. Some of the sorts do well in sheltered spots in the open air, in southern counties.

- C. axillaris*. B. M. t. 2047. See *Gordonia anomala*. Syn., *Polyspora axillaris*, B. M. t. 4019.
 — *Donckelarii*. Crimson, marbled white.
 — *drupifera*. 10. White. May. China. 1818. Syn., *C. Kiess*, B. M. t. 1815.
 — *euryoides*. See *Thea maliflora*.
 — *Giuseppi'na Mercatelli*. White, with a few red stripes. Bull. Soc. Tosc. 1881, p. 299.
 — *japonica*. 10. Red. May. China. 1739.
 — *alba semiduplex*. 10. White. March. China. 1822.

- C. japonica Alberti*. Red. White. May. China. 1839.
 ——— *ela'ta*. Bright crimson. May.
 ——— *imbrica'ta*. 10. Crimson. March. China. 1824.
 ——— *pæoniæflo'ra a'lba*. 10. White. February. China. 1820.
 ——— *Pa'rksii*. 10. Bright rose. February. China.
 ——— *Reevesia'na*. 10. Crimson. September. China. 1829.
 ——— *ro'sea*. 10. Rose. February. China. 1821.
 ——— *Sabinia'na*. 10. White. February. China. 1824.
 ——— *specio'sa*. 10. Deep red. March. China. 1824.
 — *K'i'ssi*. See *C. drupifera*.
 — *maliflo'ra*. See *Thea maliflora*.
 — *oleifera*. See *C. Sasangua*.
 — *reticul'a*. 6. Red. April. China. 1824. B.M. t. 4976.
 — *fo're ple'no*. B. R. t. 1078. This double form was known twenty years before the single.
 — *rosæflo'ra*. 3. Pink. China.
 — *Sasa'ngua*. 4. White. February. China. 1811. B. M. t. 2080. Syn., *C. oleifera*.
 ——— *anemonæflo'ra*. Yellow, white. China. B. M. t. 5152.
 ——— *ple'na-a'lba*. 4. White. February. China. 1824.
 ——— *ple'na-ru'bra*. Red. February. China. 1818.
 ——— *se'mi-ple'na*. 4. Red. February. China. 1811.

Camellia Culture.—Propagation.

—*By Cuttings*. The double varieties do not grow nor flower so well on their own roots. Cultivators, therefore, propagate by cuttings the original single-flowered species, and when these plants become strong enough for the purpose, inarch or graft upon them the fine double varieties. The best time to put in these cuttings is when the new wood has become nearly ripe, which is generally about the end of June. Prepare, first, the pots, six inches wide, for the cuttings, by putting about an inch of broken potsherds in bottom, and another inch of pieces no larger than peas upon them; cover these with a thin layer of moss, and then fill the pots to the top with sandy loam, sifted pretty fine; press this firmly down, and fill the pot again quite up to the brim, making it very firm. Then take the cuttings of the single-flowering species; make them about four or five inches long; cut the bottom off smoothly and level just under a bud; then cut off two of the lowest leaves, leaving as many on the cutting. Make as many ready as will fill the first pot. As soon as they are ready, insert them into the soil thickly all over the pot; place them in a cold frame, or spent hotbed, and in two or three months they will nearly every one be rooted. Then pot them off singly in 3-inch pots, in peat and sandy loam, and replace them in the frame, where they may re-

main till winter approaches; then to be removed into the greenhouse, and have the usual treatment of the older plants. Let them have a little extra heat during the growing season; and most of them will be ready for grafting or inarching the following season.

By Grafting.—The time from September to February. The method called tongue-grafting is the best for Camellias. (See **Grafting**.) As soon as grafted, place them under hand-glasses upon a surface of coal ashes, in a deep pit or shady part of the greenhouse, to remain till the grafts have united to the stocks, and begin to grow; the hand-glasses may then be removed, and the plants gradually inured to the open air, and finally placed in the greenhouse, and receive the same culture as the other plants.

By Inarching.—The time for this mode of increasing the double varieties is just before the growing season, in April. Place the stocks in a warm place, to start them, and, as soon as this takes place, bring them into a position near to the variety intended to work upon. (See **Inarching**.) It is a more certain mode of increase than by grafting, and also more expeditious; but the plants are generally longer-stemmed, and do not make so neat a joint as by the former mode.

Soil.—A moderate, strong, turfy loam and sandy peat, in equal parts, will grow these plants well. Some growers use peat alone; but it is too light, and the plants do not thrive long in it.

Summer Culture.—The bloom will be over before summer commences. It will then be necessary to give the Camellia a little artificial heat, to encourage a free growth. A moist atmosphere, also, must be produced, by syringing the plants, walks, and walls every morning and evening, and keeping the floor deluged with water. Shade from bright sunshine, and give air, to reduce the temperature to 65° by day, and 55° by night. Continue this liberal treatment till the buds and the new leaves are fully formed; then give more air, and about the middle of July re-pot them, using plenty of drainage; and set them out of doors, behind a north wall, where the sun cannot reach them after 10 o'clock. There they may remain till the autumn.

Winter Culture.—As soon as there is the least fear of frost prepare for housing the plants for the winter. Cleanse and repair the house, wash the pots, and top-dress before arranging them in the

house. Give abundance of air, both night and day, when there is no frost; and when there is frost, only just use fire enough to keep it out. This treatment is proper till the blooming-season is over. *Water* must be judiciously applied; too much or too little will cause the buds to drop off prematurely.

Insects.—The *white scale* is the most troublesome insect. Strong soap-water will destroy it. The *black fly*, also, sometimes makes its appearance, and is very injurious to the flower-buds. That and the *green fly* may be destroyed in the usual way by smoking with tobacco. The black fly requires a stronger dose.

Diseases.—Sometimes young plants will die suddenly, and if the roots are examined, a brownness will be observed at the ends. This arises from stagnant water, caused by imperfect drainage. To prevent it, pay particular attention to that point.

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. 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.

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 to about six inches apart, and may remain thus until the following spring, then to be thinned and remain, or to be removed to the above-mentioned distance apart. 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.

Camera'ria. (After *Joachim Camerarius*, a botanical writer in the sixteenth century. Nat. ord., *Apocynaceæ*.)

C. du'bia. B. M. t. 1646. See *Wrightia*.
—*lu'tea.* See *Malonetia Tamaquarina*.

Camoe'nsia. (Named in honour of *Luis Camoens*, a celebrated Portuguese poet. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ*.)

A magnificent stove shrub, which has not yet flowered in this country (1891). It is the most striking and largest-flowered leguminous plant known; the flowers are nearly one foot long. Imported seeds sown in a hotbed; cuttings in sandy loam in bottom-heat and under a bell-glass. Rich loam and leaf-mould.

C. ma'xima. Cream-colour, yellow. Angola. 1878. Le Jard. 1887, p. 199.

Campa'nea. (From *campana*, a bell: alluding to the shape of the flowers. Nat. ord., *Gesneraceæ*.)

Stove herbaceous perennial. For cultivation, see *GESNERA*.

C. grandifl'ora. $\frac{3}{4}$. White, crimson. New Grenada. 1851.

Campa'nula. Bell Flower. (The diminutive of *campana*, a bell; literally, a little bell. Nat. ord., *Campanulaceæ*.)

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 West Indies, New Holland, and 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.

HARDY ANNUALS.

C. Broussonetia'na. 1. Blue. July. Mogador. 1825.

—*dicho'toma.* 1. Blue. July Sicily. 1820. Sibth. Fl. Gr. t. 211.

—*drabi'folia.* 1. Pale blue. June. Athens. 1823.

—*Eri'nus.* 1. Pale blue. July. South of Europe. 1768. Sibth. Fl. Gr. t. 214.

—*erinoi'des.* 1. Pale blue. July. Africa. 1823.

—*Hermi'nia.* 1. Blue. July. Portugal. 1823.

—*hispi'dula.* 1. Blue. July. Cape of Good Hope. 1817.

—*Læffli'ngia.* 1. Blue. July. South of Europe. 1818. B. R. 29, t. 19.

—*Lore'yi.* 2. Purple. June. Italy. 1824. B. M. t. 2581.

—*macrosty'la.* 1 to 2. Pale violet spotted lilac-purple. Summer. Taurus Mountains. 1877. Annual.

- C. punctata*. 1. White. May. Siberia. 1813. B. M. t. 1723.
 — *ramosissima*. 1. Blue. July. Greece. 1820. Sibth. Fl. Gr. t. 204.
 — *sylvestica*. 1½. Blue. June. Nepaul. 1840. Paxt. Mag. xii. p. 245.
- HARDY BIENNIALS.
- C. Ada'mi*. 1. Blue. July. Caucasus. 1821.
 — *affinis*. 2. Blue. July. South of Europe. 1824.
 — *americana*. 1. Blue. July. Pennsylvania. 1768.
 — *armena*. 1. Blue. July. Russia. 1826.
 — *bellidifolia*. 1. Blue. July. Pyrenees. 1823.
 — *betonicæfolia*. Sibth. Fl. Gr. t. 210. See *C. glomerata*.
 — *cervicaria*. 3. Light blue. July. Germany. 1808. B. C. t. 452.
 — *corymbosa*. 2. Blue. May. Crete. 1820.
 — *divegens*. 2. Blue. June. Hungary. 1814. Swt. Fl. Gard. ser. 2. t. 256. Syns., *C. Pentagonia* and *spathulata*.
 — *lanuginosa*. 2. Blue. May. 1814.
 — *macrophylla*. White. July. Caucasus. B. M. t. 912.
 — *macrostachya*. 2. Blue. June Hungary. 1814.
 — *medium*. 4. Blue. July. Germany. 1597.
 — *floræ-albopleno*. 3. White. July. Germany.
 — *album*. 3. White. July.
 — *floræ-purpureæ-pleno*. 3. Purple. July. Germany.
 — *purpurea*. Purple. July. Germany.
 — *neglecta*. 2. Blue. June. 1813.
 — *obliqua*. 3. Blue. June. 1813. Jacq. H. Schenb. t. 336.
 — *parviflora*. 2. Blue. June. Iberia. 1819.
 — *Pentagonia*. B. R. t. 56. See *C. divergens*.
 — *peregrina*. 2. Blue. June. Cape of Good Hope. 1794. Jacq. H. Schenb. t. 337.
 — *primulæfolia*. 3. Purple. July. S. Europe. B. M. t. 4879.
 — *sibirica*. 1. Blue. July. Siberia. 1783. B. M. t. 659.
 — *spicata*. 1. Blue. July. Switzerland. 1786.
 — *stricta*. 2. Blue. June. Syria. 1819.
 — *thyrsoides*. 2. Cream. June. Switzerland. 1785. B. M. t. 1290.
 — *violæfolia*. 1. Blue. July. Siberia. 1817.
- HARDY PERENNIALS.
- C. acuminata*. 3. Blue. August. N. Amer. 1826.
 — *aggregata*. 2. Blue. August. Bavaria. 1817. B. C. t. 505.
 — *albiværfolia*. 1. Blue. July. Caucasus. 1803. B. M. t. 912.
 — *Allionii*. 1. Blue. July. South of France. 1820.
 — *alpina*. 2. Blue. July. Switzerland. 1779. B. M. t. 957.
 — *angustifolia*. Blue. July. France. 1818.
 — *azulæa*. 2. Light blue. June. Switzerland. 1778. B. M. t. 551.
 — *barbata*. 2. Light blue. June. S. Europe. 1752. B. M. t. 1258.
 — *cyanæa*. 1. Blue. July. 1836. Swt. Fl. Gard. ser. 2. t. 409.
 — *Barrelieri*. See *C. fragilis*.
 — *Bellaïri*. 1. Blue. July. Italy. 1813.
 — *Biebersteiniana*. 1. Blue. June. Caucasus. 1820. Syn., *C. rupestris*.
 — *bononiensis*. 2. Blue. August. Europe. 1773.
 — *carolinæna*. Blue. August. N. America.
 — *cæspitosa*. 1. Blue. July. Austria. 1819.
 — *calycina*. 1. Blue. July. Tauria. 1820.
 — *capitata*. B. M. t. 811. See *C. lingulata*.
 — *carpa-thica*. 1. Blue. July. Carpathian Alps. 1774. Jacq. Vind. t. 57.
 — *alba*. ½. White. June. Gardens.
 — *pelviformis*. Lilac. August.
- C. carpa-thica turbinata*. ½. Deep purple.
 — *carpa-thica*. 1. Purple. July. Caucasus. 1804.
 — *cenisica*. 1. Blue. June. Switzerland. 1775.
 — *cephalanthia*. 1. Blue. August. Russia. 1817.
 — *cephalotes*. 1. Blue. June. 1818.
 — *cervicarioides*. 1. Blue. July. Italy. 1822.
 — *cichoræcea*. See *C. lingulata*.
 — *collina*. 1. Blue. July. Caucasus. 1803. B. M. t. 927.
 — *colorata*. 2. Purple. September. Sikkim Himalaya. 1849. B. M. t. 4555. Syn., *C. Moorcroftiana*.
 — *congesta*. 1. Blue. July. France. 1823.
 — *crenata*. 2. Blue. July. Russia. 1820.
 — *diffusa*. See *C. fragilis*.
 — *Elatine*. 1. Pale blue. July. South of Europe. 1823. Trailer.
 — *elegans*. 1. Pale blue. July. Siberia. 1811. Syn., *C. speciosa*.
 — *elliptica*. 1. Blue. July. Hungary. 1826.
 — *eriocarpa*. See *C. latifolia*, var. *eriocarpa*.
 — *excisa*. 1. Blue. June. Switzerland. 1820. B. C. t. 561.
 — *flexuosa*. See *C. Waldsteiniana*.
 — *foliosa*. 1. Blue. July. Italy. 1826.
 — *fragilis*. Blue. August. Alps. 1826. Half-hardy. Syns., *C. Barrelieri* and *diffusa*.
 — *hirsuta*. 1. Blue. August. Italy. 1833. B. R. t. 1738.
 — *garganica*. ½. Pale blue. July. Italy. 1830. B. R. t. 1768.
 — *hirsuta*. Leaves hairy.
 — *glomerata*. 2. Violet. May. Britain. Syn., *C. betonicæfolia*.
 — *dahurica*. Rich deep purple. Dwarf form. 1888.
 — *floræ-alba*. 1. White. May. Britain.
 — *plena-alba*. 1. White. May. Britain.
 — *floræ-plenæ-purpureæ*. 2. Pale purple. June. Gardens.
 — *speciosa*. B. R. t. 620.
 — *graminifolia*. 1. Blue. June. Hungary. 1817. Sibth. Fl. Gr. t. 206.
 — *grandis*. 3. Purple. August. Siberia. 1842. Half-hardy. Paxt. Mag. x. p. 31. Syn., *C. latiloba*.
 — *gummi-fera*. See *C. sarmatica*.
 — *Hendersoni*. Bright blue. 1881. Probably a hybrid.
 — *heterodoxa*. 1. Blue. June. Hungary. 1824.
 — *infundibulum*. 2. Purple. July. Siberia. 1825.
 — *infundibuliformis*. 2. Blue. July. Siberia. 1827. B. M. t. 2632.
 — *isophylla*. ½. Lilac-blue. August. Apennines. 1868. Syn., *C. floribunda*.
 — *alba*. White.
 — *laciniosa*. 2. Blue. June. Greece. 1788. Andr. Rep. t. 385.
 — *lactiflora*. 3. White or blue. August. Siberia. 1816. B. M. t. 1973.
 — *lamifolia*. 3. Pale yellow. June. Iberia. 1823.
 — *lanceolata*. 1. Blue. July. France. 1819.
 — *latifolia*. 4. White. July. Britain. B. M. t. 2553.
 — *alba*. White. 1883.
 — *floræ-alba*. 3. White. July.
 — *eriocarpa*. Calyx hairy.
 — *macrantha*. Blue purple. August. Russia. 1822. B. M. t. 3347.
 — *lingulata*. 1. Violet. July. Hungary. 1804. Syns., *C. capitata* and *cichoræcea*.
 — *linifolia*. 1. Blue. July. Switzerland. 1819. B. C. t. 1267.
 — *longifolia*. 4. Blue. July. Pyrenees. 1820.
 — *lyrata*. 2. Violet. July. South of Europe. 1823.
 — *macrantha*. B. M. t. 3347. A variety of *C. latifolia*.
 — *microphylla*. 1. Blue. June. Hungary. 1820.

- C. Moorcroftia* 'na. See *C. colorata*.
 — *mura'lis*. See *C. Portenschlagiana*.
 — *negle'cta*. See *C. rapunculoides*.
 — *nicæe'nsis*. 1. Purple. June. Piedmont. 1820.
 — *ni'tida*. See *C. plantiflora*.
 — *cæru'lea*. 1. Blue. July. N. Amer. 1781.
 — *fl'o're-cæru'leo-ple'no*. 3. Blue. July. — *no'bilis*. 4. Pale purple. July. China. 1844. Fl. Ser. t. 247.
 — *a'ba*. White. Fl. Ser. t. 563.
 — *Nutta'lii*. 1. Blue. July. N. Amer. 1829.
 — *obliquif'o'lia*. 3. Blue. July. Italy. 1823.
 — *pa'tula*. 1. Violet. July. Europe.
 — *persicif'o'lia*. 3. Blue. July. Europe. 1596. B. M. t. 397.
 — *a'ba*. 3. White. July. Europe. 1596.
 — *a'ba-ple'na*. 3. White. July. Europe. 1596.
 — *corona'ta*. Calyx petaloid, blue. Fl. Ser. t. 699.
 — *gra'ndis*. 3. Blue. July. Europe. 1596.
 — *ma'xima*. 3. Blue. July. Europe. 1596.
 — *ple'na*. 3. Blue. July. Europe. 1596.
 — *planif'o'ra*. 2. Blue. August. N. America? 1817. Syn., *C. nitida*.
 — *fl'o're-a'ba-ple'no*. 3. White. July.
 — *Portenschlagia'na*. 3. Purple, blue. June to July. S. Europe. Syn., *C. muralis*.
 — *prismato'carpus*. White. S. Africa. 1787. B. M. t. 2733.
 — *pube'scens*. 1. Blue. July. Bohemia.
 — *pu'la*. 1. Blue. June. Austria. 1779. B. M. t. 2492.
 — *a'ba*. White.
 — *pu'mila*. 1. Blue. July. Switzerland. B. M. t. 512.
 — *pus'i'la*. 1. Blue. June. Switzerland. 1821.
 — *a'ba*. White. 1882.
 — *pyramida'lis*. 4. Blue. July. Carniola. 1594.
 — *fl'o're-a'ba*. 4. White. July. Europe.
 — *quadri'fida*. 1. Blue. June. N. Holland. 1820.
 — *Rainè'ri*. 1. Blue. July. Italy. 1826.
 — *rapunculoides*. 3. Blue. June. England. Eng. Bot. ed. 3. t. 869. Syn., *C. neglecta*.
 — *rapu'neus*. 3. Blue. July. Britain.
 — *rhomboida'lis*. 2. Blue. July. Switzerland. 1775. B. C. t. 603.
 — *ru'bra*. 1. Reddish-lilac. July. Switzerland.
 — *rige'scens*. 1. Blue. June. Siberia. 1820.
 — *Roe'zii*. 2. Blue. Rocky Mountains. 1873.
 — *rotundif'o'lia*. 3. Blue. June. Britain. Syn., *C. Hostii*.
 — *fl'o're-a'ba*. 1. White. June. Britain.
 — *fl'o're-ple'no*. 3. Blue. July. Gardens.
 — *Scheuze'ri*. 1882.
 — *rupe'stris*. See *C. Biebersteiniana*.
 — *ruthè'nica*. 2. Blue. June. Caucasus. 1815. B. M. t. 2653.
 — *sarma'tica*. 2. Blue. June. Siberia. 1803. B. M. t. 2019. Syn., *C. gummi'fera*.
 — *saxa'tilis*. 1. Blue. May. Candia. 1768.
 — *Scheuchze'ri*. 1. Blue. July. Europe. 1813. B. C. t. 485.
 — *si'mplex*. 3. Blue. July. South of France. 1819.
 — *soldanella'no'ra ple'na*. Purplish. 1870.
 — *spe'culum*. Purple. Summer. Greece. B. M. t. 102.
 — *specio'sa*. B. M. t. 2649. See *C. elegans*.
 — *spre'ta*. ? Blue. July. Siberia. 1820.
 — *Teno'rii*. 2. Blue. June. Naples.
 — *tenuif'o'lia*. 1. Violet. July. Hungary. 1817.
 — *toment'o'sa*. 1. White. June. Levant. 1810.

- C. Tommasinia* 'na. 3-1. Pale blue. August. Istria. B. M. t. 6590.
 — *Trachelium*. 4. Blue. June. Britain.
 — *a'ba*. 3. White. July. Britain.
 — *a'ba-ple'na*. 3. White. July. Britain.
 — *ple'na*. 3. Blue. July. Britain.
 — *tracheloides*. 3. Blue. July. Caucasus. 1817.
 — *fl'o're-purpu'rea-ple'na*. 3. Purple. July.
 — *trichocalyci'na*. 4. Blue. July. Italy. 1823.
 — *tridenta'ta*. Blue. Asia Minor.
 — *saxifraga*. Violet. Caucasus. 1875.
 — *turbina'ta*. 3. Purple. Mountains of Transylvania. 1868.
 — *a'ba*. Mauve. September.
 — *Dicks'o'ni*. White.
 — *urticif'o'lia*. 3. Blue. August. Germany. 1800.
 — *fl'o're-ple'na*. White. July. Germany.
 — *Vandè'si*. 1. Cream. June.
 — *Van Hou'ttei*. Blue. 1863. Hybrid. Syn., *C. hybrida*.
 — *veluti'na*. 1. Blue. May. South of Europe. 1826.
 — *vers'i'color*. 4. Striped. July. Siberia. 1788. Andr. Rep. t. 396.
 — *virga'ta*. 1. Blue. June. N. Amer. 1823.
 — *Waldsteinia'na*. 1. Blue. June. Hungary. 1824. Syn., *C. flexuosa*.
 — *Zo'ysii*. 1. Dark blue. June. Carniola. 1813. Jacq. Ic. t. 334.

GREENHOUSE.

- C. au'rea*. 3. Yellow. August. Madeira. Evergreen shrub. 1777. Jacq. H. Schönb. t. 472.
 — *angustif'o'lia*. 2. Yellow. August. Madeira. 1777.
 — *latif'o'lia*. 2. Yellow. August. Madeira. 1777.
 — *capè'nsis*. 1. Blue. July. Cape of Good Hope. 1803. Annual. B. M. t. 782.
 — *ce'rma*. 1. Blue. June. Cape of Good Hope. 1804. Biennial.
 — *dehi'scens*. 1. Blue. July. E. Ind. 1818. Annual.
 — *gra'cilis*. 1. Blue. June. N. S. Wales. 1794. Biennial. B. M. t. 691.
 — *litò'ra'lis*. 1. Blue. April. N. Holland. 1820. Biennial.
 — *mo'llis*. 1. Purple. June. Sicily. 1788. Herbaceous perennial. B. M. t. 404.
 — *Ottonia'na*. 1. Blue. July. Cape of Good Hope. 1825. Evergreen shrub.
 — *strigo'sa*. 3. Purple. Syria. 1858.
 — *Vida'lii*. 1. White. July. Azores. 1881. B. M. t. 4748.

EXCLUDED SPECIES.

- C. capilla'ris*. B. C. t. 1406, is *Wahlenbergia capillaris*.
 — *corona'ta*, B. R. t. 149, is *Adenophora marsu-piflora*.
 — *coronopif'o'lia* is *Adenophora coronopifolia*.
 — *elonga'ta* — *Wahlenbergia capensis*.
 — *Fische'ri* — *Adenophora liliiflora*.
 — *frutic'o'sa* — *Lightfootia subulata*.
 — *grandiflò'ra* — *Platycodon grandiflorus*.
 — *interme'dia* — *Adenophora Lamarckii*.
 — *interru'pta* — *Prismato'carpus interruptus*.
 — *Lama'rckii* — *Adenophora liliiflora*.
 — *lobeloides* — *Wahlenbergia lobeloides*.
 — *periskia'efo'lia* — *latifolia*.
 — *elonga'ta* — *periploia'efolia*.
 — *por'o'sa* — *Samolus Valerandi*.
 — *Rabelaisia'na* — *Adenophora Gmelini*.
 — *stilo'sa* — *stylosa*.
 — *tricuspid'a'ta* — *denticulata*.
 — *verticilla'ta* — *verticillata*.

Campanumæ'a. (A name altered from *Campanula*. Nat. ord., *Campanulaceæ*.)

Greenhouse herbaceous perennials, with tuberos rootstocks. Seeds, divisions. Rich sandy loam and a little peat.

C. javanica. Yellowish with red veins. Java, in moist woods. 1863. Climber. Syn., *Codonopsis cordata*. B. M. t. 5372.
— *lanceolata*. Climber. Green. N. China. 1861. Fl. Ser. t. 927.

Campe'lia. (From *kampe*, bending, and *helios*, the sun; in reference to the flowers bending round to the sun. Nat. ord., *Commelynaceæ*. Allied to *Tradescantia*.)

Stove herbaceous perennials; seeds in spring; rich loam; ordinary stove treatment.

C. zano'nia. 2. Blue. July. W. Ind. 1759. Leaves pubescent beneath. Syn., *C. mexicana*. Gfl. t. 833, and *Commelina zano'nia*. Red. Lil. t. 192.
— *glabra'ta*. Leaves glabrous. Costa Rica.

Camphor. A concrete volatile oil, obtained by dry distillation from *Cinnamomum Camphora* (formerly known as *Camphora officinarum*). It is obtained exclusively from Formosa and Japan. Borneo camphor is a product of *Dryobalanos aromatica*.

Camplosor'us, a synonym of *Antigramma*.

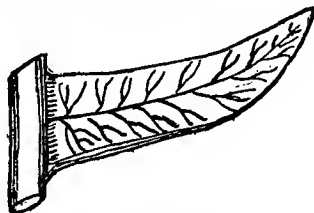
Campomane'sia. (Named after *Campomanes*, a Spanish naturalist. Nat. ord., *Myrtaceæ*. Allied to *Psidium*.)

Its yellow, sweet-scented fruit, called *patillo*, is eaten by the natives. Greenhouse evergreen shrub; cuttings of rather ripe shoots in sand, under a bell-glass.

C. lineatifolia. White. April. Peru. 1824.

Campsi'dium. See *Tecoma*.

Camp'teria. (Nat. ord., *Filices*.) This is now regarded as a section of the genus *Pteris*, characterized thus: Veins all free, except those of the last divisions, which are more or less connected near the base by arching veins.



C. biauri'ta. See *Pteris biaurita*.
— *memora'tis*. See *Pteris nemoralis*.

Ca'mptopus. (From *kamptos*, curved, and *pous*, a foot; on account of the downwardly curved flower stalk. Nat. ord., *Rubiaceæ*.)

An ornamental stove shrub. Cuttings in sandy

loam, in bottom-heat, under a hand-glass. Moist atmosphere.

C. Ma'nini. 15. White. Winter. Fernando Po. 1863. B. M. t. 5755.

Camptose'ma. (From *kamptos*, curved, and *sema*, standard; the standard has a curved appendage on both sides of the base. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*.)

Greenhouse climbers with handsome flowers, rich fibry loam and leaf-soil. Seeds and cuttings.

C. rubicundum. Bright red. S. Brazil. Climber. B. M. t. 4608.
— *splendens*. Scarlet. October. S. America? Syn., *Kennedyia splendens*, Paxt. Mag. vol. 3, p. 26.

Campyla'nthera elegans. See *Marianthus cæruleo-punctatus*.

Campyla'nthus. (From *kampylos*, a curve, and *anthos*, a flower. Nat. ord., *Scrophulariaceæ*. Allied to *Digitalis*.)

Greenhouse evergreen shrub; cuttings in sand, of half-ripened shoots, under a bell-glass; sandy peat and fibry loam.

C. repens. 1½. Tropical America. 1810.
— *salsoloides*. 1. Purple. March. Teneriffe. 1825.

Campy'lia. A section of the *Pelargoniums*.

Campylobo'trys. (From *kampylos*, a curve, and *botrys*, a bunch; alluding to the form of the inflorescence. Nat. ord., *Rubiaceæ*.) United to *Hoffmannia*, in the *Genera Plantarum*.

Small stove shrubs, with very ornamental foliage. Cuttings of side-shoots under a bell-glass in heat. Sandy peat and leaf-mould.

C. argyrou'ra. ½. Mexico. 1857.
— *discolor*. ½. Red. Bahia. 1850. B. M. t. 4530.
— *Ghiesbreghtii*. Mexico. 1861. III. Hort. t. 279.
— *foliis variegatis*. III. Hort. n. s. t. 498.
— *pyrophylla*. South Mexico.
— *refulgens*. Leaves satiny, white ribbed. Mexico.
— *regalis*. 1. Mexico. 1859.
— *smaragdina*. ½. Mexico. 1859.

Campyloneu'ron. See *Polypodium*.

Canada Balsam. Resin obtained from *Abies balsamea*.

Canada Rice. *Tizania aquatica*.

Canari'na. (So named from being natives of the *Canary Islands*. Nat. ord., *Campanulaceæ*. Allied to *Lightfootia*.)

Greenhouse herbaceous perennials; 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 hotbed; at other times the common treatment of the greenhouse will suit them; fibry loam, turfy peat, and a good portion of sand; pots, well drained.

C. campanula. 3. Yellowish purple, or orange with red nerves. January to March. 1695. B. M. t. 444. Syn., *Campavula canariensis*.

— *laevigata*. 3. Orange. January. 1825.

Canarium. (From *Canari*, the Malay vernacular. Nat. ord., *Burseraceae*.)

Stove trees. Cuttings of half-ripened wood under a bell-glass in heat. Soil, fibry peat and loam.

C. commune. White. Calyx large, green. India. Bent. and Tr. t. 61.

Canary-bird Flower. *Tropæolum peregrinum*.

Canary Grass. *Phalaris*.

Canavalia. (From *Canavali*, its native name in Malabar. Nat. ord., *Leguminosae*; Tribe, *Phaseoleae*. Allied to *Dioclea*.)

Stove perennial twiners, except where otherwise specified; seeds and cuttings in sandy soil, and in heat, under a bell-glass; sandy loam and leaf-soil.

C. bonariensis. B. R. t. 1199. See *C. paranensis*. — *ensifolmis*. Purple. November. Jamaica. 1842. B. M. t. 4027. Syn., *Dolichos aciniformis*, Jacq. Ic. t. 559. Jamaica horse bean.

— *gladiata*. 6. White, red. June. E. Ind. 1790. Syn., *Dolichos gladiatus*, Jacq. Ic. t. 560.

— *Lunareti*. 3. Rosy flesh-colour. Japan. Rev. Hort. 1881, p. 236. Japanese haricot bean.

— *obtusifolia*. 6. Purple. July. Malabar. 1820. — *emarginata*. 8. Purple. July. E. Ind. 1800. Syn., *Dolichos emarginatus*, Jacq. H. Schoenb. t. 221.

— *paranensis*. 10. Purple. July. Buenos Ayres. Syn., *C. bonariensis*.

— *rosea*. 3. Purple. July. Jamaica. 1812. Evergreen creeper.

— *rutilans*. Scarlet. 1847. Greenhouse evergreen twiner.

Canbia. (Named in honour of *W. M. Canby*, of Delaware, U.S.A. Nat. ord., *Papaveraceae*.)

Greenhouse perennial, light sandy loam, seeds.

C. caudata. One-twelfth. White. Petals persistent. S. E. California. 1876.

Cancellate. Resembling lattice-work.

Candelabrum or Chandelier Tree. See *Pandanus candelabrum*.

Candleberry Myrtle. *Myrica cerifera*.

Candleberry Tree. *Aleurites triloba*.

Candle Tree. *Parmentiera cerifera*.

Candollea. (Named after the great botanist, *De Candolle*. Nat. ord., *Dilleniaceae*.)

Greenhouse evergreen shrubs, from Australia; cuttings in sandy peat, under a glass; sandy peat and fibry loam.

C. Brunonis. 6. Yellow. May. 1837.

C. cuneiformis. 7. Yellow. July. W. Australia. 1824. B. M. t. 2711.

— *Cunninghamii*. Maund Bot. vol. 2, t. 85. See *Hibbertia Cunninghamii*, B. M. t. 3183.

— *Hugelii*. 6. Yellow. May. W. Australia. 1837.

— *tetraandra*. 7. Yellow. June. W. Australia. 1842. B. M. 1843, t. 50.

Candy Carrot. *Athamanta Matthiola*.

Candy-tuft. *Iberis*.

Cane Brake. *Arundinaria*.

Cannella. (From *canna*, a reed; the form of the inner bark when peeled off. Nat. ord., *Canellaceae*.)

This is the wild cinnamon of the West Indies, so called on account of its aromatic fragrance. Cannella, or white wood bark, yields, by distillation, a warm, aromatic oil, which was formerly 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 fibry peat.

C. alba. 40. White. W. Ind. 1735.

— *laurifolia*. 30. White. S. Amer. 1817. This is probably only a variety of *C. alba*.

Canistrum. (From *kanos*, a basket; in allusion to the resemblance of the inflorescence to a basket of flowers. Nat. ord., *Bromelaceae*. Allied to *Nidularium*. United to *Echmea* by Bentham and Hooker.)

Stove epiphytes. The inflorescence is rather showy, and retains its beauty for two or three months. Suckers and divisions. Fibrous peat, turfy loam, and charcoal.

C. aurantiacum. Orange. Brazil. 1873. Belg. Hort. 1873, t. 15.

— *eburneum*. 2. White, green; bracts ivory white. May. 1876. Syns., *Nidularium Lindenii* and *Guzmania fragrans*. Belg. Hort. 1879, tt. 13-14.

— *roseum*. White, green; bracts rosy. 1879. Belg. Hort. 1883, tt. 14-15.

— *viride*. 2. Green. Brazil. 1875. Belg. Hort. 1874, t. 16.

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 albumen 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 albumen 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 soil has a very considerable influence in inducing the disease. If the subsoil be an iron gravel, or if it is not well drained, the canker is almost certain to make its appearance amongst the trees it sustains, 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 predisposed to this disease.

All these facts before us unite in assuring us that the canker arises from the tree's weakness, from a deficiency in its vital energy, and consequent inability to imbibe and elaborate the nourishment necessary to sustain its frame in vigour, and much less to supply the healthy development of new parts.

It is quite true that over-luxuriant trees are particularly liable to this disease; but over-luxuriance is really a demonstration that the tree does not digest and secrete its juices healthily.

If over-luxuriance threaten to introduce canker, the best remedy is to remove some of the main roots of the tree, and to be particularly careful not to add any manure to the soil within their range. On the contrary, it will be well if the continued exuberant growth shows the necessity for the staple of the soil to be reduced in fertility by the admixture of one less fertile, or even of drift sand. If there be an excess of branches, the saw and the pruning-knife must be gradually applied. It must be only a tree of very weak vital powers, such as is the golden pippin, that will bear the general cutting of the annual shoots. A vigorous variety would exhaust itself the following year in the production of fresh wood. Nothing beyond a general rule for the pruning can be laid down. Keep a considerable vacancy between every branch, both above and beneath it, and especially provide that not even two twigs shall chafe against each other. The greater the intensity of light, and the freer the circulation of air amongst the foliage of the tree, the better the chance for its healthy vegetation. If the disease being in a fruit-tree be a consequence of old age, it is probably premature, and induced by injudicious management; for very few of our varieties are of an age that insures to them decrepitude. We have never yet known a tree, unless in the last stage of decay, that could not be greatly restored by giving it more air and light, by careful heading in pruning, improvement of the soil, and cleansing the bark.

If the soil, by its ungenial character, induces the diseases, the obvious and only remedy is its amelioration; and, if the subsoil is the cause of the mischief, the roots must be prevented striking into it. In all cases it is the best practice to remove the tap-root. If the trees are planted shallow, as they ought to be, and the surface kept duly fertile, there is not much danger of the roots striking into the worst pasturage of the subsoil.

Scrubbing the bark of the stem and branches with a mixture of soapsuds and urine, and, where any pruning has taken place, keeping the wounds covered with a mixture of clay and cow-dung or with tar, are the best local applications. We once thought resinous plasters the best; but subsequent experiments have altered our opinion.

The *canker in the auricula* is a rapidly-spreading ulcer, which, destroying the whole texture of the plant where it occurs, prevents the rise of the sap. Some gardeners believe it to be infectious, and therefore destroy the specimen in which it occurs, unless it be very valuable; but this we believe to be erroneous, the reason of the disease appearing to be infectious, or epidemic, being, that it occurs to many when they are subjected to the injurious treatment.

It appears to be caused by the application of too much water, especially if combined with superabundant nourishment. Therefore, although cutting out the decaying part, when it first appears, and applying to the wound some finely-powdered charcoal, will effect a cure, if the disease has not penetrated too deeply, yet it will be liable to return immediately, if a less forcing mode of culture be not adopted. No auricula will suffer from this disease if it be shifted annually, and the tap-root at the time of moving be shortened, a thorough system of draining adopted, and excessive damp during the winter being prevented by proper shelter.

Parsley, grown in a poor soil, is also liable to canker in the winter. Mr. Barnes says he never found any application which eradicated this disease so effectually as a mixture, in equal parts, of soot and slacked lime thrown over the plants. The cure is complete in a few days, the vigour of the plants restored, indicating that this species of ulceration arises from deficient nourishment.

The tubers of the *potato*, also, are liable to the speck, black spot, or *canker*, a disease which we once thought occasioned by the calcareous earth, lime, or chalk contained by the soil; but, on more lengthened observation, we find it in all soils, and in seasons characterized by opposite extremes of wetness and dryness. Hence we are induced to consider that the disease arises from some defect in the sets employed, or to potatoes being grown too often on the same site. It is quite certain, that in ground tired of potatoes, the disease most extensively appears. This suggests that it is occasioned by a deficiency of some constituent in the soil, a suggestion confirmed by the fact, that in the fields of the market-gardeners near London, which are supplied without stint with the most fertilizing manure, this disease of the potato is comparatively unknown.

The stems of succulent plants, such as the cacti, mesembryanthemums, and the balsam, as well as the fruit of the

cucumber and melon, and the stalk of the grape, are all liable to *canker* in some form.

Ca'na. Indian Shot. (The Celtic name for a *cane*, or reed. Nat. ord., *Scitamineæ*; Tribe, *Cannææ*.)

Stove and greenhouse herbaceous perennials, extensively employed in sub-tropical and other bedding. Divisions of the root; seed sown in hotbed; rich, open, loamy soil.

C. Achirras. 5. Dark red. August. Isle of Mendoza. 1829.

— *angustifolia.* 2. Scarlet. April. S. Amer. 1824.

— *aurantiaca.* 4. Orange. December. Brazil. 1824.

— *ca'nea.* 4. Flesh. December. Brazil. 1822. Syn., *C. variabilis*.

— *chinensis.* See *C. orientalis*.

— *cocci'nea.* 2. Scarlet. December. S. Amer. 1731. B. C. t. 739. Syn., *C. rubra*.

— *comp'cta.* 2. Red. April. E. Ind. 1820.

— *cro'cea.* 2. Red. May. 1823.

— *curviflora.* 4. Pale red. Central America.

— *dendro'ta.* 2. Scarlet. June. Brazil. 1818.

— *latifolia.* 3. Red. May. Brazil. 1818.

— *discolor.* 10. Scarlet. November. Trinidad. 1827. B. R. t. 1231.

— *c'aulis.* 3. Red. September. Peru. 1820.

— B. R. t. 775. Syn., *C. rubricaulis*.

— *Ehemenni.* 6. Crimson. 1881. Syn., *C. iridiflora*, var. *Ehemanni*.

— *ere'cta zebra'na.* Leaves variegated. 1882.

— *escule'nta.* 4. Red. December. S. Amer. 1822.

— *exce'lsa.* 16. Scarlet. January. Brazil. 1820.

— B. C. t. 743.

— *fla'ccida.* 5. Red. July. South Carolina. 1788. B. C. t. 562.

— *giga'ntea.* 5. Red. Yellow. December. Brazil. 1809. B. R. t. 206, B. M. t. 2316, Syn., *C. latifolia*.

— *glau'ca.* 2. Yellow. January. S. Amer. 1730.

— *ru'bro lu'tea.* 4½. Yellowish-red. August. Jamaica. 1834.

— *ru'fa.* 2. Reddish-brown. July. Mexico. B. M. t. 2302. Syn., *C. mexicana*.

— *helicontaefolia.* 6-8. Red, yellow. Mexico.

— *i'ndica.* 2. Scarlet. December. India. 1570. B. R. t. 776. B. M. t. 454 is *C. patens*.

— *Berti'ni.* Garden variety. 1889.

— *macula'ta.* 2. Reddish-yellow. December. India.

— *iridiflora.* 6. Red. December. Peru. 1816. B. R. t. 609. Syn., *Achirida iridiflora*.

— *ju'ncea.* 1. Red. May. Indies. 1820.

— *lagune'nsis.* 5. Yellow. September. Laguna. 1823. B. R. t. 1311. Syn., *C. sulphurea*.

— *Lambe'rti.* 4. Scarlet. May. Trinidad. 1819. B. R. t. 470. Syn., *C. maxima*.

— *lanccola'ta.* 3. Red. December. Brazil. 1825.

— *lanugino'sa.* 6. Scarlet. April. Marant. 1823.

— *latifolia.* See *C. gigantea*.

— *liliiflora.* 8-10. Yellow, rosy. Veraguas. Rev. Hort. 1884, p. 132.

— *limba'ta.* 3. Red. December. Brazil. 1818. B. R. t. 771.

— *lu'tea.* 2. Yellow. October. E. Ind. 1829. B. M. t. 2085.

— *ma'xima.* See *C. Lamberti*.

— *mexica'na.* See *C. glauca*, var. *rufa*, B. M. t. 2302.

— *occidenta'lis.* 3. Reddish-yellow. June. W. Ind. 1822. B. R. t. 772.

— *orienta'lis.* 4. Red. June. E. Ind. 1820. Syn., *C. chinensis*.

— *fla'va.* 4. Yellow. June E. Ind. 1820.

- C. orientalis maculata*. Scarlet, yellow. August. E. Ind. 1570.
 — *pa'llida*. 4. Pale yellow. June. W. Ind. 1820.
 — — *latifolia*. 3. Yellow. June. W. Ind. 1820.
 — *paniculata*. Peru. Kerner Hort. t. 840.
 — *pa'tens*. 2. Reddish-yellow. May. St. Helena. 1778. Syn., *C. indica* of B. M. t. 454.
 — *pedunculata*. 6. Orange. October. 1820.
 — *polymerpha*. 3. Red. December. S. Amer. 1825.
 — *Reevesii*. See *Eurystylus Reevesii*.
 — *Roseocaina*. 3-4. Yellow with red spots. W. Indies.
 — *rubra*. See *C. coccinea*.
 — *rubricaulis*. See *C. edulis*.
 — *sanguinea*. See *C. Warszewiczii*.
 — *speciosa*. 3. Red. August. S. Amer. 1820. B. M. t. 2317.
 — *stolonifera*. 3. Yellow, lip reddish. Montevideo.
 — *sulphurea*. See *C. lagunensis*.
 — *sybestrus*. 5. Scarlet. December. S. Amer. 1820.
 — *Vanhouttei*. Bright scarlet.
 — *varia bilis*. See *C. carnea*.
 — *Warszewiczii*. 3. Scarlet. Costa Rica. 1849. B. M. t. 4854. Syn., *C. sanguinea*.
 — *zalapensis*. 4-5. Red, yellowish. Jalapa.
 — *zebrina*. 6-8. Orange. Stem and leaves tinged with violet-purple.

Plants have also been grown in gardens under the following names, but have never been properly described, and probably belong to some of the above-mentioned species:—*Canna aurea*, *C. caripensis*, *C. macrocarpa*, *C. mutabilis*, *C. ovata*, *C. tubiflora*, *C. undata*, and *C. vitellina*.

Ca'n'nabis. Hemp. (A name used by Dioscorides for a plant. Nat. ord., *Cannabineæ*.)

Ornamental hardy annual. Seeds in spring. *C. sativa*. 4-10. Greenish. June. India and Persia.

Cansco'ra. (From *Kansjan-cora*, the Malabar name for *C. perfoliata*. Nat. ord., *Gentianaceæ*.)

Greenhouse or stove annuals. Treatment similar to that for BALSAMS.

C. Parisii. 2. White. Moulmein. 1864. B. M. t. 5429.

Cannon-ball Tree. *Courou'pita guiane'nsis*.

Canterbury Bells. *Campa'nula medium*.

Ca'nthium. (From *Cantic*, its Malabar name. Nat. ord., *Rubiaceæ*.) This genus is now united to **Plectronia**.

C. chinensis and *coronatum*. See *Randia dumetorum*.
 — *dubium*. B. R. t. 1026. See *Diplospora viridiflora*.

Ca'ntua. (*Cantu* is the Peruvian name. Nat. ord., *Polemoniaceæ*.)

Handsome greenhouse evergreen shrubs. Cuttings in sand, under glass; sandy loam and peat.

- C. aggregata*. See *Gilia aggregata*.
 — *bicolor*. 4. Reddish-yellow. May. Peru. 1846. B. M. t. 4729.
 — *buxifolia*. 4. Rosy. April. Peruvian Andes. 1849. B. M. t. 4582. Syn., *C. tomentosa*.
 — *depdens*. 4. Rosy-red. April. 1881.

C. ligustrifolia. See *Vestia Lycioides*.

— *ovata*. Peru. Syn., *C. uniflora*.

— *parviflora*. See *Gilia inconspicua*.

— *pyrifolia*. 3. Cream. March. Peru. 1846. B. M. t. 4386.

Cape Gooseberry. *Phy'salis e'dulis*.

Cape Jasmine. *Garde'nia flo'rida*.

Cape Philly'rea. *Cassi'ne cape'nsis*.

Cape'lla plu'mbea. See **Phalocallis plumbea**.

Capno'dium austr'ale. A fungus consisting of black filamentous threads, which occasionally attacks conifers.

Capo'llin, Capouli'nos, Capu'linos. Names for the fruit of *Prunus salicifolia*.

Ca'pparis. Caper-tree. (From *karbar*, the Arabic name for capers. Nat. ord., *Capparideæ*.)

The flower-buds of *C. spinosa* form a well-known pickle. Stove or greenhouse evergreen shrubs, except where otherwise specified. Cuttings of ripe shoots in sand, under a glass, in moist heat; sandy loam and fibry peat. All require protection, and most of them the usual treatment of the plant-stove.

C. acuminata. 6. White. E. Ind. 1822.

— *acutifolia*. 4. White. July. China. 1827.

Syn., *C. chinensis*.

— *ægyptiaca*. 2. White. Egypt. 1822.

— *amygdali'na*. 6. White. W. Ind. 1818.

— *aphylla*. 4. White. E. Ind. 1822.

— *arborescens*. See *C. pulcherrima*.

— *auriculata*. 6. White.

— *Brassii*. 4. White. Gold Coast. 1793.

— *Breynia*. 11. White. W. Ind. 1752.

— *chinensis*. See *C. acutifolia*.

— *cynophallophora*. 8. Green, white. W. Ind. 1752.

— *eustachia'na*. 6. Striped. St. Eustach. 1822.

— *ferruginea*. 4. White. Jamaica. Syn., *C. octandra*.

— *Fontanesii*. 3. White. July. South of Europe. Half-hardy deciduous. Syn., *C. ovata*.

— *frondsia*. 7. Green. Carthage. 1806.

— *herbacea*. 2. White. Tauria. 1818. Herbaceous half-hardy.

— *heteroclita*. See *Nieuhuria oblongifolia*.

— *jamaicensis*. 4. White. Jamaica. 1793.

— *linearis*. 15. White. W. Ind. 1793.

— *Lodigesi*. 6. White. Syn., *C. undulata*.

— *maria'na*. 4. White. Timor. 1820. Jacq.

H. Schœnb. t. 109.

— *odoratissima*. 6. White. Caraccas. 1814.

— *ovata*. See *C. Fontanesii*.

— *pelita*. 6. White. Trinidad. 1827.

— *pulcherrima*. 10. White. Carthage. 1700.

Syn., *C. arborescens*.

— *saligna*. 8. White. Santa Cruz. 1807.

— *sepia'ria*. 4. White. E. Ind. 1823.

— *spinosa*. 3. White. June. South of Europe. 1596. Half-hardy deciduous.

— *tenuisiliqua*. 6. White. Caraccas. 1823.

— *torulosa*. 6. White. Jamaica. 1822. Syn., *C. uncinata*.

— *triflora*. 4. White. S. Amer.

— *trifoliata*. See *Cratæva tapioides*

— *uncinata*. See *C. torulosa*.

— *undulata*. See *C. Lodigesi*.

— *verrucosa*. 8. White. Carthage. 1820.

— *zeylanica*. 6. White. Ceylon. 1819.

Capra'ria. See **Freylinia.**

Caprifolium. Honeysuckle. (From *caper*, a goat, and *folium*, a leaf; poetically, goat-leaf, for its climbing habit. Nat. ord., *Caprifoliaceæ*. United to **Lonicera**.)

HARDY.

- C. dioicum*. See *Lonicera parviflora*.
- *Douglasii*. See *Lonicera Douglasii*.
- *etruscum*. See *Lonicera etrusca*.
- *flavum*. See *Lonicera flava*.
- *gratum*. See *Lonicera grata*.
- *hirsutum*. See *Lonicera pubescens*.
- *hispidulum*. Rose. July. S. Amer. 1833.
- *hortense*. See *Lonicera Caprifolium*.
- *italicum*. See *Lonicera Caprifolium*.
- *rubrum*. See *Lonicera Caprifolium*, var. *rubrum*.
- *longiflorum*. See *Lonicera longiflora*.
- *occidentale*. 20. Orange. July. Ft. Vancouver. 1834.
- *parviflorum*. See *Lonicera parviflora*.
- *periclymenum*, with its varieties *belgicum*, *quercifolium*, *serotinum*, and *variegatum*. See *Lonicera periclymenum*.
- *pubescens*. See *Lonicera pubescens*.
- *sempervirens*, with its varieties *Brownii*, *major* (B. M. t. 781), and *minor* (B. M. t. 1753). See *Lonicera sempervirens*.
- *tubulosum*. Mexico. 1846.

HALF-HARDY.

- C. chinense*. See *Lonicera chinensis*.
- *ciliatum*. See *Lonicera ciliosa*.
- *implexum*. See *Lonicera implexa*.
- — *balearicum*. See *Lonicera implexa*, var. *balearica*.
- *japonicum*. See *Lonicera confusa*.
- *nepalense*. See *Lonicera macrantha*.
- *splendidum*. See *Lonicera splendida*.

Cap'sicum. Chili Pepper. (From *kapto*, to bite; referring to its pungency. Nat. ord., *Solanaceæ*.)

Cayenne pepper is the ground seeds of *Capsicum*. Seeds sown in a hotbed, in March, and, after being pricked 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.

HARDY ANNUALS.

- C. angulosum*. 1. White. June. India.
- *annuum*. 1. White. June. India. 1548.
- *cerasiforme* of Willdenow. 1. Red, yellow. June. W. Ind. 1739.
- — *cerasiformum*. 2. White. June. 1823.
- *coenicum*. 2. White. June. Guiana. 1820.
- *cordiforme*. 1. White. June. India.
- *longum*. 1. White. June. India. 1548.
- *tetragonum*. 1. White. June. India.
- *ustulatum*. 2. White. June. Chili.

STOVE EVERGREEN SHRUBS.

- C. americana*. See *C. dulce*.
- *baccatum*. 3. White. June. 1731. Syn., *C. cerasiforme*, Hort.
- *bicolor*. 4. Purple. June. W. Ind. 1804. B. M. t. 1839.
- *caeruleum*. Purple. June. S. Amer. 1827.
- *cerolum*. South America. 1852. Paxt. Fl. Gard. ii. p. 131, f. 202.
- *conoides*. 2. White. April. India. 1750.
- *dulce*. 2. Syns., *C. americanum* and *tomatiforme*, var. *viatorum*.
- *frutescens*. 1. Pale yellow. July. India. 1656.
- — *ortulosum*. 2. White. E. Ind. 1820.
- *globiferum*. 2. White. June. Gambia. 1824.

- C. gro'ssum*. 1. White. July. India. 1752. Biennial.
- — *dididum*. White. May. E. Ind. 1758.
- — *globosum*. 1. White. July. E. Ind.
- *havanense*. See *C. pendulum*, var. *minus*.
- *latum*. 1. White. July. E. Ind. 1820.
- *micranthum*. 3. White. May. Brazil. 1820.
- *microcarpon*. 2. White. May.
- *Millerii*. 1. White. June. W. Ind. 1824. Annual. Syn., *C. cerasiforme* of Miller's Dictionary.
- *minimum*. White. May. E. Ind. 1728.
- *ovatum*. 3. White. July. 1824.
- *pendulum*. 2. White. May. 1750.
- — *minus*. White. May. Havannah. 1826. Syn., *C. havanense*.
- *pyramida'le*. 2. White. May. Egypt. 1750.
- *sinese*. 2. White. July. China. 1807. Jacq. Vind. iii. t. 67.
- *sphaericum*. 2. White. May. 1807.
- *tomatiforme*. 1½. Whitish. July. Biennial.
- — *viatorum*. See *C. dulce*.

Capsicum. For pickling purposes the following are the species and varieties usually employed :

Cap'sicum annum (Guinea pepper), the long-podded, short-podded, and oval short-podded. *C. cerasiforme* (Cherry pepper), cherry-shaped red and yellow-podded. *C. gro'ssum* (Bell pepper). Sorts also grown as greenhouse ornamental plants are : little gem, red podded, Prince of Wales, yellow podded, long yellow, long red, round red, round yellow, etc.

Soil and Situation.—They do best in a light, rich loam, and against a fence or south wall.

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; but, in default of a stove, hotbed, or frame, they may be raised under hand-glasses on a warm border, the sowing, in such case, being deferred until settled warm weather, in May. The seeds covered a quarter of an inch deep. When the plants have still their seed-leaves, thin to four inches apart, and plant those removed in four-inch pots, three in each, and keep them in a moderate hotbed, being shaded from the mid-day sun, and moderately watered with tepid water until they have taken root; but little shading will be required if the roots of the seedlings are carefully moved. During the whole of their continuance beneath a frame, air must be admitted freely, to prevent their being drawn; and, as May advances, they must be accustomed gradually to the open air, taking off the glasses during the day, and by degrees leaving them open of an evening: this prepares them for their final removal at the close of that month, or early in June. Those raised in a border beneath hand-glasses must also be

thinned as directed above, and those removed planted in a similar situation. When planted out finally, set them two feet apart, screened from the sun, and water freely until rooted. Continue the watering in dry weather throughout their growth. They flower during July or beginning of August, and the pods are ready to be gathered for pickling at the close of this last month, or early in September.

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, and keep the seed in them until wanted for sowing.

Caraga'na. Siberian Pea-tree. (From *Caragan*, the name of *C. arbore-scens* among the Mogul Tartars. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. Allied to *Colutea*.)

These handsome shrubs inhabit the whole of north-eastern Asia, from Pekin in China, westward, to the banks of the Wolga. 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. alta'na.* 3. Yellow. May. Siberia. 1789. Syn., *Robinia alta'na*.
— arbore-scens. 15. Yellow. May. Siberia. 1752. Syn., *Robinia Caragana*.
— — inermis. 10. Yellow. May. Siberia. 1820.
— — pendula. Garden variety. 1887.
— arena'ria. 1. Yellow. June. Siberia. 1802. Syn., *Robinia Caragana*, var. *intermedia*, B. M. t. 1886.
— arge'ntea. See *Halimodendron argenteum*.
— chamli'gu. 4. Yellow. May. China. 1778.
— fe'roc. See *C. spinosa*.
— frutescens. 2. Yellow. April. Siberia. 1752. Swt. Fl. Gard. t. 227. Syns., *Robinia frutescens*, *mollis*, and *tomentosa*.
— — angustifolia. 6. Yellow. April. Odessa.
— — latifolia. 6. Yellow. April.
— — mollis. 2. Yellow. May. Tauria. 1818. Syn., *C. mollis*.
— grandiflora. 1. Yellow. June. Iberia. 1823. Syn., *Robinia grandiflora*.
— Gerardi'na. Himalayas. 1839.
— juba'ta. 2. Pink. April. Siberia. 1796.
— macroca'ntha. 2. Yellow. June. Siberia.
— microphy'lla. 2. Yellow. May. Russia. 1819.
— — interme'dia. 6. Gf. t. 336.
— mollis. See *C. frutescens*, var. *mollis*.
— mong'lica. Yellow. April. Tartary. 1826.
— pendula. See *C. arbore-scens*, var. *pendula*.
— pygma'ea. 1. Yellow. May. Siberia. 1751.
— — arena'ria. 1. Yellow. April.
— Redo'uski. 3. Yellow. June. Siberia. 1827.
— pra'cox. 3. Yellow. April.

- C. spinosa.* 6. Yellow. May. Siberia. 1775. Syn., *C. ferax*.
— tragacanthoides. 4. Yellow. May. Siberia. 1816.
— triflora. Greenish-yellow. 1847. †

Caragua'ta. (A South American name for several Bromeliads. Nat. ord., *Bromeliaceæ*. Allied to *Tillandsia*.)

Stove epiphytes. For cultivation, see BILLBERGIA.

- C. Andrea'na.* 2. Bracts carmine; flowers bright yellow. April. Andes. 1881. B. M. t. 7014.
— angustifolia. Lemon-yellow, scarlet. New Grenada.
— cardina'lis. See *C. lingulata*, var. *cardinalis*.
— Furstenbergia'na. July. 1883.
— Linde'ni. Leaves light green, banded with violet-brown. Peru. 1878. Syn., *Mas-sangea Lindeni*, Ill. Hort. 1878, t. 309.
— lingula'ta cardina'lis. 1½. White; bracts scarlet. Columbia. 1880. Syn., *C. cardina'lis*, Rev. Hort. 1883, p. 12.
— Morrenia'na. 1½. Bracts red; flowers yellow. April. New Grenada. 1887. Rev. Hort. 1887, p. 12.
— musa'ica. 1. Orange, white; bracts vermilion. Spring. Columbia. 1873. Syns., *Mas-sangea musaica*, Belg. Hort. 1877, t. 8-9, *Billbergia*, *Vriesia*, and *Tillandsia musaica*.
— Osa'na. Bracts red; flowers yellow. September. Ecuador. 1875. Belg. Hort. 1885, tt. 26, 27.
— Peaco'ckii. Bracts purple; flowers white. 1885.
— sangu'nea. 1. Pale yellow. November. Andes of New Grenada. 1883. B. M. t. 6765.
— Schlumberge'rii. 3. Pale yellow. Peru. 1882. Syns., *Mas-sangea Morreniana*, and *Schlumbergeria Morreniana*.
— serra'ta. See *Nidularium Scheremetiewii*.
— sple'ndens. Outer bracts scarlet, inner yellow. 1866. Fl. Ser. t. 1091.
— Va'n Volae'mii. 2 to 3. Yellow; bracts rose. Columbia. 1879. Ill. Hort. t. 326.
— Za'hni'i. 1. Yellow; bracts scarlet. Chiriqui. 1870. B. M. t. 6059.

Carallia. (From *Corallie*, its name in India. Nat. ord., *Rhizophoraceæ*.)

This, like the rest of the Mangroves, grows only along the tropical shores, where it forms impenetrable thickets, and sends down roots from the branches, like the Banian-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. lucida.* 20. Yellow. E. Ind. 1820. Wight Icon. t. 606. Probably a form of *C. lanceaefolia*.

Carallu'ma. (Its Indian name. Nat. ord., *Asclepiadaceæ*. Allied to *Stapelia*.)

Stove evergreen shrubs, natives of East Indies. Cuttings well dried, and laid, rather than fastened, among gravelly and calcareous soil, until they strike; sandy loam, broken pots, and lime-rubbish: little water given, unless when growing freely.

- C. adsee'ndens.* 2. Pink. July. 1804.
— crenula'ta. ½. Greenish-yellow, streaked with purple. September. S. India. 1830. B. C. t. 1774. Syn., *Boucerosia crenulata*.

C. fimbriata. †. Pale yellow. 1829. B. C. t. 1868.

— *umbellata*. 1-2. Purple striped. S. India. Syn., *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., *Meliaceae*.)

The flowers are small, but numerous; and, like the rest of the *Meliaceae*, 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.

C. guianensis. 20. Yellow, stained with red. Guiana. 1824.

— *guyanensis*. See *C. procera*, var. *splendens*.

— *molucaensis*. 20. Yellow. E. Ind. 1820.

— *procera*. 40. Yellow. W. Ind.

— *splendens*. 12. Yellow. W. Tropical Africa. 1795. Syn., *C. guyanensis*.

Caraway. *Carum carui*.

Carbe'nia benedi'cta. See **Cnicus benedictus**.

Cardami'ne. Lady's Smock. (From *kardamon*, watercress; referring to the acrid flavour. Nat. ord., *Cruciferae*. Allied to *Arabis*.)

Like the rest of the *Cruciferae*, *Cardami'ne* is antiscorbutic and stimulant. All that we describe are hardy herbaceous perennials, except *C. thalictroides* 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. amara. 1. White. April. Britain. Aquatic.

Eng. Bot. ed. 3. t. 108.

— *asarifolia*. 1. White. June. Italy. 1710. B. M. t. 1735.

— *bellidifolia*. 1. White. April. Scotland.

— *alpina*. 1. White. April. Austria. 1658.

— *carnea*. 1. White. June. Hungary. 1824. Hardy herbaceous. Syn., *Pteroneuron carnosum*.

— *chekidonia*. 1. White. June. Italy. 1739.

— *glauca*. 1. White. June. Calabria. 1827.

— *græca*. †. White. June. Mt. Parnassus. 1710. Hardy annual. Syn., *Pteroneuron græcum*.

— *latifolia*. 2. Purple. June. Spain. 1710. Marsh-plants. Rev. Hort. 1860, p. 463.

— *macrophylla*. 1. Purple. May. Siberia. 1824.

— *pratensis*. 1. Purple. April. Britain. Cuckoo-flower. Marsh-plant. Eng. Bot. ed. 3. t. 109.

— *plena*. 1. Purple. April. Marsh-plant.

— *plena alba*. 1. White. April. Marsh-plant. Gf. t. 1099, f. 1.

— *rotundifolia*. White. March. United States. 1884.

— *thalictroides*. 1. White. June. Piedmont. 1818. Annual.

— *trifolia*. 2. White. May. Switzerland. 1629.

— *uliginosa*. 1. White. April. Tauria. 1819. Marsh-plant.

Cardamom. *Elettaria Cardamomum*.

Cardamo'mum me'dium. See **Elettaria costata**.

Cardia'ndra. (From *kardios*, a heart, and *aner*, anther. Nat. ord., *Saxifragæ*; Tribe, *Hydrangeæ*.)

Half-hardy shrub. For cultivation, see **HYDRANGEA**.

C. alternifolia. White, lilac. Japan. 1866. Gf. t. 486.

Cardinal flower. *Lobelia cardinalis*.

Cardoon. (*Cynara cardunculus*.) The stalks of the inner leaves, when rendered tender by blanching, are used in stews, soups, and salads.

Soil and Situation.—A light, rich, soil, dug deep, and well pulverized, suits it best.

Time and mode of Sowing.—Sow at the close of April, as those plants raised from earlier sowing are apt to run; for a late crop, a sowing may be made in June. The 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 planted at similar distances.

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 tied together, as in lettuce, etc., and then earthed up like celery. It must be done on a dry day. As the plants grow, use more tying 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.

Cardopodium. (Derivation not stated. Nat. ord., *Compositæ*.)

Perennial thistle-like herb, almost hardy, but requires protection from frost. It is ornamental where tall plants are required, as at the back of borders, etc. For cultivation, see ECHINOPS.

C. corymbosum. 1. Blue. Greece. 1871. Gf. t. 692. Syn., *Carthamus corymbosus*, Sibth. Fl. Gr. t. 844.

Carduncellus. (The diminutive of *cardunculus*, the Cardoon. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*. Allied to *Carthamus*.)

Hardy herbaceous perennials, natives of Spain and the South of France. Division of the roots; common soil.

C. cœruleus. Blue. Syn., *Carthamus cœruleus*. B. M. t. 2293.
— *mitissimus*. ½. Blue. June. 1776. Syn., *C. vulgaris* and *Carthamus mitissimus*.
— *monspeliensium*. ½. Blue. June, July. 1776. Syn., *Carthamus carduncellus*.

Carduus. Thistle. (A name used by Virgil. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*.)

Notwithstanding the proverbial weediness of Thistles, there are some handsome garden-species among them. All hardy. Seeds or divisions; common soil.

ANNUALS.

C. albidus. 2. Purple. July. Tauria. 1816.
— *arabicus*. ½. Purple. July. Arabia. 1789. Jacq. Ic. t. 166.
— *argenta tus*. 1. Purple. July. Egypt. 1789.
— *cineureus*. 3. Purple. July. Caucasus. 1818.
— *clavata tus*. 2. Purple. July. Canaries. 1827. Syn., *Clavena canariensis*.
— *peregrinus*. 2. Purple. July. 1816.

BIENNIALS.

C. alatus. 2. Purple. July. 1812.
— *caudicans*. 3. Purple. July. Hungary. 1805.
— *cartinaceofolius*. 2. Purple. July. Pyrenees. 1804.
— *cartinodes*. 1. Purple. July. Pyrenees. 1784. Syn., *Cartina pyrenaica*.
— *collinus*. 3. Purple. July. Hungary. 1818.
— *corymbosus*. 4. Purple. July. Naples. 1824.
— *crispus*. 2. Purple. July. Europe. 1804.
— *hamulosus*. 5. Purple. June. Hungary. 1802.
— *lanuginosus*. 3. Purple. July. Armenia. 1820.
— *montanus*. 3. Purple. July. South of Europe. 1820.
— *myriacanthus*. Purple. July. N. Africa. 1836.
— *nigriscens*. 4. Purple. July. South of France. 1819.
— *personata*. 4. Purple. July. Austria. 1776.
— *seminus*. 3. Purple. Caucasus. 1819.
— *vincinatus*. 6. Purple. July. Tauria. 1817.
— *vérdii*. 2. Red. Rocky Mountains. 1871.

HERBACEOUS PERENNIALS.

C. affinis. Pink. July. Naples. 1830.
— *alpestris*. 1½. Purple. July. Croatia. 1805.
— *atriplicifolius*. 10. Purple. August. Siberia. 1784.
— *arctioides*. 2. Purple. July. Carniola. 1804.
— *Argemone*. 1½. Purple. July. Pyrenees. 1810.
— *crassifolius*. 2. Purple. July. 1805.
— *dehortatus*. 6. Red. August. Austria. 1570.
— *duobus*. 2. Purple. July. 1816.
— *macrocephalus*. 2. July. Numidia. 1827.
— *medius*. 2. Purple. June. Piedmont. 1819.
— *onopordioides*. 1½. Purple. July. Iberia. 1818.
— *podacanthus*. 3. Purple. July. France. 1819.
— *pycnoccephalus*. 1½. Purple. July. South of Europe. 1739. Jacq. Vind. t. 44.

EXCLUDED SPECIES.

C. afer. Jacq. H. Schœnb. t. 145. See *Cnicus afer*.
— *alatus*. See *Jurinea alata*.
— *altissimus*. See *Cnicus altissimus*.
— *atriplicifolius*. See *Centaurea atriplicifolia*.
— *Barbèri*. See *Cnicus*.
— *chrys.* Jacq. H. Vind. iii. t. 5. See *Cnicus*.
— *cichoraceus*. See *Serratula cichoræa*.
— *cyanoides*. See *Jurinea cyanoides*.
— *fimbriatus*. See *Serratula fimbriata*.
— *leucanthos*. See *Serratula leucantha*.
— *leucographus*. See *Tyrimum leucographus*.
— *nidius*. See *Serratula heterophylla*.
— *orientalis*. See *Cousinia carduiiformis*.
— *paniculatus*. See *Cnicus semidecurrens*.
— *pannicus*. See *Cnicus pannonicus*.
— *parviflorus*. See *Cnicus*.
— *polyanthemus*. See *Cnicus*.
— *serratuloides*. See *Cnicus pannonicus*.
— *wolgensis*. See *Cousinia wolgensis*.

Carex. Sedges. (Derivation obscure, perhaps from *keiro*, to cut; the leaves of most species are very sharp along their edges, which cause them to cut the hand if drawn rapidly along them. Nat. ord., *Cyperaceæ*.)

A very large genus of hardy perennial grass-like herbs, of very easy cultivation, but mostly grown only in botanical gardens. Seeds; divisions.

C. Grayi. 3. Brown. July. North America. 1879.
— *folliculata*. 2. Brown. Linn. Trans. viii. t. 9, f. 4.
— *intrumescens*. 1½. Brown. June. N. America. Linn. Trans. viii. t. 9, f. 3.
— *scapo*. Brownish-red. S. China. 1887. B. M. t. 6940.
— *setata*. 1 to 6. Brownish. New Zealand. 1876.

Careya. (Named after *Dr. Carey*, a celebrated divine and Indian linguist, who devoted his leisure hours to gardening and botany. Nat. ord., *Myrtaceæ*.)

These splendid plants are fit associates of Barringtonia and Gustavia. Stove-plants, from the East Indies; cuttings, and division of the roots; sandy loam one part, to two parts fibry peat, with pieces of charcoal, and plenty of drainage, and careful watering.

C. arborescens. 8. Red and yellow. India. 1823. Wight Ill. tt. 99-100.
— *herbacea*. 1. Red and white. July. 1808. Himalayas and Khasia. Wight. Ic. t. 557. Herbaceous perennial.
— *sphaerica*. 3. Red. 1808. Mountains of Chittagong. Wight Ic. t. 147 and t. 556. Evergreen shrub.

Cari'ca. Papaw-tree. (Named from an erroneous idea that it was a native of *Caria*. Nat. ord., *Passifloræ*; Tribe, *Papayaceæ*.)

One of the tropical fruits grown in our stoves, more for curiosity than for use. The Papaw fruit (*C. papaya*) is eaten, when cooked, in some parts of South America, but not much esteemed by Europeans. Stove evergreen trees; cuttings of ripe shoots in sandy soil, under a bell-glass, and in sweet bottom-heat; rich, loamy soil.

- C. auranti'aca.* Columbia. 1873.
 — *caulifl'ora.* 20. Green. Caraccas. 1806. Jacq. H. Schenb. t. 311.
 — *citri'formis.* 20. Yellowish. Lima. 1820. B. M. t. 3633.
 — *cundinamarce'nsis.* 6. Green; fruit yellow, eatable. Ecuador. 1874. Syn., *C. cundinamarcensis.* B. M. t. 6198.
 — *erythroca'rpa.* 4. White. Ecuador. 1871. Ill. Hort. 1871, t. 51.
 — *gra'cilis.* 6. Columbia. 1879. Syns., *Papaya* and *Vasconcellea gracilis.*
 — *microca'rpa monoica'.* 20. Whitish-green. 1818. Jacq. H. Schenb. tt. 309-310.
 — *papa'ya.* 20. Green. July. India. 1690. B. M. t. 2898-9. Common Papaw.
 — *pyri'formis.* 20. Pinkish. Peru. 1823. Syn., *Vasconcellea peltata.*
 — *spino'sa.* See *Jacaratia spinosa.*

Caricature plant. *Graptophyllum hortense.*

Cari'ssa. (The derivation is not ascertained; but *krishna-pakphala* is the Sanskrit name of *C. Cara'ndas*. Nat. ord., *Apocynaceæ*.)

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. Stove trees and shrubs; cuttings of ripe wood in sand, under a glass, in bottom-heat; peat and loam.

- C. Cara'ndas.* 15. White. July. Drier sandy and rocky soils of India. 1790. B. C. t. 663.
 — *fe'roz.* White. Fragrant. S. Africa. Syns., *C. hispinosa* and *Arduina hispinosa.* B. C. t. 387.
 — *grandifl'ora.* White. May. Natal. 1862. In Natal the fruit of this is used for jam, tarts, puddings, etc.; it is called the "Amatungula." B. M. t. 6307.
 — *lanco'la ta.* 6. White. July. N. Australia and Queensland. 1822.
 — *ova'ta.* 15. White. August. Queensland and New South Wales. 1819.
 — *spina'rum.* 20. White. July. Drier parts of India. 1819. B. C. t. 162.
 — *xylopi'eron.* 12. White. July. Mauritius. 1820.

Carli'na. (Named after *Charlemagne*. Nat. ord., a section of *Compositæ*.)

Hardy herbaceous perennials, except where otherwise specified. Seeds of annuals in April; seeds and divisions of perennials. The Cape species require protection. Common soil.

- C. acanthifl'ora.* 2. White. June. Carniola. 1818.
 — *aca'rna.* See *Cnicus.*
 — *acut'is.* 3. White. June. Italy. 1640. G. C. xii. 1880, p. 720.
 — *caule'scens.* 1. White. June. Switzerland. 1819.
 — *aggrega'ta.* 2. White. July. Hungary. 1804.

- C. corymbo'sa.* 3. Yellow. July. South of Europe. 1640.
 — *lana'ta.* 3. Purple. June. South of Europe. 1683. Hardy annual. Sth. Fl. Gr. t. 836.
 — *lyra'ta.* 1. June. Cape of Good Hope. 1816. Greenhouse biennial.
 — *nebrode'nsis glabri'cula.* 2. August. Caucasus. 1816. Syn., *C. Biebersteiniana.*
 — *pyrena'ca.* See *Carduus carlinoides.*
 — *racem'o'sa.* 3. Yellow. July. Spain. 1658. Hardy biennial. Syn., *C. sulphurea.*
 — *si'cula.* 1. July. Sicily. 1827. Hardy biennial. Syn., *C. bracteata.*
 — *si'mplex.* 1½. White. June. Hungary. 1816.

Carludo'vica. (Named after *Charles IV.*, of Spain, and *Louisa*, his queen. Nat. ord., *Pandanaceæ*.)

Stove, palm-like perennials; suckers; sandy loam.

- C. angustifl'ora.* 2. Greenish-yellow. Peru. 1818.
 — *caput-medu'sce.* 5-7. White. 1887. Native country unknown. B. M. t. 7118.
 — *Dru'dei.* 4. White. Columbia. 1878.
 — *e'legans.* 3. 1889.
 — *ensif'ormis.* 2. White. Costa Rica. 1875.
 — *funif'era.* 4. White. Trinidad. 1824. Evergreen climber. Syn., *Ludovia funifera.*
 — *jamaice'nsis.* 4. White. Jamaica. 1825. Evergreen climber.
 — *lanco'fl'ora.* Yellowish. Guiana. 1862. Syn., *Ludovia lanco'fl'ora.*
 — *latifl'ora.* 3. Green. July. Peru. 1818. Syn., *Ludovia latifl'ora.* B. M. t. 2950-1.
 — *palma'ta.* 3. White. July. Peru. 1818.
 — *palmitifl'ora.* 1889.
 — *retundifl'ora.* 6. Costa Rica. B. M. t. 7083.
 — *Wall'sii.* Columbia. 1879.

Carmichae'lia. (Named after *Capt. H. Carmichael*, author of the *Flora of Tristan da Acunha*. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. Allied to *Indigofera*.)

Greenhouse evergreen ornamental shrubs; cuttings of side-shoots under glass, in sand, in April or May; sandy peat, and a very little fibry loam. *C. Ensif'ora* and *unifl'ora* form dense compact masses scarcely an inch high.

- C. austr'alis.* 2. Blue. June. N. Holland. 1800.
 — *Ensif'.* One-twelfth. New Zealand. 1887.
 — *Mulleria'na.* 2. Whitish, striped with purple. New Zealand? 1887.
 — *unifl'ora.* One-twelfth. New Zealand.

Ca'rob-pods. *Cerato'nia si'ligna.*

Carnation. (*Dianthus caryophyl'lus*.) *Propagation by Layers.*—The latter end of July and beginning of August is the best time for this operation. By performing it thus early the layers become rooted in time to be taken off, potted, and well established before winter. Having a very sharp, small knife, some fresh-sifted compost of light loam and leaf-mould in equal parts, and some hooked pegs (the best are made of the fronds of the common Braken Fern, or, when they cannot be had, of birch or hazel-twigs), proceed to dress the stem intended to be layered by trimming off the bottom leaves, leaving about six on, nearest to

the top. Do not shorten those left on. If there are more in the pot than can be conveniently layered, take the surplus ones off, and make pipings of them. Dress all intended to be layered in one pot before any are tongued. This prevents breakage and confusion. Then tongue the layer; to do which, hold the first layer on one side, and with the knife make an incision on the underside, just below the third joint, bringing the knife slanting upward through the joint; then drop the knife, and with the other hand take up a hooked peg, thrust the sharp end into the soil, catching the layer with the hooked end of the peg as it descends; press it gently but firmly down to the soil. Proceed with the layer next to the one done, and so on all round the plants, till the first pot is finished; then cover the slit joint an inch deep with the compost, and proceed to the next pot or plant. It is not advisable to water the newly-layered plants the first day, because withholding it will give time for the wounds to heal a little.

Soil.—The best compost to grow and bloom carnations is in three parts loam, taken from an upland pasture, the top turf four inches thick; lay it up in a heap for twelve months, turning it over once a month, to sweeten and pulverize, and looking out diligently for the *wire-worm*, the grand enemy of the carnation. One part two-years-old cow-dung, and one part well-decayed vegetable-mould. Mix them together three months before using, and turn them over together three or four times.

Spring and Summer Culture.—About the end of March is the right time to put the carnations into their blooming-pots. They are generally grown in pairs; but this is not a necessary point. The pots for blooming should be eleven inches across, well drained with broken potsherds, and the compost not sifted; but in using it keep a sharp eye upon the *wire-worm*. As soon as all are potted, set them upon a bed of coal-ashes, in a sheltered part of the garden; giving water when necessary. Whenever the plants begin to send up their flower-stems, place sticks to them of the size and height they will require when in bloom. Tie very loosely, or the stems will become knee'd, and perhaps break; to prevent which, pay attention constantly to the ties.

When the buds are nearly full-grown, thin out the least promising, leaving the most plump and healthy. Just before they break, or burst, place an India-rubber ring round each bud, or a ribband

of bass-mat; this prevents the buds bursting on one side. Shade them from sun and heavy rains.

Autumn and Winter Culture.—As soon as the bloom is over, cut down the flower-stems, and expose the plants to the full sun and rain. Take off the layers as soon as they are rooted; put them into 5-inch pots, in pairs; place them in cold frames, shading them from the sun until they make fresh roots; then expose them again to the weather till the winter frosts begin to take place; and then keep the lights on, protecting them from heavy rains and frost; but, on all favourable occasions, during mild, fine weather, draw the lights entirely off during the day, shutting them up at night, and covering them up securely whenever there is an appearance of severe frost.

Forcing.—Carnations may be successfully forced, choosing the freest growers, potted them singly, early, into 8-inch pots, and placing them in gentle heat (55°) early in January. Tree Carnations are propagated by *pipings*; and, the same method of propagating by pipings is proper for the florists' varieties, we shall describe it briefly. It is done as follows:—Prepare as many pots as are wanted for the purpose; fill them nearly full of the compost above described, and the remaining space with silver-sand; prepare the piping by cutting off a stem quite smooth at the third joint, then carefully slit the joint just through, and insert the pipings in the sand pretty thickly all over the pot; place them upon a gentle hotbed, on a layer of sifted coal-ashes, or river sand; place the lights on, and shade from the sun till they are rooted, then harden them off gradually, and pot them into small pots; if Tree Carnations, singly; if show varieties, in pairs of the same kind, and re-pot them as directed above.

Exhibiting.—In June, or beginning of July, the plants will be considerably advanced towards flowering, and they should be put upon stages or stands. The posts, or supporters, of the stage should be surrounded at the bottom by small cups of water, to exclude slugs; and, by placing the plants on a stage, having the platform eighteen inches or two feet high, the flowers are viewed to more advantage; and if there is erected an awning over the top, supported four feet above the platform, the flowers, being screened from the heat of the mid-day sun, and defended from heavy rains, will continue much longer in beauty.

With respect to the cups of water

above mentioned, they are earthen or leaden, about fifteen inches wide, and three or four deep, having a hollow or vacancy in the middle six inches wide, like a socket, to receive the posts, which is formed by a raised rim in the middle, equal in height to that of the circumference, and the hollow, or socket, so formed as to receive the bottom of the posts quite through to the ground; and the space between the outer and inner rim is filled with water, so that each post standing in the middle of such a cistern sufficiently guards the plants against creeping insects.

For want of a covered stage to screen the flowers, you may contrive a small umbrella, or round-spreading cap, either of tin or canvas, nine or ten inches in diameter, one for each plant, having a socket in the middle, to receive the tops of the support-sticks. Those umbrellas which are formed of tin are the best; but, if you make them of canvas, first make little round frames, having the rim formed with slips of wire, cane, etc., the above width, with cross slips of the same materials, contriving a socket of lead or tin in the middle, for the support-stick to go quite through, as just observed; and upon these frames paste or sew canvas, which paint with oil-colour. Either covers are placed over the flowers by running the support-stick up through the hole, or socket, in the middle, and resting the cap upon a piece of wire or peg, put across through holes in the stick at such a height from the flower as to screen it from the sun and rains.

Give attention to continue to tie up neatly the flower-stalks of the plants as they advance in stature. When they are arrived at their full height, support them erect at top with wires, having a small eye, or ring, at one end, for the reception of the flower-stalk; so put the other end into holes made in the support-sticks. These wires should be five or six inches long, and several holes are made in the upper part of the sticks; the first at the height of the bottom of the flower-bud, the other above that, an inch or two distant; and place the wires in the holes lower or higher, that the eye or ring may be just even with the case of the calyx, to support the flower in an upright position; and, by drawing the wire less or more out, the flower is preserved at such distance from the support as shall seem necessary to give it proper room to expand; and if two or three of the like wires are placed also in the lower parts of the support-sticks, placing the stem of the flowers also in the eye

of the wires, all the tyings may be cut away.

To have as large flowers as possible, clear off all side-shoots from the flower-stem, suffering only the main or top-buds to remain to flower.

When the flowers begin to open, attention should be given to promote their regular expansion, they being apt to burst open on one side; and, unless assisted by a little art, as by India-rubber rings already noticed, the flower will become very irregular. Therefore, attending every day at that period, observe, as soon as the calyx begins to break, to cut it a little open at two other places in the indentings at top, with narrow-pointed scissors, that the openings may be at equal distances, observing if one side of any flower comes out faster than another, to turn the pot about, that the other side of the flower be next the sun, to assist the more regular expansion of the flower.

Likewise, to bloom any flowers as spreading as possible, place paper collars round the bottom of the flower, on which to spread the petals to their utmost expansion. These collars are made of stiff white paper, cut circular, about three or four inches diameter, having a hole in the middle, to receive the bottom of the petals inside of the calyx, the leaves of which are made to spread flat for its support; and then spread or draw out the petals upon the collar to their full width and extent, the longest undermost, and the next longest upon these, and so of the rest quite to the middle, observing that the collar must nowhere appear wider than the flower when they begin to burst.

Diseases.—These plants are subject to the *mildew*; and, when it is not checked in time, it not only destroys the plants it first appears on, but will, in time, spread to the whole stock. As soon as it is observed, sprinkle the affected plants with sulphur, and keep the air inside the frames as dry as possible. The *black spot* caused by the plants being kept too wet, is only mildew in a severer form. Cut off the leaf on which it appears, and treat as for mildew.

Insects.—The great enemy is the *wire-worm*, which eats away the inside of the stem, and destroys the plant. Search for it in the soil previously to using, and bury there, after the plants are potted in the blooming-pots, some slices of potatoes. Examine these daily, and destroy the wire-worms you may find in the baits. The *green fly*, also, attacks carnations, sometimes even in the frames.

These are easily destroyed by fumigating with tobacco-smoke. The *red spider* is often troublesome in dry springs. The best remedy is washing the leaves with a small sponge, repeating the operation till the plants are quite cleared.

Caroli'nea. *Pachira*. (Named after *Sophia Caroline*, Margravine of Baden. Nat. ord., *Sterculiaceæ*. Allied to *Adansonia*.)

C. alba. B. C. t. 752. See *Pachira alba*.
— *insignis*. B. C. t. 1004. See *Pachira insignis*.
— *macrocarpa*. See *Pachira macrocarpa*.
— *minor*. B. M. t. 1412. See *Pachira minor*.
— *princeps*. See *Pachira aquatica*.

Carpente'ria. (After *Prof. Carpenter* of Louisiana, who investigated the botany of that state. Nat. ord., *Saxifrageæ*.)

A very ornamental evergreen shrub, quite hardy against walls, most useful in greenhouse, or planted out in conservatory, common soil, seeds, and cuttings.

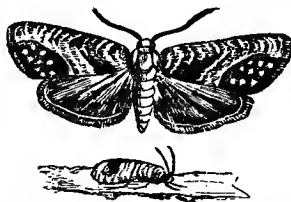
C. californica. 2. White. Sweet smelling. Sierra Nevada, California. 1880. B. M. t. 6911.

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., *Eupuliferæ*.)

C. betulus 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. americana. 20. N. Amer. 1813.
— *betulus*. 30. March. Britain.
— *incisa*. 15. March.
— *quercifolia*. 30. May. Europe.
— *variegata*. 20. March. Britain.
— *au'rea-variegata*. 20. March. 1845.
— *duine'nsis*. 12. Levant. 1739. Syn., *C. orientalis*. Wats. Dendr. t. 98.
— *japonicus*. A dwarf tree. Japan. 1889.
— *ostrya*. See *Ostrya carpinifolia*.

Carpocapsa pomone'lla. The Codlin Moth.



Every grower of the apple knows how liable his fruit is to be "worm-eaten." He finds basketsful 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*, *Pyraxis 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 is 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 masked 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 extirpation. 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, etc., is equally impracticable. The gathering up of the worm-eaten apples immediately after their fall, and before the inclosed 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. —*The Cottage Gardener*, ii. 63.

Carpode'tes recurva'tus. See **Stemonesson recurvatum.**

Carpodi'nus. Sweet Pishamin. (From *karpos*, a fruit, and *dineo*, to turn round; in reference to the form of the fruit. Nat. ord., *Apocynaceæ*. Allied to *Carissa*.)

Stove evergreen climbing shrub. Cuttings of half-ripened shoots, in heat; loam and peat. *C. dulcis*. 8. Green. June. Sierra Leone. 1822.

Carpodo'ntos lu'cida. See **Eucryphia Billardieri.**

Carpoly'sa. (From *karpos*, a fruit, and *lyssa*, rage; in reference to the three-celled fruit, or seed-pod, opening like the mouth of an enraged animal. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllidææ*. 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. spiralis. Pink. Cape of Good Hope. 1791. Syns., *Crinum spirale*, Andr. Rep. t. 92. *Crinum tenellum* and *Strumaria spiralis*. B. M. t. 1383.

Carrot. *Dau'cus caro'ta.*

Varieties.—Those with a long tapering root are called 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.—While Belgium, Yellow, Long Yellow, Purple, Long Red, Chertsey, and Surrey. Superb Green-topped, or Altringham, and James's intermediate are the best for main crop.

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 pulverized 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, during January, and in a warm border at the end 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 sown; though, to avoid the maggot, it is even recommended not to do so until its close. In May and 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 small-hoed, which operation should be regularly performed every three or four weeks, until the growth of the plants becomes an effectual hindrance to the growth of the weeds. 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 is often destroyed. 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 apart 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 not vegetate at all.

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 applying to the soil previously to digging gas-lime or wood ashes. Sand saturated with paraffin oil has also been successfully employed; but we find trenching and manuring, as we have directed, a sufficient protective. Thinning should be done while the plants are still young, or the plants should be watered after it, so as not to leave the soil around the remaining ones loose, by which an entrance would be open for the insect to deposit its eggs.

Carrot Moth. See *Depressaria*.

Carthamus. (From *quartom*, to paint, in the Arabic; referring to the flowers yielding a fine colour. Nat. ord., a section of *Compositæ*; Tribe, *Cynaroideæ*.)

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. arboreseens* and *arbo'reus*. See *Kentrophyllum arboreseens*.
 — *cœruleus*. B. M. t. 2293. See *Carduncellus cœruleus*.
 — *carduncellus*. See *Carduncellus monspeliensis*.
 — *creticus*. 2. White. June. Candia. 1731.
 — *cynarodes*. See *Cousinia cynaroides*.
 — *glau'cus*. See *Kentrophyllum glaucum*.
 — *lanatus*. B. M. t. 2142. See *Kentrophyllum lanatum*.
 — *leucocaulis*. See *Kentrophyllum leucocaulon*.
 — *mitissimus*. See *Carduncellus mitissimus*.
 — *oryacanthus*. 2. Yellow. July. Caucasus. 1818.
 — *tauricus*. See *Kentrophyllum tauricum*.
 — *tinctorius*. 3. Orange. June. Egypt. 1551. B. R. t. 170.

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., *Commelynacæ*.)

Greenhouse herbaceous perennial. Seeds sown in slight hotbed; light loam and sandy peat; requires the protection of a greenhouse, or a warm situation.

- C. spicat'um*. 1. Blue. July. Australia. 1822.

Car'um. Caraway. (From *Caria*, in Asia Minor, where it was first discovered. Nat. ord., *Umbelliferae*; Tribe, *Ammineæ*. Allied to the weed Ammi.)

The seed of *C. carui* is our Caraway, esteemed for its aromatic qualities. Hardy biennials. Seeds; open ground, in March or April. Common soil.

- C. carui*. 2. White. May. Britain.
 — *Petroselinum*. 1-2. Yellow. June. Europe.
 Syn. *Petroselinum sativum*. Parsley.

A garden escape in Britain. See PARSLEY.

C. verticillatum. 1. White. July. Britain. This species is removed here from *Sison*, a genus of weeds.

Carumbium. See **Sapium** and **Homalanthus**.

Carya. 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., *Juglandaceæ*.)

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; layers. Good, common soil.

C. alba. 50-70. April. 1629. Shell-bark Hickory. Wats. Dendr. t. 148.

— *amara*. 50-60. May. 1800.

— *aquatica*. Carolina and Georgia. Water Hickory.

— *compressa*. 30. April. 1730.

— *laciniata*. 30. April.

— *microcarpa*. 30. April.

— *oleifolia*. 30. April. 1766. Pecan Nut.

— *porcina*. 30. May. 1799. Pig Nut or Broom Hickory. Syn., *Juglans porcina*.

— *glabra*. May.

— *obcordata*. 30. May. 1812. Wats. Dendr. t. 167.

— *sulcata*. 30. April. 1804.

— *tomentosa*. 60-70. April. 1766. Mocker

Nut or white-heart Hickory.

— *maxima*. 60. May.

Caryocar. Butter Nut. (From *karyon*, a nut; in reference to its fruit. Nat. ord., *Lernstræmiaceæ*. Syns., *Pekea* and *Rhizobolus*.)

Two genera of immensely large trees, bearing large flowers and edible nuts, are contained in this order. The Suwarrow (Sauari) nuts of the shops are the produce of the *C. nuciferum*. Oil not inferior to olive-oil is extracted from the kernels. Cuttings in sand, in heat, under glass. Loam and peat.

C. glabrum. 100. Green. Guiana. 1820.

— *nuciferum*. 100. Red, yellow. Guiana.

1820. B. M. t. 2727-8.

— *tomentosum*. 100. White. Guiana. 1820.

Caryophyllus aromanticus. See **Eugenia caryophyllata**.

Caryopteris. (From *karyon*, a nut, and *pteron*, a wing; fruit winged. Nat. ord., *Verbenaceæ*.)

Hardy herbaceous or sub-shrubby perennial. Seeds, divisions, or cuttings. Garden-soil.

C. mastacanthus. 1-5. Bright blue. Autumn.

China and Japan. 1844. B. M. t. 6799.

Syn., *Mastacanthus sinensis*.

— *mongolica*. 3. Violet-blue. Chinese Mongolia. 1872.

— *Wallichiana*. 4. Red. Nepaul. 1823. Syn., *Clerodendron odoratum*.

Caryota. (From *karyon*, a nut. The Greeks first applied this name to their cultivated date. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

A noble member of a noble family of plants, most valuable to the natives of the countries they inhabit, *C. urens* furnishing a highly nutritious sago, besides abundance of palm-wine, or toddy. Stove palms. Seeds; rich, sandy loam and peat.

C. Alberti. Tropical Australia.

— *Blancoi*. Philippine Islands.

— *Cummingii*. 25. Philippine Islands. 1841.

B. M. t. 5762.

— *elegans*.

— *furfuracea*. 30. Java. 1848.

— *limbata*. Java.

— *horrada*. See *Bactris caryotæfolia*.

— *majestica*.

— *maxima*. Java. 1849.

— *mitis*. White. China. 1820.

— *ochlandra*. China.

— *plumosa*.

— *propinqua*. Java. 1850. Wien. Gart. Zeit.

1888, p. 278.

— *purpurea*. 30. Java. 1848.

— *Rumphiana*. Indian Archipelago.

— *sobolifera*. Malaya. 1843. Kerch. Palm.

t. 21.

— *speciosa*. Philippine Islands. 1881.

— *urens*. 50. White. E. Ind. 1788. Jacq.

Fragm. t. 12.

Cascade, or Waterfall, is agreeable only when properly associated with the scenery around. Nothing is more misplaced or tasteless than a sheet of water falling into another uniform collection of water, in an open, unwooded plain. Mr. Whateley justly observes, that a rill cannot pretend to any sound beyond that of a little waterfall. 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 characterizes the water at its first appearance; and the imagination is, at the same time, let loose to give ideal extent to the cascades.

Cascari'la grandifolia. See **Cosmibuena obtusifolia latifolia.**

Ca'shew Nut. *Anacardium occidentale.*

Casea'ria. (Named after *J. Caserius*, the coadjutor of Rheede in producing the *Hortus Malabaricus*. Nat. ord., *Samydaceæ*.)

Stove evergreen trees, chiefly valued for their astringent and medicinal qualities. Cuttings in sand, under a glass, in heat. Light, sandy, fibry loam.

- C. hirsuta.* 8. Yellow, green. Jamaica. 1825.
- parviflora.* 6. Yellowish-green. S. Amer. 1818. Syn., *C. decandra.*
- parvifolia.* 6. Yellowish-green. Martinique. 1827.
- ramiflora.* 4. Yellowish-green. Guiana. 1824.
- serrulata.* 6. Whitish-green. Jamaica. 1818.
- sylostris.* 8. Whitish-green. Jamaica. 1823.

Casimiro'a. (Dedicated to *Cardinal Casimiro Gomez*. Nat. ord., *Rutaceæ*. Allied to *Skimmia*.)

Stove shrub or tree with small flowers and edible fruit. Seeds in a hotbed; cuttings in sandy loam, in heat, and under a hand-glass. Rich loam and fibrous peat.

C. edulis. Green; fruit apple-like. Mexico. 1866. Evergreen tree.

Caspa'ria speciosa. See **Bauhinia petiolata.**

Cassa'ndra. (Name of mythological origin. Nat. ord., *Ericaceæ*.)

A genus of hardy shrubs, seeds, layers, sandy loam or peat.

- C. angustifolia.* 1-2. Snow-white. April. Carolina. 1748. Syns., *C. crispa* and *Andromeda angustifolia.*
- calyculata.* 1-3. Snow-white. April. N. America. 1748. B. M. t. 1286. Syns., *Andromeda calyculata.*

Cassa'va. *Jani'pha ma'nihot.*

Cassebee'ra. (Nat. ord., *Filices*. Allied to *Platyloma*.)

Divisions; peat and loam; hardy greenhouse and stove treatment, according to their native locality.

- C. argentea.* 1. Brown. July. Siberia. 1816. Hardy.
- auriculata.* Brown. July. Stove.
- cuneata.* Brown. July. 1831. Stove.
- farinosa.* 1 1/2. Brown. May. Isle of Luzon. 1840. Stove.
- hastata.* 2. Brown. August. Cape of Good Hope. 1823. Greenhouse.
- intramarginalis.* Brown. September. Mexico. 1828. Greenhouse.
- pedata.* 1/2. Brown. Virginia. 1820. Hardy.
- pinna'ta.* Brown. June. Stove.
- ptero'des.* Brown. July. Cape of Good Hope. 1775. Greenhouse.
- triphyl'la.* Brown. July. 1824. Stove.
- vespertilio'nis.* 3. Brown. August. N. Holland. 1823. Greenhouse.

Ca'ssia. (From the Greek name of a plant, *kassian* of the Bible. Nat. ord., *Leguminosæ*; Tribe, *Cassiææ*.)

Allied to *Cæsalpinia*. Annuals and biennials and perennials by seed, sown in March or April, in heat; the biennials and perennials 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. *C. corymbosa* may be grown against a south wall in summer.

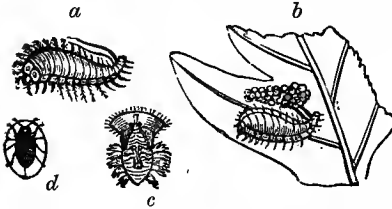
ANNUALS.

- C. æschynoméne.* 1. Yellow. June. W. Ind. 1810. Stove.
- angustissima.* 1. Yellow. July. E. Ind. 1820. Stove.
- a'spera.* 1. Yellow. July. Georgia. 1818. Stove.
- Burma'ni.* 1. Yellow. June. Cape of Good Hope. 1810. Half-hardy.
- lezuosa.* 1. Yellow. July. Brazil. 1810. Stove.
- florib'nda.* 4. Yellow. June. New Spain. 1818. Stove. B. R. t. 1422.
- fl'rida.* 6. Yellow. June. E. Ind. 1820. Stove.
- glandulo'sa.* 5. Yellow. September. W. Ind. 1822. Stove. B. M. t. 3435.
- hi'spida.* Yellow. June. Cayenne. 1826. Stove.
- hu'milis.* 1. Yellow. June. S. Amer. 1800. Stove biennial.
- ita'lica.* 3. Yellow. June. South of Europe. Stove.
- mimoso'des.* 2. Yellow. July. Ceylon. 1806. Stove.
- Telfaire'na.* Yellow. E. Tropical Africa. 1870.
- ni'ctitans.* 2. Yellow. July. N. Amer. 1800. Hardy.
- obova'ta.* 2. Yellow. July. Egypt. 1640. Stove.
- obtusifolia.* Yellow. July. Jamaica. 1732. Stove.
- procu'mbens.* Yellow. June. N. Amer. 1806. Hardy.
- pu'mila.* 1. Yellow. June. E. Ind. 1814. Stove trailer.

- C. Tagera*. Yellow. July. E. Ind. 1803. Stove biennial
 — *Thonnii* *ngii*. Yellow. June. Guinea. 1824. Stove.
 — *triflora*. 1. Yellow. June. W. Ind. 1816. Stove. Jacq. H. Schönb. t. 480.
 — *Wallichii* *na*. 1. Yellow. June. Nepaul. 1817. Stove. Syn., *C. dimidiata*.
- GREENHOUSE EVERGREENS.
C. ægyptiaca. 3. Yellow. May. Egypt. 1822.
 — *artemisioides*. 2. Yellow. June. N. Holland. 1820.
 — *australis*. B. M. t. 2676. Syn., *C. Barrenfeldii*.
 — *Barclaya* *na*. 4. Yellow. July. N. Holland. 1827.
 — *Berte* *ri*. 10. Yellow. June. W. Ind. 1827.
 — *biacapsula* *ris*. 4. Yellow. May. W. Ind. 1739. Syn., *C. Reinwardtii*.
 — *biflora*. 6. Yellow. August. W. Ind. 1766. B. R. t. 1310.
 — *bracteata*. 6. Yellow. August. W. Ind. 1822.
 — *bracteosa*. Orange. Highlands of Angola. 1866.
 — *brevifolia*. Yellow. June. Madagascar. 1824. Brazil. 1869.
 — *calliantha*. 1. Yellow. June. Cape of Good Hope. 1816. B. C. t. 511.
 — *chine* *nsis*. 4. Yellow. June. China. 1807. Jacq. Ic. t. 78.
 — *Flind* *er* *stii*. Yellow. June. N. S. Wales. 1818.
 — *frondosa*. 3. Yellow. April. W. Ind. 1796.
 — *glutinosa*. 3. Yellow. June. N. Holland. 1818.
 — *lined* *ris*. 3. Yellow. June. Carolina. 1800.
 — *marilandica*. 3. Yellow. September. N. Amer. 1723. Hardy herbaceous perennial.
 — *negricans*. 1. Yellow. June. Egypt. 1817.
 — *Reinwa* *rdtii*. See *C. biacapsularis*.
 — *ruscifolia*. 2. Yellow. June. Madeira. 1816. Jacq. Ic. t. 71.
- STOVE EVERGREENS.
C. acapulco *nsis*. 4. Yellow. June. Acapulco. 1823.
 — *ala* *ta*. 12. Yellow. W. Ind. 1731.
 — *apocou* *vi* *ta*. 8. Yellow. Surinam. 1820.
 — *arborescens*. Yellow. May. North Spain. 1818.
 — *atoma* *ria*. 4. Yellow. June. N. Amer. 1810.
 — *auricula* *ta*. 4. Yellow. E. Ind. 1777.
 — *aversiflora*. Yellow. Summer. Brazil. 1825. B. R. t. 2638.
 — *bacilla* *ris*. 3. Yellow. E. Ind. 1782.
 — *chamaecrista*. 1. Yellow. July. America. 1699. B. M. t. 107.
 — *chryso* *tricha*. Yellow. June. Guiana. 1828.
 — *ciliaris*. 1. Yellow. June. E. Ind. 1817. Herbaceous perennial.
 — *cilia* *ta*. 1. Yellow. June. Cuba. 1820.
 — *coquimb* *ensis*. Yellow. Chili. 1888. B. M. t. 7002.
 — *coromandeliana*. 8. Yellow. June. Coromandel. 1823.
 — *corymbosa*. 3. Yellow. July. Buenos Ayres. 1796. B. M. t. 633.
 — *cuspidata*. 4. Yellow. July. S. Amer. 1820.
 — *diphylla*. 2. Yellow. June. W. Ind. 1781.
 — *disspar*. 3. Yellow. S. Amer. 1824.
 — *elliptica*. 5. Yellow. June. Trinidad. 1818.
 — *emarginata*. 15. Yellow. May. Jamaica. 1759.
 — *fastigiat* *a*. 4. Yellow. June. E. Ind. 1818.
 — *gigantea*. Yellow. June. Jamaica. 1825.
 — *glauca*. 4. Yellow. June. E. Ind. 1818.
 — *gracilis*. 2. Yellow. June. Orinoco. 1817.
 — *Herbertia* *na*. 9. Yellow. November. Barbadoes. 1823. B. R. t. 1422.
 — *hirta*. 3. Yellow. August. N. Amer. 1820.
- C. hirsuta*. 4. Yellow. July. America. 1778.
 — *Houstonia* *na*. Yellow. July. Jamaica. 1817.
 — *laevigata*. 3. Yellow. July.
 — *lanceolata*. 1. Yellow. July. Levant. Syn., *C. acutiloba* and *orientalis*.
 — *ligustrina*. Yellow. June. Bahamas. 1726. B. R. t. 109.
 — *lined* *ta*. 1. Yellow. June. Jamaica. 1818.
 — *longistylig* *ua*. 6. Yellow. June. W. Ind. 1800.
 — *lotoides*. 2. Yellow. June. Trinidad. 1820.
 — *macranthera*. 3. Yellow. June. Brazil. 1824.
 — *marginal* *ta*. 3. Yellow. June. Surinam. 1823.
 — *mexicana*. 5. Yellow. June. Mexico. 1824. Jacq. H. Schönb. t. 203.
 — *melanocarpa*. Yellow. June. Jamaica. 1825.
 — *mollesima*. 6. Yellow. S. Amer. 1820.
 — *montana*. Yellow. May. E. Ind. 1822.
 — *multiglandulosa*. Jacq. Ic. t. 72. See *C. tomentosa*.
 — *occidentalis*. 3. Yellow. June. W. Ind. 1759. B. R. t. 83.
 — *Parkeria* *na*. 2. Yellow. August. Demerara. 1817.
 — *patula*. 2. Yellow. August. W. Ind. 1778.
 — *pendula*. 3. Yellow. July. S. Amer. 1820.
 — *penta* *gona*. 1. Yellow. June. Peru. 1700. Herbaceous perennial.
 — *pilo* *sa*. 1. Yellow. June. Jamaica. 1818. Herbaceous perennial.
 — *planistylig* *ua*. 4. Yellow. June. W. Ind. 1822.
 — *polyphylla*. 4. Yellow. June. W. Ind. 1816. Jacq. Ic. t. 460.
 — *pubescens*. 2. Yellow. June. S. Amer. 1812.
 — *pulche* *lla*. 3. Yellow. July. Mauritius. 1825. B. C. t. 1839.
 — *purpurea*. 4. Yellow. July. E. Ind. 1821. B. R. t. 856.
 — *quinquangularis*. 5. Yellow. June. Cayenne. 1818.
 — *ratioid* *ta*. 10. Yellow. August. S. Amer. 1821.
 — *Richardia* *na*. 2. Yellow. July. Cumana. 1823.
 — *robinio* *ides*. 10. Yellow. July. S. Amer. 1823.
 — *senno* *ides*. 3. Yellow. July. E. Ind. 1808. Jacq. Ic. t. 70.
 — *sensitiva*. Yellow. Jacq. Ic. t. 70.
 — *sericea*. Yellow. May. S. Amer. 1731.
 — *Sophora*. 4. Yellow. July. E. Ind. 1658. B. R. t. 856.
 — *speciosa*. 5. Yellow. June. Brazil. 1816.
 — *spectabilis*. 4. Yellow. June. Caraccas. 1820.
 — *stipulacea*. 3. Yellow. Chili. 1781.
 — *sulcata*. 3. Yellow. June. S. Amer. 1820. Syn. *C. cernua*.
 — *sumatran* *a*. Yellow. June. Sumatra. 1823.
 — *tara* *ntan*. 2. Yellow. July. Cumana. 1817.
 — *tene* *lla*. 2. Yellow. July. Orinoco. 1820.
 — *tomentosa*. 15. Yellow. July. S. Amer. 1822. Syn., *C. multiglandulosa*.
 — *uniflora*. Red. June. Brazil. 1824.
 — *venustula*. Yellow. July. Cumana. 1825.
 — *viminalis*. 3. Yellow. W. Ind. 1786.
 — *virgata*. 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



a, larva; b, the same on a leaf, with its canopy of excrement; c, pupa; d, the perfect insect.

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.—*The Cottage Gardener*, iii. 317.

Cassi'ne. (A name given by the North American Indians to a plant now referred to the Holly—*Ilex vomitoria*. Nat. ord., *Celastrinæ*.)

Greenhouse evergreen shrubs; cuttings of half-ripened shoots in sand, under a glass; loam and peat.

- *cæthi'pica*. See *Elæodendron capense*.
- *bar'bara*. See *Elæodendron*.
- *capen'sis*. See *Elæodendron capense*.
- *colpo'on*. See *Elæodendron*.
- *exce'lsa*. 18. White. June. Nepal. 1820.
- *læviga'ta*. See *Elæodendron tricuspidatum*.
- *Mauroce'nia*. 5. White. August. Cape of Good Hope. 1690. Hottentot cherry. Syn., *Mauroenia capensis*.
- *oppositifolia*. 5. White.
- *zylocar'pa*. See *Elæodendron zylocarpum*.

Cassi'nia. (Named after Cassini, a French botanist. Nat. ord., *Compositæ*. 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.

- *aculea'ta*. 2. May. N. Holland. 1820. Greenhouse evergreen. Syn., *C. affinis*.
- *au'rea*. 1. Yellow. July. New South Wales. 1803. Greenhouse herbaceous perennial. B. R. t. 764. Syn., *Angianthus aureus*.
- *denticula'ta*. Pale yellow. Australia. 1826. Greenhouse evergreen.
- *fulv'ida*. White. New Ireland. Gf. 1890, p. 241, f. 56.
- *leptophylla*. 2. White. August. New Zealand. 1821. Greenhouse evergreen. Paxt. Fl. Gard., vol. iii., p. 16.

- *longifolia*. 2. May. N. Holland. 1822. Greenhouse evergreen.
- *specio'sa*. N. S. Wales. Greenhouse herbaceous perennial.
- *spectabilis*. 6. Yellow. July. N. Holland. 1818. Hardy annual. B. R. t. 678.

Cassi'ope. (After a queen of Ethiopia. Nat. ord., *Ericaceæ*.)

Cultivation same as hardy heaths.

- *fastigia'ta*. 3. White. Hardy evergreen. B. M. t. 4796. Syn., *Andromeda fastigiata* and *A. cupressiformis*.
- *hypnoi'des*. 1. White, red. June. Lapland. Half-hardy deciduous creeper. Syn., *Andromeda hypnoides*. B. M. t. 2936.
- *tetra'gona*. 1. White. April. Lapland. 1810. Half-hardy. Syn., *Andromeda tetragona*. B. M. t. 3181.

Castalia. See *Nymphæa*.

C. mystica. See *N. Lotus*.

Castalis flaccida. See *Dimorphotheca tragus*, var. *flaccida*.

Castanea. Chestnut. (From a town of that name in Thessaly. Nat. ord., *Cupuliferae*.)

Hardy deciduous trees; seeds gathered in autumn, preserved in dry sand, and sown in March; deep, sandy loam; varieties by grafting.

- *america'na*. See *C. vulgaris*, var. *americana*.
- *chine'nsis*. 50. Green. May. China.
- *chryso'phylla*. See *Castanopsis chrysophylla*.
- *in'dica*. See *Castanopsis indica*.
- *japo'nica*. See *C. vulgaris*, var. *japonica*.
- *pu'mila*. 12. Green, yellow. July. N. Amer. 1699.
- *vulga'ris*. 50. Green. June. Naturalized in England. Syn., *C. vesca*.
- *albo-margina'tis* and *aureo-margina'tis* are garden varieties of 1886.
- *america'na*. 50. Green. May. N. America.
- *asplenifolia*. 50. Green. May. Europe
- *cochlea'ta*. Green. May.
- *coralli'na-variega'ta*. Green. May. 1846.
- *cuscula'ta*. Green. May. 1846.
- *fo'liis-au'reis*. 50. Green. June.
- *glabra*. Green. May.
- *glau'ca*. Green. June
- *japo'nica*. Young leaves white beneath. Japan. 1885. Syn., *C. japonica*.
- *hu'eida*. Green. May. 1846.
- *me'dia*. 50. Green. June. Europe.
- *Pr'ncei*. Green. May. 1846.
- *pu'mila*. Green. May. 1846.
- *variega'ta*. Green. May.

Chestnut (Spanish, or Sweet).

This, the *Castanea vulgaris* of the above genus, in the southern parts of England is cultivated for its fruit, as well as for the value of its timber. There are several varieties in cultivation in this country, and, of course, many in France and Italy.

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 sheltered 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*, and *opsis*, like; resembling the chestnut. Nat. ord., *Cupulifereæ*.)

C. chrysophylla is a dwarf hardy evergreen shrub; common soil in sheltered situation; cuttings. *C. indica* requires a stove; cuttings in sand under a bell-glass; seeds.

C. chrysophylla. Mexico. 1848. B. M. t. 4953. Syn., *Castanea chrysophylla*.
— *indica*. 40. E. Indies. 1827. Stove evergreen. Syn., *Castanea indica*.

Castanospe'rmum. Morton Bay Chestnut. (From *castanea*, the chestnut, and *sperma*, a seed. Nat. ord., *Leguminosæ*. Allied to *Sophora*.)

Greenhouse evergreen; seeds when procurable; layers and cuttings; deep, loamy soil; greenhouse or conservatory wall.

C. australe. 40. Saffron. Queensland and New South Wales. 1828. Hook. Bot. Misc. I. t. 51.

Caste'la. (After an author named *Castel*. Nat. ord., *Ochnaceæ*. Allied to *Elvasia*.)

The Goatbust, *C. Nichols'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.

C. erecta. 4. Dominica. 1821.
— *Nichols'ni*. 4. Copper. Antigua. 1830. Hook. Bot. Misc. I. t. 56.

Castille'ja. (Named after a Spanish botanist of that name. Nat. ord., *Scrophulariaceæ*. Allied to *Euphrasia*.)

The stove species by cuttings of half-ripe shoots in sand, in bottom-heat, under a glass; loam and peat. Hardy species, by seeds in early March in hotbed, pricking off when ready to handle, planting out in May; light sandy soil in sunny position; very ornamental.

C. coccinea. 1. Scarlet. July. N. America.

1826. B. R. t. 1136. Hardy perennial. Syn., *Euchroma coccinea*.

C. indivisa. $\frac{1}{2}$ to 1. Greenish-yellow; bracts scarlet. Texas. 1878.

— *integrifolia*. 1. New Grenada and Guatemala. 1825. Stove evergreen.

— *lithospermoides*. Scarlet. August. Mexico. 1848. Greenhouse.

— *minuta*. 1. Yellow, scarlet. California. 1874.

— *moranensis*. Mexico. 1825. Prostrate stove evergreen.

— *pallida*. 1. Light purple. July. Siberia. 1782. Hardy herbaceous perennial. Syn., *Bartsia pallida*.

— *septentrionalis*. 2. White, green. August. Labrador. 1824. Hardy annual. B. R. t. 925.

— *serrata*. 1. Blue. June. 1829. Stove evergreen. Syn., *Bartsia coccinea*.

— *sessiliflora*. $\frac{3}{4}$. Greenish. United States. Syn., *C. grandiflora* and *Euchroma grandiflora*.

Casuarina. Beefwood. (Supposed to be derived from the resemblance of the long, weeping, leafless branches to the drooping feathers of the *Cassowary*. Nat. ord., *Casuarineæ*.)

This includes 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. stricta*), and colonists chew them to allay their thirst. From what we know of *C. equisetifolia* in this country we would rank the Beefwoods as amongst the most remarkable for the winter decoration of the conservatory. Greenhouse evergreen trees. Seeds, and cuttings of half-ripened shoots, in April, in sand, under a bell-glass; loam and peat, with a portion of sand, and lumps of charcoal. They might be tried in sheltered places out of doors, especially in the south of England and in Ireland.

C. distyla. 15. Australia and Tasmania. 1812.

— *equisetifolia*. 15. September. North Australia and Queensland. 1776. B. C. t. 607. Syn., *C. muricata*.

— *glauca*. 15. East side of the Bay of Bengal. 1824.

— *muricata*. 15. E. Ind. 1822.

— *nodiflora*. 15. New Caledonia. 1823.

— *stricta*. 15. May. New South Wales. 1775. Andr. Rep. t. 346. Syn., *C. quadrivalvis*.

— *sumatrana*. 4-5. Sumatra. 1882.

— *tenuissima*. 10. N. Holland. 1825.

— *torulosa*. 15. West Australia. 1772.

Catakidozamia. See *Macrozamia*.

Catalpa. (The Indian name. Nat. ord., *Bignoniaceæ*.)

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. bignonioides. 30. White, red. N. America. 1798. There are many varieties of this, such as *aurea*, *foliis argenteis variegatis*, *grandiflora*, *purpurea*.

- C. Bungei*. Greenish-yellow, red. N. China.
 — *heterophylla*. Leaves entire, and lobed.
 — *cassinoides*. Intermediate between *C. speciosa*
 and *C. Bungei*. 1890.
 — *cordifolia*. Probably the same as *C. bigno-
 nioides*. 1890.
 — *Kämpferi*. Yellowish, white, crimson. Ja-
 pan. 1862. B. M. t. 6611.
 — *longissima*. 20. White. W. Ind. 1777. Syn.,
Bignonia longissima.
 — *microphylla*. See *Bignonia microphylla*.
 — *Pottsi*. 6. Pink. Mexico. 1851.
 — *pu'nila*. Wein. Gart. Zeit. 1890, p. 317.
 — *speciosa*. White. June. United States. 1879.
 — *syringifolia*. 20. White. July. N. America.
 1726.
 — *au'rea*. Leaves golden. 1881.
 — *erubescens*. 1869. Syn., *C. erubescens*.
 — *foliis argenteis*. Leaves variegated. 1887.
 — *Thunbergii*. Wein. Gart. Zeit. 1890, p. 318.
 — *umbraculifera*. 12. China. 1888.
 — *Wallichiana*. Thought to be a Chinese form
 of *C. Kämpferi*. Syn., *C. Kämpferi*, var.
nana.

Catana'nche. (From *katanangeke*,
 a strong incentive; in reference to an an-
 cient custom among the Greek women
 of using it in love-potions. Nat. ord.,
Compositæ; Tribe, *Cichoraceæ*.)

Division of the roots in March, and seed sown
 in March or April; common soil.

- C. cærulea*. 3. Blue. August. South Europe.
 1596. Hardy herbaceous perennial. B.
 M. t. 293.
 — *bicolor*. 3. White. Blue. August. Gar-
 dens. 1827.
 — *hu'tea*. 1. Yellow. June. Candia. 1840.
 Hardy annual. Sbth. Fl. Gr. t. 821.

Catase'tum. (From *kata*, down-
 ward, and *seta*, a bristle; referring to the
 position of the two horns of the column.
 Nat. ord., *Orchideæ*; Tribe, *Vandææ*.)

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.

- C. abrup'tum*. 1. Greenish-yellow. September.
 Brazil. 1841.
 — *atra'tum*. 1. Dark. July. Brazil.
 — *Baraquinia'num*. Olive, streaked with brown;
 lip white, streaked with pale brown.
 Brazil. 1862.
 — *barba'tum*. 2. Green, purple. May. Demera-
 ra. 1836. Syn., *Myanthus barbatus*.
 — *immacula'tum*. 2. Green, pink. Septem-
 ber. Demerara. 1835.
 — *labello-a'lbum*. 2. Greenish-white. Sep-
 tember. Demerara. 1835.
 — *probosci'deum*. Brownish-green. May.
 Sertao. 1839.
 — *Bungero'thii*. Creamy-white. Tropical Ame-
 rica. Lind. t. 57.
 — *a'lbum*. White; lip with rose spot.
 1888.
 — *au'reum*. Light yellow. Venezuela. 1887.
 Lind. t. 116.
 — *Pottsia'num*. Petals and lip with purple
 spots. 1887. Lind. t. 104.
 — *Ra'ndi*. Yellow; spur with a deep apric-
 ot-yellow spot. Ill. Hort. t. 117.
 — *callo'sum*. 1. Brownish-yellow. June. La
 Guayra. 1840.
 — *grandiflo'rum*. 1. Green, brown, purple.
 December. Columbia. 1845.
 — *cer'muum*. 12. Pale green. Rio Janeiro. 1882.
 — *Christya'num*. Reddish-brown, ochre. 1882.
 — *chlo'rops*.

- C. Christya'num obscu'rum*. 1884.
 — *citri'num*. Pale yellow. August.
 — *Claveri'ngi*. See *C. tridentatum*, var. *Clav-
 eringi*.
 — *cornu'tum*. Greenish-purple. March. Deme-
 rara. 1840.
 — *costa'tum*. Yellow; lip ribbed. 1887.
 — *crista'tum*. 2. Green. August. Brazil. 1823.
 — *stenose'patum*. Sepals purple-brown;
 petals purple; lip green. Ill. Hort. 34,
 t. 25.
 — *Darwinia'num*. British Guiana. 1888.
 — *deci'piens*. Reddish-brown, yellow. Venezuela.
 1888.
 — *deltoid'eum*. 12. Green, brown. March. De-
 merara. 1842.
 — *discol'o'rum*. 2. Green. Brazil. 1844.
 — *fibria'tum*. Pink. August. Brazil. 1837.
 — *fi'ssum*. 1881.
 — *Haynde'ri*.
 — *Legr'e'li*.
 — *platy'pterum*. Pale green, marked pur-
 ple-brown. 1889.
 — *viridul'tum*. Green, spotted with reddish
 purple. 1887.
 — *floribu'ndum*. See *C. tridentatum*, var. *flori-
 bundum*.
 — *fuligin'o'sum*. Green, purple. August. Mexico.
 1839.
 — *galeri'tum*. Pale green, spotted brown; lip
 yellow inside, striped brown. Columbia?
 1886. Lind. t. 67.
 — *pachy'glossum*. Lip square, thick. 1889.
 — *Garnettia'num*. Light green, spotted choco-
 late; lip white. 1888.
 — *glaucoglo'ssum*. Brown, glaucous. Mexico.
 Gard. Chron. 1885, vol. 24, p. 552.
 — *globiflo'rum*. 1. Olive, brown. June. Mexico.
 1840.
 — *Hooke'ri*. 2. Green, brown. October. Brazil.
 1818.
 — *incu'rum*. Green, purple. Central America.
 1855.
 — *integ'errimum*. Purple, brown. June. Guate-
 mala. 1839.
 — *interme'dium variega'tum*. Black, white,
 yellow. Brazil.
 — *lamina'tum*. Brown, purple. April. Mexico.
 1844.
 — *ebu'rneum*. White, green. April. Mexico.
 1839.
 — *lanco'ferum*. Pure green. March. Brazil.
 1859.
 — *Landsbe'rgii*. 1. Green, purple. June. Carac-
 cas. 1851.
 — *Lehma'nni*. Green, orange-yellow. Colum-
 bia. Gf. t. 1223, a-g.
 — *longiflo'rium*. 2. Orange, violet. August. De-
 merara. 1837.
 — *macroca'rrpum be'lum*. Brown, purple. Bra-
 zil. Gard. Chron. 1886, vol. 25, p. 74.
 — *macroglo'ssum*. Ochre and green, light and
 dark green, light and dark yellow, or
 brownish-purple; very variable. Ecuad-
 or. 1878.
 — *macula'tum integ'errimum*. 3. Green and
 purple-spotted. September. Mexico.
 — *me'dium*.
 — *Mill'e'ri*. 2. Purple-spotted. September. Bra-
 zil. 1837.
 — *na'vo*. White, purple. August. Mexico. 1843.
 — *ochra'ceum*. Yellow. Columbia. 1844.
 — *pha'sma*. Green, purplish-brown, white. Bra-
 zil. 1878.
 — *pilea'tum*. Light red, white. Venezuela. 1882.
 — *pl'a'niceps*. 1. Green and yellow. Spanish
 Main. 1840.
 — *probosci'deum*. Brightish green. Demerara.
 1839.
 — *pu'lchrum*. Light green with chocolate bars,
 yellow. Brazil. 1888.
 — *pu'rum*. 1. Green. October. Brazil.

- C. rosco-altum*. 2. White, red. April. Para. 1836.
 — *Russellia num*. 3. Green. July. Guatemala. 1838.
 — *sacca tum*. Yellow, purple. March. Demerara. 1840.
 — — *pliciferum*. Green, brown, white. Peru. 1869.
 — *sanguineum*. Green, red. October. Central America. 1852.
 — — *integra le*. Lip entire. 1887.
 — *scutrra*. White, green, violet, orange. Demerara. 1872.
 — *semipapertum*. 1. Yellow. November. Brazil. 1826.
 — *serratum*. Green, yellow. September. Panama. 1844.
 — *spinatum*. 1. Green, brown. Brazil. 1840.
 — *tabularre*. Pale green. Guatemala. 1843.
 — — *brachyglottum*. Lip short. 1880.
 — — *laeve*. 1881.
 — — *rhizophorum*. Greenish, brown, white. Columbia. 1880.
 — — *serratum*. Greenish-yellow, dotted red. Andes of Columbia. Gf. t. 1223, h-m.
 — — *virens*. Greenish, purple-brown. 1880.
 — *tapiriceps*. Brown, brown, orange. Brazil. 1888.
 — *tigrinum*. White, cinnamon. 1881.
 — *tridentatum*. 2. Yellow, brown. April. Trinidad. 1822. This sports into the six following, and even into *Waillesi*.
 — — *atropurpureum*. 2. Dark purple. August. Demerara.
 — — *aurum*. 2. Yellow. August. Demerara.
 — — *Claveringi*. 2. Yellow, brown. August. Brazil. 1822. Syn., *C. Claveringi*.
 — — *floribundum*. 2. Yellow, brown. November. Trinidad. 1824. Syn., *C. floribundum*.
 — — *macrocarpum*. 2. Yellow, purple. August. Brazil.
 — — *viridiflorum*. 2. Green. May. Demerara.
 — *trifidum*. 2. Green. June. Trinidad.
 — *trimerocolum*. (Green, red. Mexico. 1863.
 — *tridon*. Yellowish-green. Brazil. 1879.
 — *trulla*. Green, brown. September. S. Amer. 1840.
 — — *maculatisimum*. Brown spots numerous. 1888.
 — — *subimberbe*. Lip not fringed. 1887.
 — *viridiflorum*. 1. Yellow, green. June. S. Amer. 1841.
 — *Waillesi*. 1. Green. September. Honduras. 1840.
 — *Warscewiczii*. Green. April. Panama. 1851.

Catchfly. *Sile'ne*.

Ca'techu. *Aca'cia ca'techu*.

Caterpillar. *Scorpiu'rus*.

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. Boys paid a halfpenny per dozen for leaves having eggs or smaller caterpillars upon them, have been found to keep a garden free for a whole season for about seven shillings.

Catesbæ'a. Lily Thorn. (Named after *M. Catesby*, author of a Natural History of Carolina. Nat. ord., *Rubiaceæ*; Tribe, *Catesbææ*. Allied to *Pentagonia*.)

Stove evergreens. Cuttings in sand, under a glass, in heat, in April. Sandy loam and fibry peat.

C. latifolia. 5. Yellow. June. W. Ind. 1823. B. R. t. 858.

— *Lindeni'na*. 2. July.

— *parviflora*. 2. White. June. Jamaica. 1810.

— *spinosa*. 12. Yellow. June. Isle of Providence, Bahamas. 1726. B. M. t. 131.

Ca'tha. This genus has now been united to *Celastrus*.

Catharanthus. See *Vinca*.

Cathcartica. (In honour of *J. F. Cathcart, Esq., B.C.S.*, Judge of Tirhoot. Nat. ord., *Papaveraceæ*.)

A hardy herbaceous perennial, useful for shady spots on rockery; rich peaty soil; seeds and division.

C. villosa. 1. Yellow. June. Sikkim-Himalaya. 1850. B. M. t. 4596.

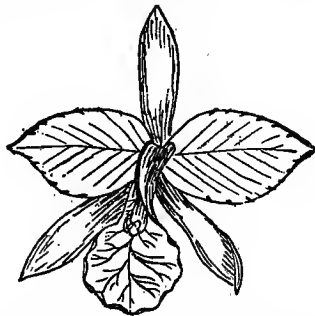
Cat-mint. *Nepeta*.

Cat-thyme. *Teu'crium ma'rum*.

Catteridge-tree. *Euc'onymus euro'pæus*.

Ca'ttleya. (Named after *Mr. Cattley*, a distinguished patron of botany. Nat. ord., *Orchideæ*; Tribe, *Epidendrea*—*Labiææ*.)

Stove orchids. Divisions. Moss, peat, and broken pots, either in shallow baskets, or raised above the surface of the pot.



C. Acklandia. †. Purple, brown. July. Brazil. 1839.

- C. amethystoglossa*. White, rosy-purple. Brazil. 1862.
- *sulphu'rea*. Sepals and petals lemon-yellow, lip cream colour. 1866.
- *av'rea*. New Grenada. Ill. Hort. 1881, t. 81. Syn., *C. labiata Dowiana aurea*.
- *marmorata*. Rose, crimson, yellow. 1888.
- *Arenbergii*. Lilac. July. Brazil. 1842.
- *Ballantiniæ* na. Hybrid between *C. Trianae* and *C. Warscewiczii*. 1890. Rchb. t. 91.
- *bi'color*. 1. Olive-green. September. Brazil. 1837. There is a variety with a white-margined lip named *Measuresia* na.
- *bogoten'sis*. White, yellow. New Grenada. 1866.
- *Boissie'ri*. Lilac, yellow. Columbia. 1873.
- *Bowringia* na. Purple, maroon, white. Central America.
- *Brymeria* na. Purplish-rose, lilac, magenta, orange. Brazil. 1883. Natural hybrid? Warn. Orch. Alb. t. 184.
- *bulbosa*. ½. Rose, purple. April. Brazil. 1846.
- *Bulke'ri*. A form of *C. Trianae*. Rev. Hort. 1886, p. 444.
- *calumna'ta*. Blush-pink, spotted violet. Hybrid between *C. Acklandiæ* and *C. intermedia*, var. *amethystina*. 1883. Rev. Hort. 1883, p. 564.
- *ca'ndida*. White, pink. Brazil. 1838.
- *Cassa'ndra*. Garden hybrid. 1888.
- *Chamberlainia* na. Purple. Garden hybrid, between *C. Leopoldi* and *C. Dowiana*. 1881.
- *choco'e'nsis*. Yellow, purple. Columbia. 1873.
- *citr'i*. Citron. April. Mexico. 1838.
- *citrino-interme'dia*. Garden hybrid. 1888.
- *cocci'nea*. See *Sophronitis grandiflora*.
- *cri'spa*. 1. White, purple. September. Brazil. 1826.
- *grandiflo'ra*. White, crimson, orange. 1882.
- *viola'cea*. Deep violet and white. Guiana. 1850.
- *croca'ta*. White, orange.
- *Davos'ni*. Yellow, crimson. Brazil. 1863.
- *dolo'sa*. See *C. Walkeriana*, var. *dolosa*.
- *doming'e'nsis*. April. St. Domingo. 1844.
- *Dormannia* na. See *Lælia Dormanniana*.
- *Dowia* na. Straw, purple. Costa Rica. 1866. Derived from *C. labiata*.
- *chrysol'o'za*. Bright yellow; lip blotched gold, veined dark crimson-purple. Rchb. t. 71.
- *Duke's* na. 2. Light ochre, mauve-purple; lip white, mauve-purple and yellow. 1887.
- *ela'tior*. 1. Green-spotted. Brazil. 1827.
- *eldora'do*. White, purple, orange. Central America. 1869.
- *orna'ta*. Purple, tipped with a darker shade. 1883.
- *sple'ndens*. Rose, orange, white, violet. Rio Negro. 1870.
- *virg'ina'lis*. Warn. Orch. Alb. t. 388. See *C. virginialis*.
- *d'legans*. Purple and white. Brazil. 1852.
- *exoni'e'nsis*. Garden hybrid. 1874.
- *flav'ola*. Garden hybrid. 1888.
- *Forbe'sii*. ¾. White, yellow. June. Brazil. 1823.
- *Gaskellia* na. A form of *C. labiata*.
- *pi'eta*. Sepals and petals variegated. 1890.
- *g'igas*. Rose, purple, yellow. Tropical America. 1873. Garden. 1882. May. 20.
- *granulo'sa*. 1. Whitish-green. May. Guatemala. 1841.
- *aspera'ta*. Brownish spotted purple, yellow. 1886.
- C. granulo'sa Buyssonia* na. Ivory white. G. C. 1890, vol. 8, p. 588.
- *Russellia* na. 1. Green, white, orange. May. Mexico. 1839.
- *Schofieldia* na. 2. Greenish-yellow; lip whitish, and amethyst-purple. 1879. Syn., *C. Schofieldiana*, Warn. Orch. Alb. t. 93.
- *guatemal'e'nsis*. Buff, purple, crimson. Guatemala. 1861.
- *Wischnusenia* na. Rose-purple, brown, yellow. Panama. 1888.
- *gutta'ta*. 1. Green, red. April. Brazil. 1827.
- *ela'tior*. April. Brazil. 1827.
- *immacula'ta*. Mauve brown; lip white, front lobe purple.
- *Ketele'ri*. 2½. Blush-white, violet-rose. 1875.
- *leopardi'na*. Spotted dark brown; lip white, front lobe purple-red. Lind. t. 19.
- *Leopoldi odorati'ssima*. Yellow, purple. 1888.
- *lilaci'na*. Pale lilac. 1881.
- *mu'nda*. Greenish to yellow. 1888.
- *phœnicoptera*. Deepest purple; lip whitish. 1883.
- *Pr'i'ncipi*. White, spotted with purple; lip, amethyst-coloured. Brazil. 1866.
- *punctula'ta*. Sulphur, purple. 1880.
- *Russellia* na. Green, red. August. Brazil. 1838.
- *Williamsia* na. Purple, white. 1884.
- *Hardya* na. Rosy-mauve; lip magenta, yellow. Columbia. Warn. Orch. Alb. t. 231.
- *Harr'i'sii*. Amethyst dotted purple; white, sulphur, purple. Hybrid between *C. Mendelii* and *C. guttata*. 1887.
- *Harris'onia*. 1. Rose, yellow. April. Brazil. Syn., *C. Loddigesii*, var. *Harrisonia*.
- *Regnellia* na. Purple, yellow. 1888.
- *viola'cea*. Violet. 1881.
- *hybrida*. Garden hybrid.
- *interme'dia*. 1. Rose, white. April. Brazil. 1824.
- *angustifolia*. 1. Light purple. September. Brazil. 1836.
- *ca'ndida sple'ndida*. White; front lobe of lip carmine-purple. Rio Janeiro. 1890. Cf. t. 1813.
- *Gibe'zia*. White, orange. 1883. Syn., *C. Gibeziæ*.
- *pa'lida*. 1. Light red. June. Brazil. 1833.
- *Parthe'nia*. White. 1888.
- *purpu'rea*. Purple.
- *variega'ta*. 1. White, red. May. Brazil. 1843.
- *intrica'ta*. Pale rose, purple. 1884.
- *macula'ta*. Rosy with purple spots. Natural hybrid between *C. intermedia* and *C. guttata*? Brazil. 1890.
- *iri'color*. Sulphur, orange, violet. 1874.
- *irora'ta*. See *Lælia*.
- *Kimballia* na. Pale rose; lip white, yellow, purple. Venezuela. 1887. Lind. t. 89.
- *Krameria* na. Pale rose; lip white, purple. 1888.
- *labi'a'ta*. 1. Crimson, lilac. May. Brazil. 1818.
- *alba*. White.
- *atro-purpu'rea*. Lilac, purple. November. La Guayra. 1839.
- *atro-sangui'nea*. 1. Dark red. July. S. Amer.
- *autumna'lis*. Rose-purple, white. Autumn. Lind. t. 112.
- *be'lla*. Mauve, white, yellow. 1882.
- *brillianti'ssima*. Bright rose, maroon-purple, yellow. 1885.

- C. labiata choocensis*.
 — *crocata*. White, or pale rose, deep orange. 1886.
 — *delicata*.
 — *Dowia*'na. Nankeen yellow, crimson-purple. Syn., *C. Dowiana*, B. M. t. 5618.
 — *eldorado*. Fl. Ser. t. 1826. See *C. eldorado*.
 — *Gaskellia*'na. Rosy-purple, petale darker at tip. There are several forms of this.
 — *la'cera*. White, purple. Central America. 1869.
 — *leucophæa*. Pale rose, yellow. 1888.
 — *magnifica*. Rosy-purple, yellow. 1888.
 — *ornata*. Purple, deeper at tips.
 — *Percivalia*'na. Deep purple. W. South America. 1882. There is a variety *belli*. 1888.
 — *picata*.
 — *Pitche'ri*. Lip pale, with purple blotch. 1866.
 — *regi*'na. Rosy-purple, yellow. 1884. Syn., *C. speciosissima*, var. *regina*.
 — *Roe'zlii*. Purple, yellow. Columbia. 1874.
 — *Rucke'ri*. Rose; lip entirely dark rose.
 — *Sanderia*'na. Light purple, gamboge, whitish. 1882.
 — *Schroederia*'na. White, lip striped with mauve and orange.
 — *splendens*. Deep rosy-purple. Ill. Hort. 1870, t. 7.
 — *Triana*'na. See *C. Triana*.
 — *virginatis*. White. Ill. Hort. 1876, t. 257.
 — *Warne'ri*. Pale rose, amethyst, purple, orange-yellow.
 — *Warocquea*'na. Rosy-mauve; lip crimson-purple, yellow. S. America. 1890.
 — *Wilsonia*'na. Amethyst, dark purple, yellow. 1887.
 — *Laurencia*'na. Purple-lilac, yellow. British Guiana. 1885.
 — *color*. Light purple.
 — *oculata*. Centre of lip buff.
 — *rosea-superba*. Rosy-purple, striped white.
 — *Lemonia*'na. 3. Rose, yellow. August. Brazil. 1842.
 — *Leopoldii*. 1. Yellow, crimson. Brazil. 1852.
 — *Lindéni*. Rose, veined white; lip magenta, bright yellow.
 — *Lindleya*'na. Rose. Bahia. 1864.
 — *lobata*. Purple, violet, and crimson veins. Brazil. 1847.
 — *Loddige'sii*. 1. Rose, lilac. August. Brazil. 1815.
 — *ca'ndida*. White; disc of lip yellow.
 — *Harrisonia*'na. See *C. Harrisonia*.
 — *maculata*. Flowers dotted with purple.
 — *viola'cea*. Deep violet-purple.
 — *Lucientia*'na. Brown, purple; lip purple, yellow.
 — *lutea* is a name given by error in some works for *Cautleya lutea*.
 — *tute'ola*. $\frac{1}{2}$. Light yellow. November. Brazil. 1853.
 — *Roe'zlii*. Pern, 1881.
 — *Mangle'sii*. Purple; lip white and ochre. Garden hybrid. 1880.
 — *marginata*'na. $\frac{1}{2}$. Pink, crimson. November. Brazil. 1843.
 — *maritima*. Lilac, white. Buenos Ayres.
 — *Massata*'na. Roey-mauve, magenta, yellow.
 — *Massangeana*'na. A form of *C. labiata*, var. *Triana*.
 — *ma'xima*. $1\frac{1}{2}$. Dark pink. May. Guayaquil. 1844.
 — *a'ba*. White; lip marked yellow and purple.
 — *aphelibia*. Lip not reticulated, disc yellow. Ecuador. 1884.
 — *malona*'na. Dark purple. 1889. Lind. t. 211.
- C. ma'xima Marchetia*'na. Rosy-purple, magenta, yellow. Ecuador and Peru. 1889. Warn. Orch. Alb. t. 404.
 — *Measure'sii*. Reddish-brown; lip pale rose. Garden hybrid. 1886.
 — *Mende'lii*. Lip mauve. 1884.
 — *belli*. Warn. Orch. Alb. t. 225. A synonym of *C. labiata*, var. *bella*.
 — *pulcherrima*. White tinged lemon and peach-colour. 1881.
 — *Mo'ssiae*. 1. Crimson, lilac. July. La Guayra. 1836. A form of *C. labiata*.
 — *a'ba*. White and purple. Brazil.
 — *Arnoldia*'na. Palest rose, orange, sulphur.
 — *au'rea grandiflora*. Garden variety. 1887.
 — *Boussiesia*'na. Marbled with rosy-purple. 1889. Lind. t. 185.
 — *Hardya*'na. Lilac, purple. La Guayra. 1884. Warn. Orch. Alb. t. 125.
 — *reticulata*. Lip veined with crimson.
 — *varia bilis*. Blue to rose. 1888.
 — *Warocquea*'na. White tinged rose, orange. 1889. Lind. t. 192.
 — *Nilso*'ni.
 — *nobilior*. Ill. Hort. t. 485. See *C. Walkeriana*, var. *nobilior*.
 — *Obriventa*'na. Rose. 1890.
 — *odoratissima*. Purple. Demerara. 1836.
 — *pal'lida*. 1. White, pink, yellow. Tepic. 1850.
 — *Papeiansia*'na.
 — *Percivalia*'na. Rosy-lilac, lip-magenta, crimson. January. N. Brazil. 1882.
 — *Reichenbachii*. Mauve-purple, lip yellow veined red. Lind. t. 39.
 — *Perrinii*. 1. Purple. Brazil.
 — *Pinellia*'na. Doubtful whether this and *pu'mila* are not identical with *marginata*.
 — *porphyroglossa*.
 — *punctata*. Crimson spotted.
 — *porphyrophyllobia*. Pale mauve, yellowish. Hybrid between *C. intermedia* and *C. superba*. 1886.
 — *pu'mila*. See *Lælia pumila*.
 — *quadricolor*. White, yellow, purple, lilac. New Grenada. 1865.
 — *Regne'lii*. $\frac{1}{2}$. Purple, green, pink. Brazil. 1859.
 — *Reineckia*'na.
 — *superbissima*. White. 1884.
 — *resplendens*. Olive-brown, spotted purple; lip white, amethyst. 1885. Natural hybrid?
 — *re'x*. White; lip purple, veined with gold, and fringed with white. This is the most handsome plant of the genus. 1890. Probably a variety of *C. aurea*. Lind. t. 265.
 — *Roe'zlii*. A synonym of *C. labiata*, var. *Roezlii*.
 — *Rucke'ri*. White, yellow. 1866.
 — *Schilleria*'na. Reddish-brown, purple, white. Brazil. 1887.
 — *Amalia*'na. Lip white with bright purple veins and yellow disk. Brazil. 1887. Lind. t. 108.
 — *Schofieldia*'na. A variety of *C. granulosa*.
 — *Schroederia*'na. Light purple, lip with orange disk. 1887. Syn., *C. Schroedera*.
 — *sc'ta*. Pale ochre, blotched purple, lip purple, sulphur, white. 1886.
 — *Skinne'ri*. $1\frac{1}{2}$. Rosy-purple. August. Guatemala. 1836.
 — *a'ba*. White, sulphur. Costa Rica. 1877.
 — *a'tro-rosea*. $1\frac{1}{2}$. Dark rose. May. Guatemala. 1836.
 — *oculata*. Lip with maroon-purple blotch.
 — *soro'ria*. Greenish, yellow, white, purple. Brazil. 1887. Warn. Orch. Alb. t. 307.
 — *speciosissima*.
 — *Buchania*'na. Rosy-lilac, lip magenta,

- yellow. Venezuela. 1887. Warn. Orch. Alb. t. 261.
- C. speciosissima* Lo'vii. Flesh, amethyst, yellow. Venezuela. 1868. A very fine form.
- *malona'na*. Rose-purple, lip veined darker. Lind. t. 47.
- *sua'vior*. Bright rose, lip pale lilac, purple. Hybrid between *C. intermedia* and *C. Mendelii*.
- *supe'ra*. 1. Purple. May. Guiana. 1838.
- *a'iba*. Pure white. Brazil. 1890.
- *sple'ndens*. Rose, violet, white, yellow. Rio Negro. 1870.
- *Tria'na*. Pale purplish, deep purple, yellow. Cordilleras of Quindiu. 1860.
- *A'nnæ*. Rosy-purple, white, yellow. Lind. t. 31.
- *Colema'nni*. Rosy, crimson. Columbia. 1875.
- *Dodgso'ni*. Pink, crimson, pale yellow. 1882.
- *Emi'licæ*. Light blush, lip deep crimson-plum, yellow. 1884.
- *formosa*. Colours deep and rich. 1880.
- *fulgens*. Lip rich crimson. 1890.
- *Haraya'na*. White, purple, ochre. 1879.
- *Hoolea'na*. Lip rich magenta-purple, orange-yellow. New Grenada. Warn. Orch. Alb. t. 265.
- *Leea'na*. Rose, throat pure white. 1884.
- *margina'ta*. Lip rich crimson edged with white. 1890.
- *Massangea'na*. Warn. Orch. Alb. t. 242. A variety of *C. labiata*.
- *Osma'nni*. Mauve, deep purple, yellow. Columbia. 1879.
- *pa'llida*. Pale rose, disk of lip yellow. 1890. Lind. t. 231.
- *Popa'yan*. Lilac. 1884.
- *purpura'ta*. Light mauve, lip magenta with yellow throat. 1890. Lind. t. 229.
- *ro sea*. Rose, with orange throat. 1883.
- *Russellia'na*. Pale mauve, magenta, yellow. Columbia. 1884. Warn. Orch. Alb. t. 219.
- *Schroederia'na*. Green blotch at base of column.
- *splendidi'ssima*. White, lip magenta, orange. 1884.
- *stria'ta*. Rosy-purple, midrib-carmine, lip carmine with yellow disk. 1890. Lind. t. 232.
- *Vanneria'na*. Striped orange, lip purple, orange, light rose.
- *Ve'sta*. Whitish. 1880.
- *veluti'na*. Olive-green, purple, rose. Brazil. 1870.
- *triphtha'lma*. 1½. Rosy-purple, pale yellow. Garden hybrid. 1882.
- *veluti'na Lie'tzei*. Dusky orange, spotted purple; lip white, veined purple. Brazil. 1888. Gff. t. 1265.
- *puncta'ta*. Flowers larger, more thickly dotted; lip edged yellow. Brazil. 1888.
- *virginalis*. White, yellow. Amazons. 1877. Lind. t. 101. Syn., *C. eldorado*, var. *virginalis*.
- *Walkeria'na*. Lilac, crimson. May. Brazil. 1844.
- *dola'sa*. The side lobes of the lip overlap half their length.
- *nobitior*. The side lobes of the lip overlap their entire length. Syn., *C. nobiltior*.
- *Schroederia'na*. Rosy-purple, marked with darker purple.
- *Walli'sii*. White, yellow. Brazil. 1882.
- *Warneri*. Mauve, crimson, white. Brazil. 1862.
- *Warocquea'na*. See *C. labiata*, var. *Warocqueana*.
- *Warscewiczii*. Rose, purple, orange. New Grenada. 1867.

- C. Warscewiczii delicata*. White, lip rosy-lilac, with orange blotch.
- *Whitiei*. Brazil. 1882.
- *Wilsoniana*. Purple, white, yellow, violet. 1877.
- *zenobia*. Garden hybrid. 1887.

The following are hybrids of this genus:—*C. Acla'ndi-Loddige'sii*, *C. Braba'ntia*, *C. devonie'nsis*; *C. Dominia'na*, and its vars. *a'iba*, and *tu'tea*; *C. ezonie'nsis*, *C. jau'sta*, *C. je'lix*, *C. Mangie'sii*, *C. Marde'llii*, *C. Masterso'nice*, *C. Mitche'li*, *C. pictura'ta*, *C. quinque color*, *C. Sidneria* na, *C. Veitchia'na*.

Cauliflower. *Bra'ssica olera'cea*, variety *cauliflo'ra*.

Varieties.—There are many to be found in local catalogues; but they are only different names for the following:—*Early London*, *Early Erfurt*, and *Walcheren*. *Large Asiatic*, *Veitch's Autumn Giant*, and *Dwarf Mammoth*, are also desirable varieties.

Sowing.—There are three seasons for sowing this vegetable.

First Sowing.—For the first main crop, a sowing should be made about the third week in 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 as to encourage the growth of the seedlings. As soon as these are up 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 apart 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, etc., 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, etc. 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 in the early 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 is said to boil 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 dry 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 at the bottom of 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 cover 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 future tying of the flowering stems up to. Gather each branch of seed as it ripens.

Diseases and Insects.—See **Cabbage and Broccoli.**

Caulophyllum. (From *kaulon*, a stem, and *phyllon*, a leaf; in reference to the stems ending as if it were in a leaf-stalk. Nat. ord., *Berberideæ*.)

Hardy tuberous perennial; division of the roots seeds; light, sandy peat.

C. thalictroides. Yellow, green. N. Amer. 1755.

Cautleya. (After *Mr. Cautley*, an Indian botanist. Nat. ord., *Scitamineæ*.)

Stove herbaceous perennial.

C. lutea. 1. Yellow. July. Nepal. 1821. Syns., *Roscoea gracilis* and *lutea*. B. M. t. 6991. In some books this has been erroneously quoted as *Cattleya lutea*.

Cavendishia. (After *Henry Cavendish*, a famous chemist. Nat. ord., *Vacciniaceæ*.)

Handsome stove evergreen, subsucculent shrubs same culture as *Thibaudia*.

C. acuminata. Scarlet, tipped yellowish-green. Andes of Ecuador. Syn., *Thibaudia acuminata*, B. M. t. 5752.

— *cordifolia.* Red, white. New Grenada. 1866. Syn., *Thibaudia cordifolia*. B. M. t. 5559.

— *spectabilis.* White, shaded pink. Columbia. 1899.

Ceanothus. (From *keanothus*, a name applied by Theophrastus to a plant now not known. Nat. ord., *Rhamnaceæ*.)

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.

HARDY DECIDUOUS.

C. americanus. 2. White. July. N. Amer. 1713. B. M. t. 1479.

— *herbaceus.* 2. White. August. Carolina. 1822. Syn., *C. perennis*.

— *intermedius.* 2. White. June. N. Amer. 1812. Syn., *C. intermedius*.

— *tardiflorus.* 3. White. September. N. America. 1820. Syn., *C. tardiflorus*.

— *variegatus.* Leaves bordered with yellow. 1839.

— *collinus.* 1. Light. July. N. Amer. 1827. Evergreen.

— *cuneatus.* 4. California. 1848.

— *dentatus.* 3. Blue. California. 1848.

— *divaricatus.* 4. Blue. June. California. 1848.

— *elegans.* Blue. California. 1861.

— *floribundus.* Blue. June. California. B. M. t. 4806.

- C. intermedium*. See *C. americanus*, var. *intermedium*.
 — *Lobbia' nus*. Blue. July. S. California. B. M. t. 4810.
 — *microphyllus*. 2. White. June. N. Amer. 1806.
 — *nepalensis*. 10. Yellow. Nepaul. 1820.
 — *oreganus*. 12. White. May. Oregon.
 — *ovatus*. 3. White. Texas. 1888.
 — *ovatus*. 3. White. July. N. Amer. 1818.
 — *pa'llidus*. 10. Pale blue. July. N. Amer.
 — *papillo'sus*. 8. Blue. California. 1848.
 — *perennis*. See *C. americanus*, var. *herbaceus*.
 — *prostratus*. Blue. Oregon. 1889.
 — *rigidus*. 4. Blue. Californ a. 1848.
 — *sanguineus*. 2. White. June. Missouri. 1812.
 — *tardiflorus*. See *C. americanus*, var. *tardiflorus*.
 — *Veitchianus*. Blue. California.
 — *velutinus*. 10. White. November. Oregon.
 — *verrucosus*. 3½. White. South California. April.

GREENHOUSE EVERGREENS.

- C. africa' nus*. Pale yellow. March. Cape of Good Hope. 1712.
 — *azu'reus*. 10. Pale blue. April. Mexico. 1818. Syn., *C. cœruleus*.
 — *fo're-alba*. 10. White. April.
 — *grandiflorus*. 1881.
 — *huiciflorus*. White. April. Mexico. 1824.
 — *capensis*. 3. White. June. Cape of Good Hope. 1823.

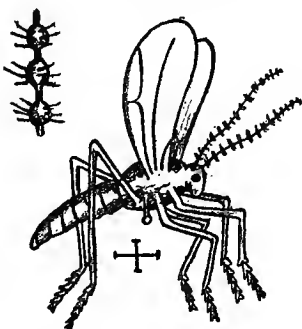
STOVE EVERGREENS.

- C. Arno'ldi*. 1882.
 — *infestus*. 4. Mexico. 1824.
 — *laevigatus*. 4. Green, yellow. W. Ind. 1818.
 — *latiflorus*. 1881.
 — *macrocarpus*. 5. Yellow. July. Mts. of St. Barbara, California. 1824.
 — *Mocinia' nus*. 5. Mexico. 1824.
 — *mystacinus*. 13. White, green. November. Africa. 1775.
 — *sphaerocar'pus*. 15. Green, yellow. Jamaica. 1824.
 — *zeylanicus*. 3. White. Ceylon. 1818. Syn., *Celastrus zeylanicus*.

Cecido'mya. To this genus belongs the Hessian Fly, *Cecido'mya destruc'tor*, which has proved a great pest to farmers by attacking the growing straw of Wheat, Barley and Rye. It first made its appearance in this country in 1886, when it caused serious damage to the crops in the eastern and southern counties. The perfect fly is about an eighth of an inch long, and has a single pair of wings of a smoky-grey colour, and long antennæ. The minute reddish eggs are deposited in the lower leaf-sheaths of the straw, and in due time produce white legless maggots, having on the underside near the head a protuberance, termed the "anchor process," the use of which is not known. By sucking the juices from the plant, the straw becomes weakened and bends at this point. In about a month the maggots assume the chrysalis state, which is flat and brown, and popularly known as "flax-seed." From this the flies appear eitner in autumn or the succeeding spring.

Cecido'mya (Diplosis) pyri'vora, is the

Pear Midge. It lays its eggs (ten to twenty in number) in the pear blossom, when it appears about April, from which the larvæ are hatched in about four days. The larvæ escape or fall



with the undeveloped pear to the ground, where they attain their full size by May, and assume the winged state the following December or January. It was extremely abundant in 1883. The body is blackish, the wings ashy. Our figure shows a male, and three joints of one of its antennæ much enlarged. The antennæ of the male are twenty-six jointed, those of the female fourteen.

Cecro'pia. Snake-wood. (A classical name, after *Cecrops*, first king of Athens, who built that city, and called it Cecropia. Nat ord., *Moreæ*; Tribe, *Artocarpeæ*.)

All the *Atrocarpads* abound in milky juice, by which they are easily distinguished from the *Nettleworks*, with which they are allied. From many of the genera, and from *C. pelta'ta*, caoutchouc, or India rubber, is obtained. Ornamental stove evergreen trees; cuttings of ripened shoots, placed in sandy peat, under a bell-glass, and in a moist bottom-heat, in April; peat and loam in a rough state with a little sand.

- C. cœcolor*. 20. Brazil. 1828.
 — *dealba'ta*. New Grenada. Stove.
 — *frigida*. Columbia. 1873. Half-hardy.
 — *palma'ta*. 20. Brazil. 1820.
 — *pelta'ta*. 30. Jamaica. 1776.

Cedre'la. (From *cedrus*, the cedar-tree, on account of the wood having an aromatic scent like that of the cedar. Nat. ord., *Meliaceæ*.)

Stove or greenhouse trees. Cuttings of the ripened shoots, in sand, under a hand-glass, in bottom-heat. Rich loam and leaf-mould, or a little peat.

- C. odorata*. 50. Whitish. Summer. West Indies. 1739.
 — *sine'nsis*. China. 1875. Syn., *Ailantus flavescens*.
 — *Too'na*. 60. White or pink. Summer. India. 1823.
 — *velutina*. 50. White. India. 1793.

Cedrone'lla. (A diminutive of *kedron*, the cedar; referring to the fragrant, resinous scent. Nat. ord., *Labiatae*; Tribe, *Nepeteæ*. 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, sage, rosemary, mint, balm, and hyssop, etc. Greenhouse plants. Divisions of the roots of the herbaceous species; cuttings of the evergreen; sandy loam and a little peat.

- C. ca'na*. 3. Crimson; anthers blue. July. New Mexico. 1851. B. M. t. 4618.
 — *corda'ta*. 1. Purple. July. N. Amer. 1824. Syn., *Dracocephalum cordatum*.
 — *mexica'na*. 2. Purple. Mexico. Syns., *Dracocephalum mexicanum* and *Gardouquia betonicoides*. B. M. t. 3860.
 — *pa'ulida*. 14. Rose. September. Mexico. 1844. B. R. 1846, t. 29.
 — *triphy'lia*. Pale purple. July. Canaries. 1897. This is a greenhouse evergreen shrub; but all the others are herbaceous perennials. Syns., *C. canariensis* and *Dracocephalum canariense*.

Ce'drus. The Cedar. (From the Arabic *kedron*, or *kedree*, power; in reference to its majestic appearance; but some have supposed from *Cedron*, a brook in Judea. Nat. ord., *Coniferae*.)

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 sand soil, in March; the *C. Deoda'ra* by inarching and grafting on the common Cedar, and on the Larch; but it is doubtful if the latter will answer well as a stock; deep, sandy soil.

- C. africa'na*. See *C. Libani*, var. *atlantica*.
 — *Deoda'ra*. 120. Nepal. 1822. Pin. Wob. t. 48-9. Deodar or Indian Cedar. There are other varieties of this—*crassifo'lia*, *temifo'lia*, and *vi'ridis*.
 — *li'bani*. Levant. 1683. Cedar of Lebanon. Laws. Pin. Brit. t. 33.
 — *atta'ntica*. May. Mount Atlas. 1843. Mount Atlas Cedar. Laws. Pin. Brit. t. 21. Syn. *C. africana*.
 — *deci'dua*. Leaves deciduous. 1870.
 — *fastigia'ta*. Pyramidal with ascending branches. Rev. Hort. 1890, p. 32, f. 9.
 — *fo'lis-argen'teis*. 80. May.
 — *na'na*. Dwarf. There are other varieties of this species, as *glau'ca*; *interme'dia*; *pe'n'dula*; *pyramida'tis*; and *pyramida'tis argen'teis*.

Celandine. *Chelido'nium ma'jus* and *Bocco'nia frute'scens*.

Cela'strus. Spindle or Staff-tree. (From *kelas*, the latter season; referring to the fruit hanging on the trees all winter. Nat. ord., *Celastrineæ*.)

Cuttings of the half-ripened shoots in sand, under a glass; peat, and very sandy, fibry loam. The stove and greenhouse species require the treatment common to each department. The hardy species may be propagated by layers in autumn, and *sea'ndens* by seeds; *bulle'tus* seldom ripens its seeds. Deep, loamy soil for those hardy climbers.

HARDY DECIDUOUS CLIMBERS.

- C. bulla'tus*. 20. White. July. Virginia. 1759.
 — *sea'ndens*. 15. Yellow. May. N. Amer. 1736.

STOVE EVERGREEN SHRUBS.

- C. cri'spulus*. China. Gf. t. 812, f. 1-5.
 — *mexica'nus*. 7. Mexico. 1824.
 — *multifo'lus*. 4. White. May. South Europe. 1816.
 — *myrtifo'lus*. 20. White. May. Jamaica. 1810.
 — *nu'tans*. 5. White. E. Ind. 1810. Climber.
 — *panicula'tus*. 3. Greenish. May. E. Ind. 1841.
 — *quadrangula'ris*. 10. White. Brazil. 1820.
 — *trigy'nus*. 5. May. Isle of France. 1824.

GREENHOUSE EVERGREEN SHRUBS.

- C. buxifo'lus*. 4. White. May. Cape of Good Hope. 1752. B. M. t. 2114.
 — *cassinoides*. 4. White. August. Canaries. 1779.
 — *ce'rreus*. 5. White. May. Cape of Good Hope. 1817.
 — *cymo'sus*. 3. White. July. Cape of Good Hope. 1815. B. M. t. 2070.
 — *emargina'tus*. See *C. retusus*.
 — *flexuo'sus*. 6. White. May. Cape of Good Hope. 1826.
 — *ilici'nus*. 3. White. Cape of Good Hope. 1817.
 — *lauri'nus*. 3. White. June. Cape of Good Hope. 1818.
 — *linea'ris*. 4. White. May. Cape of Good Hope. 1818.
 — *lu'cidus*. 2. White. May. Cape of Good Hope. 1722.
 — *lycioi'des*. White. August. Canaries. 1821.
 — *macroca'rpus*. White. Peru. 1826.
 — *oleoi'des*. 3. White. May. Cape of Good Hope. 1824.
 — *pteroca'rpus*. 3. White. July. Cape of Good Hope. 1824.
 — *puncta'tus*. Greenish. Japan. 1817. Climber. Gf. t. 312, f. 6.
 — *pyrao'anthus*. 3. White. May. Cape of Good Hope. 1742. B. M. t. 1167.
 — *retu'sus*. 6. Yellow. Peru. 1824. Syn., *C. emarginatus*.
 — *ri'gidus*. 3. Yellow. May. Cape of Good Hope. 1818.
 — *rostra'tus*. White. May. Cape of Good Hope. 1821.
 — *tetra'gonus*. 6. White. Cape of Good Hope. 1810.
 — *tricuspi'da'tus*. 6. White. May. Cape of Good Hope. 1818.
 — *unda'tus*. 4. White. May. Cape of Good Hope. 1826.

EXCLUDED SPECIES.

- C. octa'gonus*. See *Maytenus octagonus*.
 — *verticilla'tus*. See *Maytenus verticillatus*.
 — *zeyla'nicus*. See *Ceanothus zeylanicus*.

Celeriac 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. The fineness of the plants is there attributed to the abundance of water with which they are supplied.

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.—These are somewhat numerous, and many of the sorts offered are deficient in flavour. The best early is *Sandringham white*, but *Veitch's solid white*, *Grove white*, etc., are much used, and among reds *Major Clarke's solid*, *Manchester*, *Williams' matchless*, *Leicester*, and *Sulham Prize pink*, are the best. The red chiefly for soups, the white being much more delicate in flavour.

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, earthing-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 soil, 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 they are established, the soil being 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, etc., 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 plants should not be shortened, as many persons do; but remove any decayed or broken leaf, and all side-shoots from the plants, one by one, being careful not to injure other leaves or the roots.

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 be-

tween 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.

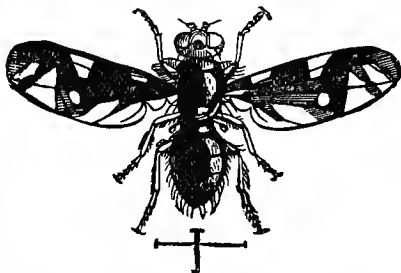
Manuring.—In the seed-bed, when pricked out, and in the bed for final growth, too much of the richest manure cannot be applied. Upon this, and upon the roots being uninjured at each removal, depend the fineness and excellence of the celery; any check to its growth is never recovered, but renders it dwarf 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 moderate 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. (*Tephrosia onopordioides*.) 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. The cross-lines in our woodcut show these proportions, as well as the insect magnified.



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. 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.

Various ways have been suggested for getting rid of this insect, such as crushing the leaves with the maggots in, which is a method, however, which can-

not be regarded as satisfactory. The only sure way is to burn the leaves. The most certain way of eradicating this pest is to treat the soil, in which the pupæ live, with a dressing of fresh gaslime.

Celmi'sia. (After *Celmisius*, son of the nymph Alciope. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*.)

Showy greenhouse evergreen perennials. Seeds, ordinary soil. They may be planted on the rockery in the South of England and Ireland.

- C. Lindsayi*. 5-6. Ray white; disk yellow. New Zealand. 1890. B. M. t. 1734.
 — *spectabilis*. Ray white or pale lilac; disk yellow. May. New Zealand. 1832. B. M. t. 6653.

Celo'sia. Cockscomb. (From *kelos*, burnt; in reference to the burnt-like appearance of the flowers of some of the species. Nat. ord., *Amaranthaceæ*.)

The flowers of the Cockscomb, *Celo'sia cristata*, are astringent, and much used by Asiatic physicians. Seeds in a hotbed in March; potted off successively, and transferred to the hothouse or greenhouse; light, rich soil, well drained.

SHRUBS.

- C. echinata*. 1. Purple. July. Orinoco. 1821. Stove evergreen.
 — *glauca*. 1. White. July. Cape of Good Hope. 1813. Greenhouse evergreen.

GREENHOUSE ANNUALS.

- C. cristata*. 2. Dark red. July. Asia. 1570.
 — — *auræa*. Yellow. Flor. Mag. I. p. 47.
 — — *coccinea*. 5. Magenta. July. India. 1597. B. R. t. 1834.
 — — *compacta*. 2. Dark red. July. Asia. 1570.
 — — *elaïta*. 2. Dark red. July. Asia. 1570.
 — — *flavescens*. 2. Yellow. July. Asia. 1570.

STOVE ANNUALS.

- C. argentea*. 1. Light flesh. July. China. 1740.
 — — *linearis*. 1. Flesh. June. E. Ind. 1714.
 — — *margaritacea*. 2. Yellow. August. W. Ind. 1817.
 — *castrensis*. 2. Purple. July. E. Ind. 1739.
 — *cristata cernua*. 3. Purple. July. E. Ind. 1809. Andr. Rep. t. 635.
 — — *comosa*. 1. Pink. July. China. 1802.
 — *dichotoma*. See *Chamissoa dichotoma*.
 — *Huttoni*. Leaves crimson or claret. Java. 1872. Flor. Mag. n. s. t. 17.
 — *lana'ta*. Jacq. Vind. 3, t. 85. See *Ærua javanica*.
 — *margaritacea*. See *C. argentea*, var. *margaritacea*.
 — *Monsonia*. See *Ærua Monsonia*.
 — *nitida*. 1. Purple. August. Malabar. 1706.
 — *nodiflora*. Jacq. Vind. t. 98. See *Chamissoa nodiflora*.
 — *pyramidalis*. See *Chamissoa pyramidalis*.
 — *trigyna*. 1. Arabia to Senegambia. Jacq. Vind. 3, t. 15.
 — *virgata*. Greenish. Columbia. Jacq. Ic. t. 339.

Celo'sia cristata. *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 but sweet dung. Temperature when growing, 60° to 85° by day; 60° at night.

Ce'lsia. (Named after *Professor Celsius*, of Upsal. Nat. ord., *Scrophulariaceæ*. Closely allied to *Verbascum*.)

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. Arctivrus*. 4. Yellow. August. Candia. 1780. Half-hardy perennial. B. M. t. 1962.
 — — *Linnaea*. 2. Yellow, throat purplish. Syn., *C. sublanata*. B. R. t. 438.
 — — *oppositifolia*. Jacq. Vind. 2, t. 117.
 — *betonicifolia*. 2. Yellow. August. N. W. Africa. 1873. Biennial. B. M. t. 6066.
 — *bugulifolia*. 1. Yellowish-brown. Levant. 1877. Syn., *Ianthe bugulifolia*. Hardy perennial.
 — *coromandelica*. 4. Yellow. July. E. Ind. 1783. Stove annual.

- C. cretica*. 6. Yellow. July. Crete. 1752. Hardy biennial. Jacq. Vind. 3, t. 474. Syn., *Verbascum lyratum*.
 — *heterophylla*. Yellow. July. 1829. Half-hardy biennial.
 — *lana* ta. 2. Yellow. July. 1818. Half-hardy evergreen.
 — *lancoleta* ta. 3. Yellow. July. Levant. 1816. Half-hardy biennial.
 — *linearis*. B. R. t. 210. See *Alonsoa linearis*.
 — *orientalis*. 2. Brown, yellow. July. Levant. 1713. Hardy annual. Sibth. Fl. Gr. t. 605.
 — *sublana* ta. See *C. Arcturus*, var. *Linnæana*.
 — *urticaefolia*. B. M. t. 417. See *Alonsoa incisifolia*.
 — *viscosa*. See *Verbascum virgatum*.

Celtis. Nettle-tree. (The name of a tree mentioned by Pliny. Nat. ord., *Urticaceæ*.)

Seeds, sown as soon as ripe; layers, also, and cuttings of ripe shoots, in autumn; common, good soil. The East and West Indian species require protection; but there seems little to recommend in them over the European and North American species, which are hardy. The wood of *C. australis* is extremely pliant.

HARDY DECIDUOUS.

- C. canadensis*. See *Trema micrantha*.
 — *crassifolia*. 20. Green. April. N. Amer. 1812. Syn., *C. cordifolia*.
 — *Davidia* na. 20. Green. China. 1868.
 — *mississippie* nsis. 20. Green. April. Louisiana. Syn., *C. levigata*.
 — *occidentalis*. 20. Green. April. N. Amer. 1656. Wats. Dendr. 2, t. 147.
 — *cordata* ta. 20. Green. April. N. Amer.
 — *puberula*. 6. Green. May. N. Amer. 1812.
 — *reticulata* ta. Texas. 1890.
 — *scabrinervis*. 20. Green. April. N. Amer. Syn., *C. aspera*.
 — *siniensis*. 12. Green. Asia. 1820.
 — *Tournefortii*. 8. Green. Levant. 1739.

STOVE EVERGREENS.

- C. aculeata*. 10. Green. Jamaica. 1791.
 — *australis*. 10. Green. S. Europe. 1796. Wats. Dendr. 2, t. 105.
 — *Wima* and *micrantha*. See *Trema micrantha*.
 — *orientalis*. Wight Ic. t. 602-3. See *Trema orientalis*.

Cenarrhænes. (From *kenos*, empty, and *arren*, male; in allusion to the stamen-like glands. Nat. ord., *Proteaceæ*.)

Small greenhouse tree. Cuttings. Sandy peat. Smells fetidly when bruised.

- C. nitida*. 15. Greenish. Tasmania.

Cenia. (From *kenos*, empty; alluding to the bladder-like calyx. Nat. ord., *Compositæ*; Tribe, *Anthemideæ*.)

Hardy annual. See ANNUALS.

- C. pruinosa*. ½. Rays yellow above, dull purple beneath; disk yellow. Cape of Good Hope. 1856.
 — *turbinata* ta. 1. White. July. Cape of Good Hope. 1713.

Centaurea. 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 war-horse breakers of Thessaly. Nat. ord., *Compositæ*; Tribe, *Cynarææ*. Syn., *Rhaponticum*.)

The Centaureas are so numerous that more than twenty generic names have been applied to them. *C. cyanus* and *depressa*, 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, and when ready planted in the borders; a few might be preserved in a cold pit, if it was deemed desirable. Common soil.

HARDY ANNUALS AND BIENNIALS.

- C. Adami*. 2. Yellow. July. Siberia. 1804.
 — *americana* na. 2. Red. July. N. Amer. 1824. Fl. Ser. t. 327.
 — *Apuia*. 1. Yellow. July. N. Africa. 1817.
 — *arachnoides*. 3. Yellow. July. Italy. 1820. Biennial.
 — *benedicta*. 2. Yellow. August. Spain. 1548. Sibth. Fl. Gr. t. 906.
 — *cancellata* ta. 1. Yellow. July. N. Amer. 1824.
 — *chilensis*. 1½. Lilac. June. Chili. 1836.
 — *coarctata* ta. 1. Yellow. July. N. Africa. 1827.
 — *crocodilum*. 3. Purple. July. Levant. 1777.
 — *Crupina*. 3. Flesh. June. Italy. 1596. Sibth. Fl. Gr. t. 900.
 — *crupinoides*. 1. Copper. July. N. Africa. 1818.
 — *cyanus*. 3. Blue. July. Britain. Eng. Bot. ed. 3, t. 709.
 — *fusca* ta. Yellow. July. Sardinia. 1830.
 — *glauca*. 1. Pale yellow. June. Caucasus. 1808.
 — *iberica*. 2. Purple. July. Iberia. 1818. Biennial.
 — *Lippii*. 1. Pale purple. June. Egypt. 1793.
 — *melite* nsis. 1. Yellow. July. Malta. 1710. Sibth. Fl. Gr. t. 909.
 — *moschata* ta. 2. Purple. August. Persia. 1629.
 — *naxifolia*. 3. Purple. July. Candia. 1601. Sibth. Fl. Gr. t. 905.
 — *nitens*. 2. July. Caucasus. 1823. Syn., *Serratula nitens*.
 — *pallenscens*. 2. Yellow. July. Egypt. 1816.
 — *pulchella*. 2. Purple. June. Persia. 1836.
 — *puichra*. 1. Bright crimson. June. Cashmere. 1838. B. R. 1840, t. 23.
 — *salmontica*. 3. Purple. July. South Europe. 1596. Biennial. Jacq. Vind. t. 64.
 — *scutula*. 2. Yellow. July. Sicily. 1710.
 — *solistida* ta. 1. Yellow. July. England. Barnaby's Thistle. Sibth. Fl. Gr. t. 908.
 — *Stevanii*. 2. Yellow. July. Caucasus. 1820. Biennial.
 — *strami* na. 1. Yellow. July. Egypt. 1801.
 — *suaveolens*. 2. Yellow. July. Levant. 1688. Swt. Fl. Gard. t. 51.
 — *sulphurea*. 1. Yellow. July. 1815.
 — *Torreana*. 1½. Purple. July. Naples. 1830.
 — *vervata*. 2. Yellow. July. Levant. 1780.

HALF-HARDY.

- C. ægyptiaca*. 1. White. July. Egypt. 1790. Herbaceous perennial. Sibth. Fl. Gr. t. 907.
 — *argentea*. 2. Pale yellow. July. Candia. 1739. Evergreen shrub.
 — *arguta*. August. Canaries. 1839. Evergreen shrub.
 — *Cinaria*. 3. Purple. July. Italy. 1710. Herbaceous perennial. Jacq. Vind. t. 92.
 — *gymnocarpa*. 1. Yellow. August. S. Europe. 1858.
 — *hysciphifolia*. 1. Purple. July. Spain. 1812. Half-hardy evergreen.
 — *ragusina*. 2. Yellow. July. Candia. 1710. Evergreen shrub. B. M. t. 494.
 — *sempervirens*. 2. Red, yellow. July. Spain. 1683. Herbaceous perennial.
 — *spino* sa. 2. Purple. July. Candia. 1840. Herbaceous perennial. B. M. t. 2493.

HARDY HERBACEOUS.

- C. acanthoides*. 2. Purple. July. 1827.
 — *acar'lis*. Barbary. 1799. Syn., *Rhaponticum acule*.
 — *ala'ta*. 2. Yellow. August. Tartary. 1781.
 — *a'lba*. 2. White. July. Spain. 1697.
 — *alpi'na*. 3. Yellow. July. Italy. 1640.
 — *ama'ra*. 2. Purple. July. Italy.
 — *grandifl'ra*. 2. Purple. July. Switzerland. 1819.
 — *pinnatifida*. 2. Purple. July. Switzerland. 1819.
 — *arena'ria*. 2. Purple. August. South Europe. 1778.
 — *a'spera*. 2. Purple. August. South Europe. 1772. Eng. Bot. ed. 3, t. 710. Syn., *C. Isnardi*.
 — *astrac'e'nica*. 2. Purple. July. Astracae. 1818.
 — *atropurp'rea*. 3. Purple. July. Hungary. 1802.
 — *au'rea*. 2. Yellow. August. South Europe. 1758. B. M. t. 421.
 — *austr'alis*. 1. August. Australia. 1821. Syn., *Leuzea australis*.
 — *austr'aca*. 2. Purple. August. Austria. 1815.
 — *axilla'ris*. 1. Purple. July. Austria. 1823.
 — *babylo'nica*. 7. Yellow. July. Levant. 1710.
 — *Balsam'ita*. 2. Yellow. July. Syria. 1820. Swt. Fl. Gard. ser. 2, t. 355.
 — *barbete'ri*. 2. Purple. July. Hungary. 1820.
 — *barbota'ta*. 2. Purple. July. South Europe. 1817.
 — *calci'trapu*. 1. Pink. July. England. Eng. Bot. ed. 3, t. 711.
 — *calcitrapoi'des*. 1. Purple. June. Levant. 1683.
 — *caloc'e'phala*. 3. Yellow. July. Levant. 1816.
 — *calocy'lla*. 5. Yellow. July. South Europe. 1816.
 — *capilla'ta*. 1. Purple. July. Siberia. 1810.
 — *carthamo'i'des*. 2. August. Siberia. 1816. Syn., *Leuzea carthamoides*.
 — *centaureoi'des*. 3. Yellow. June. South Europe. 1739.
 — *Centaur'ium*. 4. Yellow. July. Italy. 1596.
 — *cheirantho'i'dia*. 2. Pale yellow. July. Caucasus. 1820.
 — *cichora'cea*. 2. Purple. July. Caucasus. 1816.
 — *cicutaf'o'lia*. 3. Yellow. July. Podolia. 1820.
 — *cin'e'ra*. 2. Purple. June. Italy. 1710.
 — *Cleme'ntet*. 3. Yellow. 1871. Perennial.
 — *coll'ina*. 3. Yellow. June. South Europe. 1596. Sibth. Fl. Gr. t. 914.
 — *conci'nna*. 4. Yellow. August. Caucasus. 1818.
 — *coria'cea*. 2. Purple. June. Hungary. 1804.
 — *coronop'ho'lia*. 3. Yellow. June. Levant. 1739.
 — *crue'nta*. 1. Purple. July. 1816.
 — *dealba'ta*. 2. Purple. July. Caucasus. 1804.
 — *deci'piens*. 2. Purple. August. France. 1816.
 — *declina'ta*. 2. Purple. July. Caucasus. 1821.
 — *decu'mbens*. 2. Purple. August. France. 1815.
 — *depre'ssa*. 1. Blue. July. Caucasus. 1818. B. M. t. 3662.
 — *des'ta*. 5. Dark red. August. Naples. 1818.
 — *ditu'ta*. 2. Pale purple. July. South Europe. 1781.
 — *disse'cta*. 2. Purple. July. Naples. 1823.
 — *ela'ta*. 4. Yellow. August. Mauritius. 1820.
 — *elonga'ta*. 2. Purple. August. Barbary. 1823.
 — *erio'phora*. 1. Yellow. August. Portugal. 1714.
 — *eriphy'lla*. 3. Yellow. July. 1827.
 — *Fen'tii*. 4. Yellow. W. Asia? 1868. Biennial.
 — *feroz*. 2. Yellow. August. Barbary. 1790.
 — *Fische'rii*. 2. Blue. July. Russia. 1820.
 — *foseculo'sa*. 1. Purple. August. Italy. 1818.

- C. glastif'o'lia*. 4. Yellow. July. Siberia. 1731. B. M. t. 62.
 — *hy'brida*. 1. Purple. July. Switzerland. 1819.
 — *inea'na*. 2. Purple. August. Naples. 1822.
 — *intyba'cea*. 2. Purple. August. South Europe. 1778.
 — *Isna'r'di*. See *C. aspera*.
 — *jacobae'fo'lia*. 3. Yellow. July. 1818.
 — *Kartschi'd'na*. 2. Purple. June. Carniola. 1836.
 — *leuca'ntha*. 2. White. August. South France. 1816.
 — *leucopy'lla*. 2. Purple. July. Caucasus. 1823.
 — *limba'ta*. 3. Purple. July. Portugal. 1818.
 — *lingula'ta*. 2. Blue. July. Spain. 1824.
 — *linif'o'lia*. 1. Purple. July. Spain. 1827.
 — *macroce'phala*. 3. Yellow. July. Caucasus. 1805. B. M. t. 1248.
 — *macula'ta*. 2. Purple. July. Siberia. 1816.
 — *maculo'sa*. 1. Purple. July. Siberia. 1816.
 — *Marshalli'd'na*. 2. Purple. July. Caucasus. 1820.
 — *mo'llis*. 2. Blue. July. Hungary. 1818.
 — *mona'nthos*. 1. July. Siberia. 1796. Syn., *Rhaponticum uniflorum*.
 — *mont'na*. 2. Blue. July. Austria. 1596. B. M. t. 77. Perennial blue-bottle.
 — *rub'ra*. Red-flowered variety.
 — *murica'ta*. 1. Purple. July. Spain. 1621.
 — *myaca'ntha*. 1. Purple. August. France. 1820.
 — *negle'cta*. 3. Yellow. July. Podolia. 1820.
 — *nervo'sa*. 2. Purple. July. South Europe. 1815.
 — *nicae'nsis*. 2. Yellow. July. Nice. 1819.
 — *ni'tens*. Purple. Caucasus. 1823.
 — *ochrole'ca*. 2. Pale yellow. July. Caucasus. 1801. B. M. t. 1175.
 — *orienta'lis*. 2. Yellow. Siberia. 1759.
 — *orna'ta*. 2. Yellow. July. Spain. 1818.
 — *ovi'na*. 1. Purple. August. Caucasus. 1802.
 — *panicula'ta*. 2. Purple. July. Europe. 1640.
 — *parvifl'ra*. 2. Violet. June. Barbary. 1823. Sibth. Fl. Gr. t. 912.
 — *pectina'ta*. 1. Purple. August. France. 1727.
 — *peregr'i'na*. 2. Yellow. July. South Europe. 1749.
 — *phry'gia*. 2. Purple. August. Switzerland. 1633.
 — *amb'igua*. 2. Purple. August. Switzerland. 1819.
 — *polyaca'ntha*. 1. Purple. July. Portugal. 1804.
 — *polymo'rpha*. 2. Purple. July. Spain. 1819.
 — *Pouzi'ni*. 2. Purple. July. South France. 1824.
 — *prate'nsis*. 2. Purple. July. France. 1817.
 — *procu'mbens*. 1. Purple. June. South Europe. 1821. Traller.
 — *pube'scens*. 1. Yellow. July. 1804.
 — *pulche'rri'ma*. 5. Yellow. July. Armenia. 1816.
 — *pu'lehra*. Caucasus. 1837. Syn., *Rhaponticum pulchrum*.
 — *pulla'ta*. 2. Purple. July. South Europe. 1789.
 — *radia'ta*. 2. White. July. Siberia. 1864.
 — *refle'xa*. 3. Yellow. July. Iberia. 1801.
 — *re'pens*. 1. Yellow. July. Levant. 1739.
 — *rhapo'nica*. Purple. Swiss Alps. 1640. B. M. t. 1752. Syn., *Rhaponticum Pallasii* and *scariosum*.
 — *ri'gida*. 1. Purple. July. 1823.
 — *rivula'ris*. 2. Brown. July. Portugal. 1812.
 — *roma'na*. 3. Red. July. Rome. 1739.
 — *rupe'stris*. 2. Yellow. July. Italy. 1806. Sibth. Fl. Gr. t. 915.
 — *ruth'e'nica*. 3. Pale yellow. August. Russia. 1806.
 — *sabulo'sa*. 1. White. July. Siberia. 1820.

- C. salicifolia*. 2. Purple. July. Caucasus. 1823.
 — *sanguinea*. 2. Purple. July. 1827.
 — *serotina*. 1. Purple. July. Spain. 1686.
 — *sessilifolia*. 1. Blue. July. South Europe. 1816.
 — *sibirica*. 1. Purple. July. Siberia. 1780.
 — *sonchifolia*. 1. Purple. August. Mediterranean. 1780.
 — *serotina*. 1. Purple. July. 1818.
 — *spathulata*. 2. Blue. July. Naples. 1825.
 — *sphaerocéphala*. 2. Purple. July. South Europe. 1683. B. M. t. 2551.
 — *spinulosa*. 2. Purple. July. Hungary. 1826.
 — *splendens*. 3. Purple. July. Spain. 1597.
 — *squarrosa*. 1½. Purple. July. Persia. 1836.
 — *stereophylla*. 2. Purple. July. Podolia. 1820.
 — *stoebe*. 1. Red, yellow. June. Austria. 1759.
 — *striata*. 1. Blue. July. Hungary. 1816.
 — *tatarica*. 2. Yellow. July. Tartary. 1801.
 — *tenuifolia*. 2. Purple. July. Siberia. 1820.
 — *transalpina*. 4. Purple. July. Switzerland. 1819.
 — *trichocéphala*. 1. Purple. July. Siberia. 1805.
 — *trineuvia*. 2. Purple. July. Podolia. 1816.
 — *uliginosa*. 3. Yellow. July. Portugal. 1816.
 — *umbellata*. 1. Purple. July. South Europe. 1819.
 — *vochineris*. 2. Purple. July. Austria. 1817.
 — *Weidmanniana*. 2. Rose. July. Natolia. 1836.
 — *zanthina*. 2. Yellow.

Centauridium. See Xanthisma.

C. Drummondii. See *Xanthisma texanum*.

Centradenia. (From *kentron*, a spur, and *aden*, a gland; referring to a spur-like gland on the anthers. Nat. ord., *Melastomaceae*. Allied to *Lavosiera*.)

Stove evergreens. Cuttings of side-shoots, in March or April; sandy loam one part, and rough peat two parts; a cool stove, or a warm greenhouse.

- C. divaricata*. White. Central America. 1851.
 — *floribunda*. Lilac. Guatemala. Fl. Ser. t. 453.
 — *grandifolia*. 2. Pink. November. Mexico. 1856. B. M. t. 5228.
 — *ovata*. Pink. Central America. 1861.
 — *rosea*. 1. Rosy-white. April. Mexico. 1843. B. R. 1843, t. 20.

Centranthus. (From *kentron*, a spur, and *anthos*, a flower; referring to a spur-like process at the base of the flower. Nat. ord., *Valerianaceae*.)

Hardy herbaceous perennials, except *C. calcitrapa* and *macrocephala*. Seeds and divisions; common soil.

- C. angustifolius*. 2. Crimson. June. South Europe. 1759.
 — *calcitrapa*. 1. Purple. June. Portugal. 1683. Hardy annual.
 — *macrocephala*. 2. Red. July. S. Europe. Paxt. Fl. Gard. t. 67.
 — *albida*. White.
 — *rubra*. 2. Crimson. June. Britain. Eng. Bot. ed. 3, t. 664.
 — *floribunda*. 2. White. June. Britain.

Centrocarpha. See *Rudbeckia*.

Centroclinium. See *Onoseris*.

- C. appressum*. B. M. t. 3115. See *Onoseris adpressa*.
 — *reflexum*. B. M. t. 3114. See *Onoseris reflexa*.

Centro'nia. See *Calyptaria*.

Centropetalum. (From *kentron*, a spur, and *petalon*, a petal; referring to the spur at the base of the lip. Nat. ord., *Orchideae*.)

Cool stove epiphyte.

- C. punctatum*. ½. Vermilion, yellow. April. Peru. 1867. Syns., *Nasonia cinnabarina* and *punctata*. B. M. t. 5718.

Centropogon. (From *kentron*, a spur, and *pogon*, a beard; in reference to the fringe which envelops the stigma. Nat. ord., *Lobeliaceae*.)

Notwithstanding the acid poisonous qualities assigned to *Lobelias*, it is asserted that the soft fruit of the *Centropogon surinamensis* is eatable. Herbaceous perennials. Divisions of roots; sandy peat, and rich, fibry 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. cordifolium*. Rose. June. Guatemala. 1839. Stove. Fl. Ser. t. 362.
 — *fastuosum*. 2. Rose. November. Greenhouse. Rev. Hort. 1853, t. 10.
 — *longipes*. 2. Rose. 1854.
 — *Lucyana*. Rose-carmine. Winter. 1856. Rev. Hort. 1868, p. 291. Garden hybrid.
 — *surinamensis*. 2. Rose. November. Surinam. 1780. Stove. Paxt. Mag. 13, p. 149.
 — *tovarensis*. 2-3. Rose. Autumn. Venezuela. Fl. Ser. t. 802.

Centrosema. (From *kentron*, spur, and *sema*, standard; and the standard of the flower has a short spur. Nat. ord., *Leguminosae*; Tribe, *Phaseoleae*.)

Stove evergreen twiner.

- C. brazilianum*. 4. Pink. July. S. America. Syns., *Clitorea braziliana* and *formosa*.
 — *dubium*. 6. Scarlet. W. Indies. 1815. Syn., *Rudolphia dubia*.
 — *Plumieri*. 6. White, red. October. W. Indies. Syn., *Clitorea Plumieri*.

Centrosolenia. (From *kentron*, a sharp point, and *solen*, a tube; referring to the form of the corolla. Nat. ord., *Gesneraceae*.)

Natives of tropical America. Require a warm, moist stove. Soil, equal parts of peat, leaf-mould, and sand; good drainage, and little water in winter. Cuttings in a warm pit, without a bell-glass.

- C. ænia*. White. Columbia. 1876. Ill. Hort. n. s. t. 222.
 — *bracteata*. B. M. t. 4675. See *Episcia bracteata*.
 — *bullata*. Yellow. E. Peru. Syn., *Episcia tessellata*. Ill. Hort. t. 607.
 — *glabra*. B. M. t. 4552. See *Episcia glabra*.
 — *picta*. B. M. t. 4611. See *Episcia picta*.

Centrostemma. See *Hoya*.

- C. multiflorum*. B. M. t. 5173. See *Hoya multiflora*.
 — *reflexum*. See *Hoya coriacea*.

Cephaelis. (From *kephale*, a head; in reference to the arrangement of the flowers in heads, or corymbs. Nat. ord., *Rubiaceae*; Tribe, *Psychotriaceae*. Syn., *Tapogomea*. Allied to *Psychotria*.)

The Ipecacuanha of the shops is the root of *C. ipecacuanha*, 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, fibry peat, and lumpy loam.

- C. alba*. Pale pink. April. Guiana. 1824.
- *axilla'ris*. 4. White. April. Brazil. 1816.
- *calyci'na*. See *Suteria calycina*.
- *eta'ra*. 15. Purple. Jamaica. 1793.
- *glabra*. Blue. April. Trinidad. 1820.
- *involuta'ra*. 5. White. July. Guiana. 1826. Syn., *Carapichea Aubletii*.
- *ipecacua' nha*. 3. White. January. Brazil. 1839. B. M. t. 4063.
- *musco'sa*. White. May. W. Ind. 1824.
- *peduncula'ta*. 2. White. February. Sierra Leone.
- *puni'cea*. 3. White. July. Jamaica. 1820.
- *purpu'rea*. 1. White, purple. May. Trinidad. 1821. Syn., *Tapogomea purpurea*.
- *Swa'rtzii*. 4. Bluish. W. Ind. 1824.
- *tomento'sa*. 4. Brownish. August. Trinidad. 1825. B. M. t. 6696.
- *viola'cea*. 1. White. June. W. Ind. 1818. Syn., *Tapogomea violacea*.

Cephalanthera. (From *kephale*, a head, and *anthera*, an anther. Nat. ord., *Orchideæ*; Tribe, *Neottieæ*. Allied to *Limodorum*.)

Hardy terrestrial orchids. Divisions; peat and loam.

- C. ensifolia*. 2. White. June. Britain.
- *pa'liens*. 1. White. June. Britain. Syn., *C. grandiflora*.
- *ru'bra*. 2. Purple. June. Britain.

Cephalanthus. Button-wood. (From *kephale*, a head, and *anthos*, a flower; flowers disposed in heads being a general characteristic of this order. Nat. ord., *Rubiaceæ*; Tribe, *Naucleæ*. Allied to *Adina*.)

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. occidentalis*. 7. White. August. N. Amer. 1735.
- — *angustifolius*. Leaves narrower and longer than in the type. August. Rev. Hort. 1889, p. 281, f. 71.
- — *brachypodus*. White. August. N. Amer.

Cephalotaxus. (From *kephale*, a head, and *taxus*, the yew; referring to the general appearance of these trees. Nat. ord., *Coniferae*. Allied to *Phyllocladus*.)

These are the Japanese Yews, separated from the yews proper by Dr. Sieboldt, the Japan traveller, and Zuccarini, in their work "Flora Japonica." Hardy evergreens.

- C. drupa'cea*. 12 to 20 feet. North China. 1849. Syn., *Taxus coriacea*.
- *Fortunei*. 40 to 60 feet. Japan. 1848. B. M. t. 4499. The plant often grown as the female of this species, probably belongs to *C. pedunculata*.
- *pedunculata*. Japan. 1837. Lord Harrington's Yew. Syns., *Taxus inukaja* and *Harringtonii*.
- — *fastigiatu*. Leaves darker than in the type. 1884.

- C. pedunculata sphaerol'is*. Fruit globular. 1884.
- *umbraculi'fera*. Japan.

Cephalotus. (From *kephalotes*, headed; in reference to glandular head of stamens. Nat. ord., Now considered to be an anomalous genus of *Saxifrageæ*.)

This is the New Holland 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.

- C. follicularis*. 1. White. W. Australia. 1822. B. M. t. 3118-9.

Cera'dia. See *Othonna*.

Cera'nthera. See *Alsoeida*.

Cera'pteryx *gra'minis*. See *Charæas graminis*.

Cera'stium. Mouse-ear Chickweed. (From *keras*, a horn; from the form of the seed-vessel. Nat. ord., *Caryophyllaceæ*; Tribe, *Alsineæ*.)

Hardy annual or perennial herbs. They are easily propagated by divisions in the spring; will grow in any light, moderately rich soil, and are all white-flowered.

- C. alpinum*. White. Summer. Mountains of Europe.
- *arve'nse*. 3. July. Europe. Syn., *C. Scarami*.
- *Bieberstei'nii*. 3. June. Caucasus. 1820.
- *Boissie'ri*. 1. White. Summer. Spain.
- *carinthi'acum*. 3. White. Summer. Carinthia.
- *grandiflorum*. 3. White. Summer. E. Europe.
- *latifolium*. 3. White. July. N. Europe.
- *Ledebou'rii*. 3. June. Siberia.
- *purpura'scens*. 3. July. 1831.
- *tomento'sum*. 3. White. June. S. Europe.

1848. This old species has been brought prominently into notice as an edging-plant in the bedding-out system of flower-gardening. For this purpose it may be propagated by cuttings in April, or the old plants may then be taken up, the plants divided, and replanted like box-edging, care being taken to bury enough of the creeping root to keep the top alive. *C. Bieberstei'nii* and *C. Boissie'ri* may be treated precisely in the same way.

Cerasus. Cherry. (From *Cerasus*, a town in Pontus, in Asia, whence the cherry was brought to Rome by Lucullus. Nat. ord., *Rosaceæ*; Tribe, *Pruneeæ*.)

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.

- C. acida pyramida'lis*. Garden variety. 1886.
- *affinis*. White. May. Europe. 1837.
- *avium*. 50. White. April. England. Bird cherry.
- — *macrocarpa*. 50. White. April. Switzerland.
- — *multiflex*. 15. White. April.
- — *pa'lidu*. 20. White. April.
- — *sylvestris*. 50. White. April. Britain.

C. borealis. 20. White. May. N. Amer. 1822.
 — *canadensis*. 15. White. May. Canada. 1820.
 — *capronia*'na. 20. White. April. South of Europe.
 — — *cordigera*. 20. White. April. South of Europe.
 — — *Gobbeta*. 20. White. April.
 — *Griotta*. 20. White. April.
 — *Montmorencia*'na. 20. White. April.
 — *multitplex*. 12. White. April.
 — *palle-scens*. 20. White. April.
 — *persicifolia*. 20. White. April.
 — *polygyna*. 20. White. April.
 — *variegata*. 10. White. April.
 — *caroliniana*. 30. White. May. Carolina. 1759. Evergreen bird cherry.
 — *chamaecerasus*. 8. White. May. Austria. 1597.
 — *chicasa*. 8. White. April. N. Amer. 1806. Chicasaw plum.
 — *cornuta*. 10. White. 1842.
 — *depressa*. 4. White. May. South of Europe. 1805.
 — *duracina*. 20. White. April. South of Europe.
 — — *cordigera*. 20. White. April.
 — — *mammillaris*. 20. White. April.
 — — *obtusata*. 20. White. April.
 — *hyemalis*. 4. White. May. N. Amer. 1805.
 — *japonica*. 2. Pink. April. Japan. 1810.
 — *fo-re-ple-no-a-lba*. 2. White. March. North of China. 1846.
 — — *multitplex*. 4. Pink. April. Japan. 1810.
 — *Juliana*. 20. White. April. South of Europe.
 — — *Heaumeana*'na. 15. White. April.
 — — *pendula*. 10. White. April. South of Europe. 1821.
 — *laurocerasus*. 12. White. April. Levant. 1629. Evergreen. Common laurel cherry.
 — — *angustifolius*. 8. White. April. Evergreen.
 — — *variegatus*. 12. White. April. Evergreen.
 — *lusitana*. 20. White. May. Portugal. 1648. Evergreen. Portugal Laurel.
 — *Maha'leb*. 20. White. April. Austria. 1714. Evergreen.
 — — *fructu-flavo*. 20. White. May. South of Europe.
 — — *latifolium*. 20. White. June. South of Europe.
 — *marascha*. White. April. Europe. 1827.
 — *nepalensis*. 20. White. May. Nepal. 1820. Half-hardy.
 — *occidentalis*. 20. White. Jamaica. 1629. Stove evergreen.
 — *padus*. 50. White. April. Britain. Bird-cherry.
 — — *argentea*. 20. White. April. 1846.
 — — *acubasifolia*. 20. White. April. 1845.
 — — *bracteosa*. 30. White. April. Europe.
 — — *heterophylla*. 20. White. April. 1845.
 — — *parviflora*. 30. White. April. North of Europe.
 — — *rubra*. 30. White. April. Britain. Cornish bird cherry.
 — — *vulgaris*. 30. White. April. Britain.
 — *pendula*. See *Prunus subhirtella*.
 — *pennsylvanica*. 30. White. May. N. Amer. 1773.
 — *persicifolia*. 8. White. May. N. Amer.
 — *prostrata*. 1. Pink. April. Crete. 1802.
 — *peu-do-ce-rasus*. 6. White. April. China. 1821. Bastard cherry. Syns., *C. Sieboldia* and *Prunus Puddum*.
 — *pube-scens*. 12. White. April. N. Amer. 1806.
 — *pumila*. 2. White. May. N. Amer. 1756.
 — *pygmaea*. 4. White. May. N. Amer. 1823.

C. salicina. 4. White. April. China. 1822.
 — *semperflorens*. 20. White. April. China. 1822. Half-hardy.
 — — *sessiliflora*. 20. White. April.
 — *serotina*. 30. White. June. N. Amer. 1629. American bird cherry.
 — — *cartlagi'nea*. Leaves long, coriaceous. Garden variety. 1889.
 — — *retusus*. 30. May. S. Amer.
 — *serrulata*. 4. White. April. China. 1822. Half-hardy.
 — *Sieboldia*. See *C. pseudo-cerasus*.
 — *sphaerocarpa*. 10. White. June. Jamaica. 1820. Stove evergreen.
 — *susquehanna*. White. May. N. Amer. 1800.
 — *virginiana*. 30. White. May. Virginia. 1724.

Cherry Culture.—All our cultivated cherries appear to be derived, by the aid of various crosses, from *Ce'rasus duracina*, *Juliana*, and *capronia*'na.

DESSERT FRUIT.

1 Early Purple Guigne	May.
2 Early Duke	b. June.
3 Royal Duke	e. June.
4 Elton	m. June.
5 Florence	m. Aug.
6 Late Duke	e. Aug.
7 Morello	b. Sept.
8 Büttner's October Morello	e. Sept.

FOR PRESERVING.

9 Kentish	e. Aug.
---------------------	---------

Other desirable varieties are:—BIGARREAS, Black Bohemian, Florence, Frogmore Yellow, Downton, Florence, Frogmore Early, Late Black, Napoleon, etc.

GEANS.—Black Eagle, Black Rivers, Hogg's Red Gean, Waterloo, etc.

MAY DUKES.—Archduke, Bell Mag-nifique, Carnation, Transparent, etc.

For *Standards* take Nos. 2, 3, 4, 6, 7; these, however, are equally adapted for walls. For *forcing* take the Early Duke. This is so well adapted, both on account of its earliness and fine bearing, that few of the other kinds are ever used for this purpose. Some of the others would succeed very well, and the Tartarian has been pointed to by some as very eligible.

In addition to the above the following are in good repute:—Werder's Black Heart; Black Eagle; Bigarreau; Tartarian; Downton; and the new kind, Reine Hortense.

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 pro-

moting 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 dis-budding, 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 cut out, 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, etc.—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 confectionary 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*.

The *keeping* of cherries on the trees is, indeed, the great obstacle to their much-extended culture. Were it not for this, cherries would be an every-day affair from the end of May until the end of October. The birds are their greatest enemies, and next to them the wasps. For preservation from birds there is nothing like good nets; but, as it takes much netting to cover an ordinary tree, a dwarfing-system should be had resource to, by which means much fruit may be preserved in a little space. By strict preservation we have had the *May Duke* in use from the beginning of June until the middle of August; the *Late Duke* from the latter period until the end of September; and the *Morello* from the close of September until the end of October, or even later. The wasps are by far the most difficult to manage. We have, however, kept these at bay, for a few weeks, by covering the bushes with some material like Scotch gauze.

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* (*A'phis cerasi*) is the greatest enemy, and next the *Red Spider* (*A'carus tella'rius*). 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 shoot 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., *Empetraceæ*.)

The Crowberries are a small group of dwarf bushes, with heath-like leaves, which are evergreen. Most of them inhabit bleak and inhospitable regions both in Europe and in North America. Half-bardy under-shrub. Cuttings in sandy soil, under a glass, in a mild bottom-heat. Sandy peat, and a little very fibry loam.

C. ericoi'des. 2. Brown. June. N. Amer. 1826. B. M. t. 2758.

Ceratochi'los of Lindley (but not of Blume). See *Stanhopea*.

Ceratoda'ctylis has been united to the genus *Llavea*.

Ceratolo'bus. (From *keras*, a horn, and *lobos*, a lobe; referring to a part of the leaves. Nat. ord., *Palmaceæ*.)

Stove palms.

C. co'ncolor. One coloured. Sumatra.
— *glauca' scens*. Milky-green-leaved. Java. Mart. Palm. t. 115. A useful table plant.

Cerato'nia. Carob-tree. (From *keras*, a horn; in reference to the shape of the seed-pods. Nat. ord., *Leguminosæ*; Tribe, *Cassiæ*. Allied to *Cassia*.)

This is believed to be the *Locust-tree* of Scripture. "The dry pulp in which the seeds are buried is very nutritious. 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, hardy in the South. Cuttings of ripe shoots in sand, under a hand-glass. Sandy loam.

C. si'liqua. 15. Red, yellow. September. Levant. 1670. Andr. Rep. t. 567.

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., *Saxifragæ*; Tribe, *Cunoniæ*.)

Greenhouse tree. Cuttings under a bell-glass, in sand; rich, sandy loam.

C. gummi'ferum. 50. Yellow. N. South Wales. 1820. Gfl. 1887, p. 632.

Cerato'pteris. (From *keras*, a horn, and *pteris*, a fern. Nat. ord., *Filices*—*Polypodiaceæ*.)

Stove aquatic biennial fern; succeeds best when the pot containing it is plunged to the rim in water. Spores produced freely. See FERNS, STOVE.

C. thalictro'i'des. 1½. Tropics generally. Lowe, Ferns, 2, t. 66. Syns., *Parkeria Lockhartii* and *pteroides*.

Ceratoste'mma. (From *keras*, a horn, and *stemma*, a stamen. Nat. ord., *Vacciniaceæ*. Allied to *Thibaudia* and *Cavendishia*.)

Greenhouse evergreen shrubs. Divisions; layers, cuttings in sand under a bell-glass. Peaty soil.

C. corona'rium. See *Themistoclesia coronilla*.
— *longifo'rnum*. Crimson. Peru. 1846. B. M. t. 4779. Syn., *C. grandiflorum*, Fl. Ser. t. 934.
— *speciosum*. Orange-red, yellow. Ecuador. 1870.

Ceratothe'ca. (From *keras*, a horn, and *theke*, a chest. Nat. ord., *Pedaliaceæ*.)

Greenhouse or half-hardy annual. Sandy soil, seeds.

C. triloba. Mauve, whitish inside with purple lobes. Natal. 1887. G. C. 1887, vol. 2, p. 492.

Ceratoza'mia. (From *keras*, a horn, and *Zamia*. Nat. ord., *Cycadaceæ*.)

These are *Zamia*-like plants, from which genus they are distinguished by the scales of the cones having two horns on their tops. Seeds, and sometimes by suckers and division; the plants are mostly imported. Ric^d light loam and rotten leaves. Stove, moist atmosphere.

C. fuscovi'ridis. Mexico. 1879.
— *Kusteria* na. Mexico. Gfl. t. 185-6.
— *mexica'na*. 6. Mexico. 1846. Syn., *Dipsozamia mexicana*.

Ce'rbera. (Named after the fabled

dog, *Cerberus*. Nat. ord., *Apocynaceæ*. Allied to *Plumiera*. Syn., *Tanghinia*.)

Stove evergreens. Cuttings of young, rather ripe shoots, in April, in sand, under a glass, and in bottom-heat. Rich, fibry loam.

- C. Ahon'ai*. B. M. t. 737. See *Thevetia Ahonai*.
 — *borbo'nica*. See *Ochrosia*.
 — *frutico'sa*. B. R. t. 391. See *Kopsia fruticososa*.
 — *lacta'ria*. 20. August. 1800. Syn., *Tanghinia Manghas*.
 — *laurifo'lia*. 3. E. Indies. 1818. B. C. t. 989. Syn., *Tanghinia laurifolia*.
 — *macula'ta*. See *Ochrosia maculata*.
 — *Ma'nghas*. 20. White. August. 1800. Syn., *Tanghinia Manghas*.
 — *Odollam*. 20. White. August. 1759. B. M. t. 1835. Syn., *Tanghinia Odollam*.
 — *ova'ta*. 3. Yellow. New Spain.
 — *Ta'nghin*. 30. Pink. May. Madagascar. 1820. B. M. t. 2968. Syn., *Tanghinia venenifera*.
 — *Theve'tia*. B. M. t. 2309. See *Thevetia nerii-folia*.
 — *thevetio'des*. See *Thevetia Yecotli*.
 — *venenifera*. 30. Pink. Madagascar. 1826. Syn., *Tanghinia venenifera*.

Cercidiphyllum. (Derivation unexplained. Nat. ord., *Magnoliaceæ*.)

Greenhouse tree or shrub, hardy on walls in South, common soil, seeds, layers.

C. japonicum. Apetalous. Japan. 1889.

Cercis. Judas-tree. (From *kerkis*, a shuttlecock; the name given by Theophrastus. Nat. ord., *Leguminosæ*; Tribe, *Bauhinieæ*.)

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. canadensis*. 18. Pale red. May. N. Amer. 1730.
 — *pubescens*. 18. Pale red. May.
 — *japō'nica*. Rose. Japan. Fl. Ser. t. 849.
 — *occidentalis*. 15. Texas.
 — *siliqua'strum*. 20. Red. May. South Europe. 1596. Common Judas-tree. B. M. t. 1168.
 — *stō're-a'ubo*. 20. White. May. South Europe.
 — *parviflorum*. 20. Purple. May. Bucharia. 1827.

Cercocarpus. (From *kerkos*, a shuttlecock, and *carpos*, a fruit. Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*. Allied to *Geum*, *Dryas*, and *Purshia*.)

Greenhouse or hardy evergreen shrubs. Cuttings of green shoots in sand, under a glass, in a little heat. Seed. Peat and loam.

- C. betulifolius*. 1885.
 — *Fothergilloides*. 12. Purple. May. Mexico. 1828.
 — *parviflorus*. 2-10. N. America. 1881.

Cereus. 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., *Cactaceæ*. See also **Echinopsis**.)

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, except when they are just making their growth, they will endure a very low temperature, if kept dry. Except 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. Greenhouse.

- C. acuta'ngulus*. Mexico.
 — *Ackermanni*. 1½. Scarlet. Mexico. B. M. t. 3598.
 — *Æthiops*. Brazil. 1829.
 — *affinis*. White.
 — *albisetosus*. 2. St. Domingo. 1816.
 — *albispinus*. 2. St. Domingo. 1816.
 — *amblygonus*. 2. Purple, white. July. 1827.
 — *amblygonus*. Buenos Ayres. 1836.
 — *arcuatus*. White. 1835.
 — *aurus*. S. Amer. 1825.
 — *bacantensis*. Mexico.
 — *baza'rius*. June. Mexico. 1838.
 — *biformis*. June. Honduras. 1840.
 — *cæspitosus*. Texas. 1880.
 — *ca'ndicans*. Mendosa.
 — *chilensis*. Chili.
 — *chiloe'nsis*. Chiloe.
 — *cinerea'scens*. Mexico.
 — *coccineus*. Scarlet. September. Brazil.
 — *cæruleosens*. 3. Blue. July. Brazil. 1829. B. M. t. 3922.
 — *crenulatus*. Curaçoa.
 — *Crimsonii*. 2. Scarlet. 1832. B. R. t. 1565.
 — *crispatus*. Rose. Brazil. 1829.
 — *crenatus*. 2. White. Honduras. 1839. B. R. 1844, t. 31.
 — *Curtisii*. Red, white. June. New Grenada. 1830.
 — *cyllindricus*. 3. Peru. 1799.
 — *Deppelii*. 1. Peru. 1799.
 — *Dyckii*. Mexico.
 — *eburneus*. 3. S. Amer. 1818.
 — *Engelmannii*. California. Gf. t. 1174, f. a.
 — *erio'phorus*. Red. 1835.
 — *euphorbioides*. 3. S. Amer.
 — *exte'nsus*. 6. Pale rose. August. Trinidad. B. M. t. 4066.
 — *Eyre'sii*. White, green. 1829.
 — *Fendleri*. Rose. June. New Mexico. 1880.
 — *ferocis*. 1. Brazil. 1827.
 — *fimbriatus*. 20. Pink. St. Domingo. 1836.
 — *flagelliformis*. Pink. Peru. 1690. Creeping Cereus.
 — *flavispinus*. 3. W. Ind.
 — *formosus*. White. Buenos Ayres. 1834.
 — *fulgidus*. Crimson-scarlet. July. Tropical America. 1870.
 — *fulvispinosus*. 3. S. Amer. 1796.
 — *gemma'tus*. July. Mexico. 1834.
 — *gigantus*. 10. New Mexico.
 — *glau'cus*. Tropical America.
 — *gradicilis*. S. America.
 — *grandiflorus*. White, yellow. Jamaica. 1700. Night-blooming Cereus. B. M. t. 3381.
 — *grandis*. 3. Brazil.
 — *griseus*. 3. Grey. S. Amer. 1809.
 — *Havortii*. 3. Caribbees. 1811.
 — *heptagonus*. 3. White. July. W. Ind. 1728.
 — *hectogonus*. 36. White. August. Surinam. 1690.
 — *hu'milis*. S. Amer. 1827.
 — *hypogæus*. Purple, edged yellow. Chili. 1882. Gf. t. 1035.
 — *hy'strix*. S. Amer. 1808.
 — *Jamaicu'ru*. White. Brazil. 1835.
 — *Lanceolatus*. Scarlet. May. Guiana. 1834.
 — *languinosus*. 1. White. August. W. Ind. 1690.

- C. latifrons*. White. September. S. Amer. 1830. B. M. t. 3813.
- *Leed'rus*. 1. Bright red. Mexico. B. M. t. 4417.
- *Lema'rii*. Yellow and white. June. 1854.
- *le'ptophis*. White, purple. 1835.
- *leuca'nthus*. 1. White, pink. Mendoza. 1830. B. R. 1840, t. 13.
- *lividus*. 10. White. June. Brazil. 1868.
- *MacDona'dia*. Yellow and white. July. 1851. Great night-flowering *Cereus*. B. M. t. 4707
- *ma'gnus*. 3. White. June. St. Domingo. 1829.
- *margina'tus*. Mexico.
- *Martia'nus*. 2. Pink. April. Mexico. 1838. B. M. t. 3768.
- *monoclo'nos*. 20. Rose, white. June. Carib-bees.
- *monstro'sus*. Red, white. S. Amer. 1816.
- *multangula'ris*. Tropical America.
- *mu'tiplez*. Scarlet. St. Domingo. 1829. B. M. t. 3789.
- *myosu'rus*. Brazil. 1828.
- *myriophy'llus*. Brown. 1815.
- *Napoleo'nis*. 6. Green, white. 1834. B. M. t. 3458.
- *ni'ger*. 3. S. Amer. 1820.
- *no'bilis*. 3. Pink. W. Ind. 1811.
- *ochrole'u'sus*. Striped. S. Amer. 1835.
- *ova'tus*. Chili. 1827.
- *oxygonus*. Pink. Brazil. 1829.
- *oxype'talus*. Red. May. Mexico. 1828.
- *panicula'tus*. White, red. St. Domingo. 1827.
- *panicu'pus*. New Mexico. B. M. t. 6774.
- *pectina'tus*. Purplish-red. Mexico. 1875.
- *penta'gonus*. 3. White. July. S. Amer. 1769.
- *pentalo'phus*. Rose, white. Mexico. B. M. t. 3651.
- *Peruvia'nus*. 3. Red. August. Peru. 1728.
- *Phil'ippi*. Chili. Gf. t. 1079, f. 1.
- *Pitajay'a*. 6. White. Carthage. 1836. B. M. t. 4084.
- *poly'gonus*. 10. White. Chili. 1827.
- *Pottsi'i*. Mexico.
- *Pr'i'nglei*. 30. White, tinged with purple. Mexico.
- *procu'mbens*. Mexico.
- *ptero'gonus*. Carthage. S. America. 1863. B. M. t. 5360.
- *pulche'rillus*. White. August. Mexico. 1831.
- *quadrangula'ris*. White. W. Ind. 1809. Creeper.
- *ramo'sus*. July. Mexico. 1838.
- *redu'ctus*. 3. White. Mexico. B. M. t. 4443.
- *regu'lis*. 10. White. S. Amer.
- *repa'ndus*. 20. August. W. Ind. 1728. B. R. t. 336.
- *rosa'ceus*. Rose. 1828.
- *Roye'ni*. 2. White. S. Amer. 1728. B. M. t. 3125.
- *semi'lis*. 20. Red. Mexico. 1823.
- *serpenti'nus*. 4. White, purple. Peru. B. M. t. 3566.
- *seto'sus*. 3. Pink. August. Rio Janeiro. 1829. B. C. t. 1887.
- *speciosi'ssimus*. Crimson. July. S. America. 1836. B. M. t. 3822.
- *specio'sus*. Rose. June. S. America. 1801. B. R. t. 304.
- *sple'ndidus*. Scarlet. September. Mexico. 1831.
- *stri'ctus*. 3. S. Amer. 1823.
- *subrepa'ndus*. 3. 1817.
- *te'nuis*. Pink. Brazil. Creeper.
- *tetraca'ntha*. Rose. July. Mexico.
- *tetra'gonus*. 3. White. July. S. Amer. 1810.
- *triangula'ris*. 1. White. August. W. Ind. 1590. B. R. t. 1807.
- *trigo'nus*. 1. White. S. Amer. 1809.
- *tri'quet*. 3. S. Amer. 1794.
- *trunca'tus*. Red. Brazil. 1821. B. R. t. 696.
- C. tubiflo'rus*. White. 1830
- *tunica'tus*. Brazil. 1832.
- *Twoe'diei*. 3 to 6. Orange-scarlet. September. Buenos Ayres. 1849. B. M. t. 4498.
- *unda'tus*. China. 1829.
- *variabi'lis*. Green, red. August. Tropical America.
- There are many other species named in botanical works; but as little is known of them but their names, and they are probably synonymous with some of those we have retained, we have omitted them until more certainly known.

Ceri'nthe. Honeywort. (From *keros*, wax, and *anthos*, a flower; referring to its being a favourite flower with bees. Nat. ord., *Boragineæ*. 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. aspera*. 2. Yellow, purple. July. South France. 1833. Sibth. Fl. Gr. t. 170.
- *glabra*. Pale yellow. June. Carpathian Mountains. 1827. Syn., *C. alpina*.
- *gymna'ntra*. 3. Yellow, dark-purple. July. Algeria. 1874. B. M. t. 6130.
- *macula'ta*. 2. Yellow, red. July. South France. 1804. Perennial.
- *ma'jor*. 3. Yellow. July. South France. 1596. B. M. t. 333.
- *mi'nor*. 2. Yellow, purple. July. Austria. 1570. B. M. t. 6890.
- *reto'rta*. 2. Yellow, green. July. Levant. 1825. B. M. t. 5264.

Cerope'gia. (From *keros*, wax, and *pege*, a fountain; referring to the form and waxy appearance of the flower. Nat. ord., *Asclepiadaceæ*. Allied to *Hoya*.)

Cuttings of small side-shoots in April, in sand, under a glass, and a little heat; sandy loam, fibry peat, and a little leaf-mould and charcoal. Summer temp., 65° to 80°; winter, 45° to 55°; giving the East Indian species the most heat. More curious than beautiful.

GREENHOUSE.

- C. australis*. 3. N. Holland. 1820. Evergreen twiner.
- *Ba'rkyi*. Green, purple-brown. May. S. Africa. 1877. Twiner, tuberos. B. M. t. 6315.
- *Bouke'ri*. Yellow, green. Caffraria. 1863. Tuber.
- *dichotoma*. 2. White. June. Canary Islands. 1817. Evergreen twiner. Syn., *C. aphylla*.
- *Meyeri*. Pale purplish, blackish-green. S. Africa. 1867.
- *Monti'roæ*. White, green, purple-brown. July. Delagoa Bay. 1884. Climber. B. M. t. 6927.
- *multiflora*. Purplish-green. S. Africa. 1868. Evergreen twiner. Ref. Bot. t. 10.
- *sagitta'ta*. Jacq. H. Schœnb. t. 38. See *Microloma sagittata*.
- *Sandersoni*. Light green, spotted dark green. Summer. Natal. 1863. Evergreen trailer, flowers very curious and beautiful. B. M. t. 5792.
- *sinua'ta*. See *Microloma lineare*.
- *soro'ria*. Green, purple. Caffraria. 1866. Greenhouse climber. B. M. t. 5578.
- *staphelio'rmis*. 4. Purple. July. Cape of Good Hope. 1826. Evergreen trailer. Maund Bot. 4, t. 154.
- *torulo'sa*. See *Riocreuxia torulosa*.

- STOVE.**
C. acuminata. 2. Purple. July. Coromandel. 1820. Tuber.
 — *africana*. 6. Yellow. July. E. Ind. 1823. Evergreen twiner. B. E. t. 626.
 — *bulbosa*. 2. Red, green. May. E. Ind. 1821. Trailer.
 — *Cumingia*'na. Brown. August. Java. 1847. B. M. t. 4349.
 — *dichotoma*. 1. White. July. E. Ind. 1804. Evergreen.
 — *elegans*. 20. Purple. August. E. Ind. 1828. Deciduous twiner. B. M. t. 3015.
 — *Gardneri*. White, chocolate. Ceylon. 1862. Twiner.
 — *juincea*. 1. Yellow. E. Ind. 1822. Evergreen.
 — *Lushii*. Purple. September. Bombay. 1833. Deciduous climber. B. M. t. 3300.
 — *oculata*. 6. Green. Red-spotted. September. Bombay. 1842. Deciduous twiner.
 — *Thwaitesii*. 2½. Red, yellow, green. September. Ceylon. 1851.
 — *tuberosa*. 8. Red, green. May. E. Ind. 1821. Tuberous perennial.
 — *vinosa*'lia. 20. Purple. September. Bombay. 1837. Evergreen twiner. B. M. t. 3740.
 — *Wightii*. 20. Green, purple. August. E. Ind. 1832. Deciduous climber. B. M. t. 3267.

Ceroxylon. (From *keros*, wax, and *xylon*, wood; the trunk being coated with wax. Nat. ord., *Palmaceae*.) The wax obtained from this tree is mixed with bees-wax in New Grenada and formed into candles.

Stove palms. Seeds imported.

- C. andicola*. 50. New Grenada. 1845. Ill. Hort. t. 157.
 — *ferruginum*. Gfl. t. 9, f. 3.
 — *nitidum*. Rev. Hort. 1876, p. 235.

Cespedia. (Dedicated to *Juan Maria Céspedes*, a priest of Santa Fé de Bogota. Nat. ord., *Ochnaceae*.)

Stove tree. For cultivation, see OCHNA.

- C. Bonplandii*. Orange-yellow. Tropical Amer. 1873.

Cestrum. (An ancient Greek name for another plant. Nat. ord., *Solanaceae*; Tribe, *Cestrineae*. Syn., *Habrothamnus*.)

Stove, greenhouse, or half-hardy shrubs. Cuttings in sand, in heat, in April; peat and loam. Of easy culture. *C. tinctorium* is used for dyeing.

- C. alaternoides*. 6. Yellowish. March. Trinidad. 1824. B. M. t. 2929.
 — *angustifolium*. Yellow. W. Indies. 1800. B. C. t. 618.
 — *aurantiacum*. 2. Orange. Guatemala. 1842. B. E. 1845, t. 22.
 — *Benthamii*. 4. Purple. August. 1844. Syn., *Habrothamnus tomentosus*.
 — *bracteatum*. 6. Green. Brazil. 1852. B. M. t. 2974.
 — *calycinum*. 6. Green. October. Buenos Ayres. 1851.
 — *cauliflorum*. Jacq. H. Schenb. t. 325. Now referred to *Acnistus*.
 — *districhum*. White. Cuba.
 — *elegans*. 4. Carmine. January. 1844. Syn., *Habrothamnus elegans* and *purpureus*.
 — *Endlicheri*. 4. Rose. March. Mexico. 1844. Syn., *Habrothamnus corymbosus*. B. M. t. 4201.
 — *fasciculatum*. 5. Crimson. March. Mexico. 1843. Syn., *Habrothamnus fasciculatus*. B. M. t. 4183.

- C. fastigia*'tum. White. November. W. Indies. B. M. t. 1729.
 — *foetidissimum*. Yellow. Autumn and spring. W. Indies. Jacq. H. Schenb. t. 329.
 — *Hartwegii pubescens*. Crimson. 1883.
 — *latifolium*. 6. White. June. Trinidad. 1818.
 — *laurifolium*. Yellowish. Autumn and winter. W. Indies. B. C. t. 1683.
 — *nervosum*, is a synonym of *Tabernaemontana amygdalifolia*.
 — *nocturnum*. Jamaica.
 — *odontospermum*. White. September. Jacq. H. Schenb. t. 331.
 — *Pa'ngui*. Yellowish. June. Chili. 1787. B. M. t. 1770.
 — *pendulinum*. White. December. Caraccas. Jacq. H. Schenb. 327.
 — *roseum*. 3. Rose. July. Mexico. 1839. G. C. 1885, vol. 23, p. 184.
 — *salicifolium*. Yellowish. Caraccas. Jacq. H. Schenb. t. 326.
 — *suberosum*. 5. Sulphur. June. 1815. Jacq. H. Schenb. t. 452.
 — *tinctorium*. 4. White. May. Caraccas. 1823. Jacq. H. Schenb. t. 332.
 — *vespertinum*. White. Winter. Antilles. Jacq. H. Schenb. t. 328.
 — *viridifolium*. Yellowish-green. S. Brazil. 1836. B. M. t. 4022.
 — *Warszewiczii*. Orange, yellow. November. Central America. 1852.

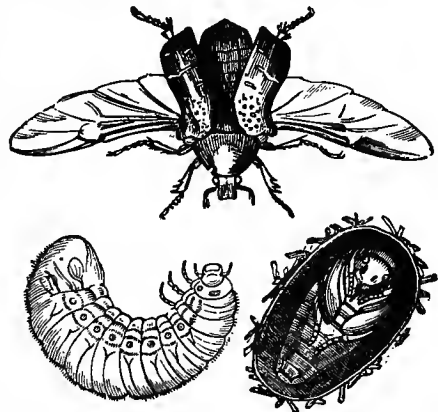
Ceterach. (From *Cheterak*, the Arabic name. Nat. ord., *Filices*—*Poly-podiaceae*.)

Hardy fern, suitable for rockwork; requiring a light, well-drained soil, with much limy rubbish intermixed. See FERNS, HARDY.

- C. officinarum*. 1. Europe.
 — *crenatum*. Scalloped variety.
 — *depauperatum*. Impoverished variety.

There are numerous other varieties known to specialists.

Cetonia aurata. Golden Rose-Beetle. This insect is the *Scarabaeus 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, under-ground, 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 Auts." 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. Our drawing represents the larva, pupa, and beetle of their natural size. 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 flowers of turnips left for seed, white-thorn, candytuft, elder, mountain-ash, and peony, 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 large size of this beetle renders it easy to be caught. Fowls will eat the grubs if turned on newly-dug soil.

Chabræ'a runcinata, B. M. t. 4116. See *Leuceria runcinata*.

Chæna'ctis. (From *chaino*, to gape, *aktin*, ray. Nat. ord., *Compositæ*; Tribe, *Helenioideæ*.)

A large genus of annual, biennial and perennial herbs. The annuals showy border plants. Seeds. Division. Common soil.

C. tenuifolia. Yellow. 1. California. Gf. t. 1275, f. 2.

Chæna'nthe Barkeri. See *Dia-denium Barkeri*.

Chæne'stes lanceolata, B. M. t. 4338. See *Iochroma lanceolata*.

Chænorrhinum. See *Linaria*.

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., *Scrophulariaceæ*.)

All natives of the Cape of Good Hope. Seeds sown in March, in a hotbed, 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. foetidum. 1½. White. June. 1794. Syns., *Buchnera foetida*, Andr. Rep. t. 80, and *Manulea foetida*.

— *villosum*. See *Polycarena capensis*.

GREENHOUSE HERBACEOUS PERENNIALS.

C. cordatum. 1½. White. June. 1816. Syn., *Manulea cordata*.

— *fasciculatum*. 1. White, yellow. Cape of Good Hope.

— *hispidum*. 1. White. July. 1816. Gf. t. 448. Syns., *Manulea hispida* and *oppositifolia*.

— *linifolium*. 1. White, yellow. November. Cape of Good Hope. Pax. Fl. Gard. 3, f. 233.

— *polyanthum*. ½. Lilac, yellow. June. 1844. B. R. 1847. t. 32.

Chæta'nthera. (From *chaite*, a bristle, and *anther*, an anther, or pollen-bag; the anthers being furnished with tufts of bristly hairs. Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*. Allied to *Mutisia*.)

All natives of Chili, and half-bardy herbaceous perennials, except *C. linearis*. Division of the roots in March or April. *C. linearis* by seed. Peat and loam. Protection of greenhouse or cold pit in winter.

C. chilensis. 1. Yellow. July. 1827. Annual.

Syn., *C. serrata*. Swt. Fl. Gard. t. 214.

— *ciliata*. 2. July. 1822.

— *linearis*. Yellow. July. 1837. Annual.

— *tenuifolia*. Yellow. July. 1827.

Chætoca'lyx. (From *chaite*, a bristle, and *kalyx*, a flower-envelope; in reference to the calyx being furnished with bristles. Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*. Allied to *Hedysarum*.)

Stove evergreen twiner. Cuttings of ripe shoots in heat. Peat and loam.

C. vincentina. 6. Yellow. June. St. Vincent. 1823. Syn., *Glycine vincentina*. B. R. t. 799.

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., *Melastomaceæ*. Allied to *Osbeckia*.)

Seeds in hotbed, in March; and cuttings in sandy soil, in heat. Peat and loam. Summer.

C. gracilis. 1. Red, lilac. Brazil. 1834. Stove perennial. B. M. t. 3481. Syns., *Lasiandra gracilis* and *Pteroma gracilis*.

— *lanceolata*. 1. White. January. Trinidad. 1820. Stove Annual. Syns., *Micranthella lanceolata* and *Pteroma lanceolata*.

— *Lindleyana*. 1. Crimson. Columbia. 1856. Greenhouse evergreen. Fl. Ser. t. 1011-2.

— *strigosa*. ½. Rosy-purple. August. W. Ind. 1848. Greenhouse evergreen. Pax. Mag. 15, p. 265. Syns., *Herpestionia strigosa* and *Pteroma strigosa*.

Chaff-flower. *Alternanthera achyrantha*.

Chai'scia *Myc'ni*. See **Ra-**
mondia *pyrenaica*.

Chalk. Carbonate of lime contains, when pure, carbonic acid, 45 parts; lime, 55; but, as it usually occurs, it contains about twenty-four per cent. of water, and five 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 neutralizes 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.

Chamæba'tia. (From *chamai*, dwarf, and *batos*, a bramble; referring to its low growth and bramble-like flowers. Nat. ord., *Rosaceæ*.)

Evergreen half-hardy shrub. Cuttings in a cool frame. Light loam and a little peat.

C. foliolosa. 3. White. California. 1859.

Chamæe'rasus *Albe'rti* is a garden name for a species of **Lonicera** with rose-coloured flowers, and greyish leaves. *Ch. alpi'gena*, var. *na'na* is a variety of *Lonicera alpigena*.

Chamæcla'don. (From *chamai*, dwarf, and *clados*, branch. Nat. ord., *Aroideæ*.)

C. meta'llicum. Leaves bronzy-green above, reddish beneath. Spathe purple. 1884. Ill. Hort. t. 539.

— *rubens*. Borneo. 1881.

Chamæcy'paris. White Cedars. (From *chamai*, ground, meaning dwarf, and *cypressus*, cypress; the Cypress dwarf, or Bastard Cypress. Nat. ord., *Coniferæ*. Allied to *Taxodium* and *Cypress*.)

Hardy evergreens. Seeds. Deep, sandy soil.

C. andelyensis. See *Retinospora leptoclada*

— *dubia*: See *Retinospora dubia*.

— *Ellwangeriana*. See *Retinospora Ellwangeriana*.

— *filicoides*. Japan. 1868.

— *filifera*. Japan. 1867.

— *juniperoides*. See *Retinospora juniperoides*.

— *Larsoniana*. N. California. B. M. t. 5581.

— *leptoclada*. Japan. 1863. Dwarf shrub.

C. lycopodioides. Japan. 1861.

— *Rosenthalii*. Pyramidal, branchlets not drooping. 1886.

— *variegata*. Ill. Hort. t. 367.

— *nutkaensis*. 70. Nootka Sound. N. Amer.

Rev. Hort. 1869, p. 48.

— *obtusata*. 80. Japan. Rev. Hort. 1869, p. 97.

— *variegata*. Twigs variegated with white.

Japan. 1871.

— *pisifera*. A small tree. Island of Nippon.

— *au'rea*. Terminal shoots of a golden hue.

Japan. 1861.

— *variegata*. Twigs variegated with white.

Japan. 1861.

— *sphaeroides*. A small tree. N. Amer.

— *squarrosa*. A bush. Japan.

— *thurifera*. See *Cupressus thurifera*.

— *Veitchii*. Japan. 1864.

Chamædo'rea. (From *chamai*, dwarf, and *dorea*, a gift; referring to the nuts of this palm being easily reached. Nat. ord., *Palmeæ*; Tribe, *Areceæ*. Allied to *Areca*.)

Stove Palms. Seeds, when obtainable. Rich, sandy loam.

C. Arenbergiana. 5. Straw-colour. March. Guatemala. 1879. B. M. t. 6838.

— *eburnea*. Midribs white. Columbia.

— *elatior*. 12. Mexico. 1843.

— *e'legans*—*mas*. 3½. Scarlet. February.

Mexico.

— *Ernesti Augu'sti*—*mas*. Orange. New Gre-

nada.

— *formosa*. Tolima. 1876. Fl. and Pom. 1876,

p. 247.

— *fragrans*. 8. White. Trinidad. 1820. Syns.,

Morenia fragrans, and *Nunnezharia fra-*

grans.

— *geonomæformis*. Green. Guatemala. 1856.

Syn., *Nunnezharia geonomæformis*.

— *glaucofolia*. 12. 1881.

— *gracilis*. 10. White, green. Caraccas. 1803.

— *Lindleyana*. 10. New Grenada. 1846. Syn.,

Kunthia montana.

— *polita*. Mexico.

— *pulchella*. 4. Yellow. 1885.

— *scandens*. Mexico. 1846.

— *Schiedea* *na*. 8. Mexico. 1834.

— *Tepejilote*. 10. Yellow. Mexico. 1873.

— *Wobstiana*. 4. Yellow. 1885.

Chamæfi'stula. Same as **Cassia**.

Chamælau'cium. (From *chamai*, *leuke*, a dwarf, white poplar; because its heathy stems are miniatures of that tree. Nat. ord., *Myrtaceæ*; Tribe, *Chamælauriaceæ*.)

A very beautiful greenhouse evergreen shrub. Cuttings of the points of shoots or side-shoots, when getting firm, in sand, under a bell-glass; one part fibry peat, and two of sandy, lumpy loam.

C. ciliatum. 2. White. May. W. Australia. 1825.

— *plumosum*. See *Verticordia Fontanesii*.

Chamæle'don. See **Loiseleuria**.

Chame'lum. (From *chamai*, dwarf, and *melon*, apple; the blossoms being supposed to resemble apples. Nat. ord., *Iridææ*.)

Perennial herb.

C. luteum. Yellow. Andes of Chili. 1833. Gf t. 1129, f. 69.

Chamænerium. See **Epilobium.**

Chamæpeuce. (From *chamai*, dwarf, and *peuke*, pine; the leaves are linear, as in the pine. Nat. ord., *Compositæ*; Tribe, *Cynaroidæ*.)

C. diacantha. See *Cirsium diacanthum*.
— *Sprengeri.* Wien. Gart. Zeit. 1883, p. 439.

Chamæranthemum. (From *chamai*, dwarf, and *anthos*, a flower. Nat. ord., *Acanthaceæ*.)

Stove plant. For cultivation See LANKESTERIA.

C. Beyrii chii variegatum. White; leaves white, striped. S. Brazil. 1866. B. M. t. 5557.
— *Gardichaui dii.* Brazil. 1869. Fl. Ser. t. 1767.
— *igneum.* Yellow; leaves with red veins. Syns., *Eranthemum igneum*, Fl. Ser. t. 1722, and *Stenandrium igneum*.
— *nitidum.* See *Ebermaiera*.
— *picatum.* Leaves with orange margins and central silvery blotch. Brazil. 1878.

Chamærhodos. (From *chamai*, dwarf, and *rodon*, a rose; in reference to the appearance of the plants. Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*.)

Hardy herbaceous perennials; chiefly by seeds; sandy loam; and a dry, elevated position.

C. erecta. 1. Pink. July. Siberia. 1806. Syn., *Sibbaldia erecta*.
— *grandiflora.* Yellow. June. Dahuria. 1829. Syn., *Sibbaldia grandiflora*.
— *polygyna.* Yellow. June. Siberia. 1824.

Chamærops. (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., *Palmeæ*; Tribe, *Coryphææ*.)

Seeds, imported; suckers, which are freely produced, with the exception of *C. gracilis* and *guianensis*. The others will flourish in a greenhouse; and their leaves render them striking objects. In the North of England *C. humilis* stood out several winters, with but a slight protection; rich, loamy soil. Summer temp., 50° to 80°; winter, 35° to 45°.

C. acutis. See *Sabal Adansoni*.
— *excelsa.* 30. Green, white. Nepal. 1822.
— *Fortunei.* B. M. t. 5224. See *Trachycarpus excelsus*.
— *gracilis.* 10. Green, white. S. Amer. 1822. Stove.
— *Griffithii.* See *Trachycarpus khasyanus*.
— *guianensis.* 20. Green, white. Guiana. 1824. Stove.
— *humilis.* 10. Green, white. March. South of Europe. 1731.
— *— dactylocarpa.* Fronds elongated. 1889.
— *— tomentosæ.*
— *hystris.* 10. Green, white. Georgia. 1801.
— *khasyana.* See *Trachycarpus khasyanus*. B. M. t. 7128.
— *macrocarpa.* North Africa.
— *Martiana.* 20. Nepal. 1820.
— *Palmetto.* 20. Green, white. Carolina. 1801.
— *Ritheadna.* 3. Nepal. 1845.
— *serrulata.* 10. Green, white. N. Amer. 1809.
— *stauracantha.* See *Acanthorrhiza aculeata*.

Chamissoa. (Named after *M.*

Camisso, a botanist. Nat. ord., *Amaranthaceæ*.)

Stove annuals, except *C. altissima*, which is an evergreen shrub; the annual by seeds sown in March; the evergreen by cuttings of ripe shoots in heat, under a bell-glass; fibry, sandy loam. Summer temp., 60° to 85°; winter, 50° to 55°.

C. altissima. 5. Yellow. July. Jamaica. 1816.
— *dichotoma.* 1. Yellow. July. E. Indies. 1824.

Syn., *Celosia dichotoma*.
— *nodiflora.* 2. Green. August. E. Indies. 1780. Syn., *Celosia nodiflora*.
— *pyramidalis.* 1. White. July. E. Indies. 1820. *Celosia pyramidalis*.

Chamoerhas alpina. See **Herminium alpinum.**

Chaptalia. (Named after *M. Chaptal*, a French chemist. Nat. ord., *Compositæ*. Allied to *Cussonia*.)

Hardy herbaceous perennial; division of the roots; light, sandy soil.

C. tomentosæ. 3. White. May. N. Amer. 1806. B. M. t. 2257.

Charæas graminis. Syns., *Bombyx graminis* and *Cerapteryx graminis*. 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. This moth, represented of its largest size in our drawing, 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 Tweedale 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.

Charcoal. Soot, a chief constituent of which is charcoal, has long been known as a very effective fertilizer; 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 pine-apples 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. Sennebler, 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 oxygen, and emits carbonic acid; in fact, it slowly dissolves. We are sorry to differ from such an authority as 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**.

Chard'nia. (After *Jean Chardin*, who wrote *Voyage en Perse*. Nat. ord., *Compositæ*; Tribe, *Cynaroidæ*.)

Hardy annual. Seeds in open border in April. *C. zeranthemoides*. 1. White. July. Asia Minor. Syn., *Xeranthemum orientale*.

Chari'eis. (From *charieis*, elegant; referring to the flowers. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*. Allied to *Aster*.)

Hardy annual. Seeds in the open ground in April, or on a hotbed in March, and afterwards transplanted.

C. heterophylla. 1. Blue. June. S. Africa. 1819. Syn., *Kaulfussia amelloides*. B. M. t. 2177. There is a very dark blue variety called *atrocerulea*.

Chardoon. See **Cardoon**.

Charles's Sceptre. *Pedicularis sceptrum carolinum*.

Charlock. *Sinapis arvensis*. A well-known weed.

Charlwoo'dia. New Holland Dragon-tree. The species are now united to *Cordyline*.

Chasca'num. See **Bouchea**.

Cheese-rennet. *Gaulium verum*.

Cheila'nthes. (From *cheilos*, a lip, and *anthos*, a flower; in reference to the form of the organs of fructification. Nat. ord., *Filices*—*Polypodiaceæ*. Allied to *Adiantum*. Syn., *Adiantopsis*.)

A large genus of handsome stove and greenhouse ferns. Division of the roots, just when commencing to grow. Peat and loam.

HARDY.

C. fragrans odora. ½. June. Switzerland. 1819. Syn., *C. odora*.
— *lanuginosa*. ½. July. N. America. Syns., *C. gracilis* and *C. vestita*.

GREENHOUSE.

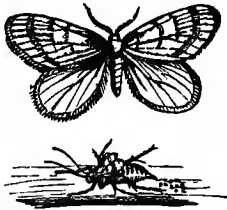
C. arge'ntea. Silvery. ½. Siberia.
— *cauda'ta*. ½. June. Australia. 1824.
— *fra'grans*. ½. August. Madeira. 1778.
— *hi'rtia*. ½. June. Cape of Good Hope. 1806
— *macrophylla*. 1. August. W. Indies.
— *mysure'nsis*. Japan. 1862.
— *pteroi'des*. ½. July. Cape of Good Hope. 1775.
— *suave'olens*. August. Madeira. 1778. A form of *C. fragrans*.

STOVE.

C. alabame'nsis. ½. United States.
— *bra'chypus*. ½. Mexico.
— *califo'r'nica*. California. 1882. Syn., *Hypolepis californica*.
— *chlorophylla*. Brazil.
— *crenula'ta*. 1. 1824.
— *cunea'ta*. See *Pellea angustifolia*.
— *dicksonioi'des*. 4. August.
— *farino'sa*. Yellow. Tropical Asia and Africa. B. M. t. 4765. Syn., *C. dealbata*.
— *ferrugi'nea*. ½. Brown. June. 1816.
— *fra'gilis*. Moulmein.

- C. glauca*. Chili.
 — *hirsuta*. Fronds hair-scaly beneath. Chili. 1871.
 — *lenti gera*. $\frac{1}{2}$ June. New Spain.
 — *microphylla*. Tropical America.
 — *micromera*. Mexico.
 — *microptera*. $\frac{1}{2}$ September. 1838.
 — *multifida*. 1. Cape of Good Hope.
 — *Preissiana*. 1. Swan River.
 — *profusa*. $\frac{1}{2}$ September.
 — *pulveracea*. Mexico.
 — *repens*. 1. July. W. Indies. 1824.
 — *rufa*. $\frac{1}{2}$ Reddish-brown. N. India. Hook. Sp. Fil. t. 99a.
 — *rufescens*. $\frac{1}{2}$ September. 1838.
 — *Sieberi*. 1. Australia.
 — *sinuosa*. 1. August. W. Indies.
 — *spectabilis*. $\frac{1}{2}$ September. Brazil. 1829.
 — *tenuifolia*. September. Ceylon.
 — *viscosa*. Mexico. 1841.

Cheimatobia brumata. Winter or Evesham Moth. This is the cause of more destruction to our fruit and other



MALE AND FEMALE.

trees than almost any other insect; for no weather is sufficiently severe to injure either it or its 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 smearing round their trunks a band of any sticky substance, such as cart-grease, which will not injure the bark. Tar was formerly much used, but cannot be recommended. 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 underwings 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 alto-

gether. 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 hornbeam.—(“The Cottage Gardener,” i. 53.) The caterpillar descends into the earth, and becomes a chrysalis about the end of May.

Cheira'nthera. (From *cheir*, the hand, and *antheros*, flowers. Nat. ord., *Pittosporaceæ*.)

Greenhouse small shrub. For cultivation, see PITTOSPORUM.

C. linearis. Blue. November. N. S. Wales. 1822. Fl. Ser. t. 856.

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., *Cruciferæ*; Tribe, *Arabideæ*.)

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 rockwork.

C. alpinus. $\frac{1}{2}$ Yellow. May. South Europe. 1810.

— *arbores*. 3. Yellow. May. Egypt. 1827.

— *capitata*. Yellow. June. Columbia. 1826.

Hardy herbaceous perennial.

— *Cheiri*. 2. Orange. May. South Europe.

1573. Common Wallflower. Eng. Bot.

ed 3, t. 106.

— *ferrugineus*. 2. Brown. May. South

Europe. 1573.

— *flavescens*. 2. Yellow. May. South

Europe. 1573.

— *flore-pleno*. 2. Yellow. May.

— *grandiflorus*. 2. Yellow. May. South

Europe. 1573.

— *hæmantis*. 2. Crimson. May. South

Europe. 1573.

— *hæmantis-variegatus*. 2. Crimson.

June. South Europe.

— *maurimius*. 2. Yellow. May. South

Europe. 1573.

— *patulus*. 2. Yellow. May. South

Europe. 1573.

— *purpureus*. 2. Purple. June. South

Europe.

— *purpureo-variegatus*. 2. Purple. June.

South Europe.

— *sanguineus*. 2. Bark brown. May.

— *serratus*. 2. Yellow. May. South

Europe. 1573.

— *thyrsoides*. 2. Blood. May. South

Europe. 1573.

— *varius*. 2. Variegated. May. South

Europe. 1573.

- C. Cheiri fruticulosa*. 1½. Yellow. May. Britain. Hardy herbaceous perennials.
 — *linifolius*. 2. Purple. April. Spain. 1815.
 — *Marshallii*. 1½. Orange. Spring. Supposed hybrid.
 — *mutabilis*. 3. Yellow, purple. April. Madeira. 1777. B. M. t. 195.
 — — *longifolius*. 3. White, purple. September. Madeira. 1815.
 — *scoparius*. 3. White, purple. June. Tenerife. 1812. B. R. t. 219.
 — — *ceruginosus*. 3. Rusty. June. Tenerife. 1812.
 — — *chamaeleo*. 3. Yellow, purple. June. Tenerife. 1812. Syn., *C. Cheiri*, var. *chamaeleo*. B. M. t. 219.
 — *semperfoliens*. 2. White. Barbary. 1815.
 — — *frutescens*. 2. White. May. Tenerife. 1815.
 — *tenuifolius*. 2. Yellow. June. Madeira. 1777.

EXCLUDED SPECIES.

- C. armeniacus*. B. M. t. 835. See *Erysimum ibericum*.
 — *bicolor*. See *Erysimum*.
 — *Chicus*. See *Malcolmia Chia*.
 — *collinus*. See *Erysimum collinum*.
 — *decumbens*. See *Erysimum*.
 — *Farsesia*. See *Farsesia aegyptiaca*.
 — *ferrugineum*. See *Erysimum virgatum*.
 — *helveticum*. See *Erysimum helveticum*.
 — *hieracifolius*. See *Erysimum strictum*.
 — *leptophyllum*. See *Erysimum leptophyllum*.
 — *littoreum*. See *Malcolmia littorea*.
 — *lyrata*. See *Malcolmia lyrata*.
 — *maritimum*. B. M. t. 166. See *Malcolmia maritima*.
 — *ochroleucum*. See *Erysimum ochroleucum*.
 — *odoratissimum*. Jacq. H. Schœnb. t. 479. See *Matthiola odoratissima*.
 — *rhœticum*. See *Erysimum rhœticum*.
 — *strictum*. See *Heliphila scoparia*.
 — *strigosum*. See *Erysimum strigosum*.
 — *tristis*. B. M. t. 729. See *Matthiola*.
 — *versicolor*. See *Erysimum*.

Cheiro'stemon. 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., *Malvaceæ*.)

Stove tree. Cuttings of rather firm shoots in sandy peat, under a glass, and in bottom-heat. Sandy loam and fibry peat. Summer temp. 60° to 80°; winter, 48° to 55°.

- C. platanoides*. 30. New Spain. 1820. B. M. t. 5135.

Cheiro'stylis. (From *cheir*, the hand, and *stylos*, a column. Nat. ord., *Orchidaceæ*.)

Stove orchids, grown in pots. See ORCHIDS.

- C. grandiflora*. Pink, white. Belg. Hort. 1861, t. 18, f. 4.
 — *marmorata*. White, red; leaves beautifully veined. September. E. Indies.
 — *montana*. Belg. Hort. 1861, t. 18.
 — *parviflora*. ½. White. September. Ceylon.

Chelidonium. 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., *Papaveraceæ*.)

The yellow juice of the common Celandine (*C. majus*) is said to be a violent acrid poison, and

a popular remedy for warts. Hardy herbaceous perennials. Division. Common garden-soil.

- C. diphyllum*. See *Stylophorum diphyllum*.
 — *grandiflorum*. 2. Yellow. May. Dahuria. 1820. Syn., *C. dahuricum*.
 — *hybridum*. See *Raemera hybrida*.
 — *majus*. 2. Yellow. May. Europe.
 — — *Jo're-pléno*. 2. Yellow. September. Gardens.
 — — *laciniatum*. Leaves much divided.

Chelone. (From *chelone*, a tortoise; the back of the helmet of the flower being fancifully compared to a tortoise. Nat. ord., *Scrophulariaceæ*; Tribe, *Cheloneæ*. 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 peat and leaf-mould, all the better.

- C. angustifolia*. See *Pentstemon campanulatus*.
 — *atropurpurea*. Swt. Fl. Gard. t. 235. See *Pentstemon campanulatus*.
 — *barbata*. B. R. t. 116. See *Pentstemon barbatus*.
 — *cœrulea*. See *Pentstemon cœruleus*.
 — *campanuloides*. Andr. Rep. t. 40. See *Pentstemon campanulatus*.
 — *centranthifolia*. See *Pentstemon centranthifolius*.
 — *cheilanthisifolia*. 7. Orange-scarlet. California. Pax. Mag. ii. 50.
 — *cristata*. See *Pentstemon cristatus*.
 — *digitata*. Swt. Fl. Gard. t. 120. See *Pentstemon lævigatus*, var. *digitalis*.
 — *elegantis*. See *Pentstemon campanulatus*.
 — *erianthera*. See *Pentstemon eriantherus*.
 — *gentianoides*. See *Pentstemon gentianoides*.
 — *glabra*. 4. White. August. N. Amer. 1730.
 — — *obliqua*. 4. Purple. August. N. Amer. 1752. Syn., *C. obliqua*, B. R. t. 175, and *C. purpurea*.
 — *hirsuta*. See *Pentstemon pubescens*.
 — *Lyo'ni*. 4. Purple. August. N. Amer. 1812. Swt. Fl. Gard. t. 293. Syn., *C. major*.
 — *mexicana*. Scarlet. June. Mexico. 1842.
 — *nemorosa*. 1. Purple. August. N. Amer. 1827.
 — *rosea*. See *Pentstemon campanulatus*.
 — *ruellioides*. Andr. Rep. t. 34. See *Pentstemon barbatus*.
 — *speciosa*. 4. Pale red. August. N. Amer.

Chelonea. (From *chen*, a goose, and *leia*, prey; in reference to the plant being eaten by those birds. Nat. ord., *Chenopodiaceæ*.)

Greenhouse evergreen. Cuttings of half-ripe shoots under a glass, in sandy loam. Summer temp., 55° to 80°; winter, 35° to 45°.

- C. diffusa*. 1. Green. August. Cape of Good Hope. 1758.

Chenopodium. (From *chen*, a goose, and *pous*, a foot; shape of leaves. Nat. ord., *Salsolaceæ*.)

Hardy annual. See ANNUALS. Numerous species of this genus are met with in botanical gardens only, being of no value for decorative purposes. *C. Bonus-Henricus* is esteemed in some countries as a substitute for Asparagus.

- C. purpurascens*. 3. Purplish red; stem and floral leaves purple. China. Jacq. Vind. 3, t. 80. Syn., *C. Atriplicis*.

Chermes Gall. See *Adelges abietis*.

Che'rmes la'ricis is an Aphis, which attacks the young bark and leaves of the Larch, by laying its eggs at the bases of the bundles of young leaves in spring. The yellowish oval eggs are furnished with a slender stalk. The females of the first brood are of a dusky violet colour, and destitute of wings, while the subsequent ones are yellowish with brown heads, and two pairs of wings, the main vein of the anterior pair has but two side veins. The Aphis has been destroyed from young Larches by watering them with dilute paraffin.

Che'rmes abie'tis is a synonym of *Adelges abietis*, described and figured at page 14 of this work.

Cherry. See *Ce'rasus*.

Cherry Laurel. The common Laurel, *Ce'rasus lau'ro-ce'rasus*.

Cherry Pepper. *Ca'psicum cera-sifo'rme*.

Cherry Plum. *Pru'nus cerasi'fera*.

Chervil. Parsley-leaved. *Anthr'i'scus cerefo'liata*. Fern-leaved Chervil, or Sweet Cicely, *Cherophy'llum aroma-ticum*, for soups, salaads, etc. They are not often found in the kitchen-garden.

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, a quarter of an inch deep, and thin the seedlings out to six inches apart in the rows.

Chestnut. See *Casta'nea*.

Chevallie'ra Ve'itchii. See *Echmea Veitchii*. (Nat. ord., *Bromelaceæ*.)

C. erocophylla. 3. Rose. Brazil. Belg. Hort. 1885, p. 81.
—*giga'ntea*. 9. Rose. Brazil. 1808.

Chicasaw Plum. *Ce'rasus chi-casa*.

Chicken Grape. *Vitis cordi-folia*.

Chickling Vetch. *La'thyrus sa-tivus*.

Chick Pea. *Ci'cer arietinum*.

Chickweed. *Alsine*.

Chicory. Succory, or wild Endive (*Cichorium intybus*.) 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 done annually; for, although it is a perennial, yet, after having been 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 made previous to June, when of nearly full growth (which they arrive at in about four months from the sowing 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 lifted, 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.

Chili Pepper. *Ca'psicum*.

Chilian Nut. *Guevi'na avella'na*.

Chilia'nthus. (From *chilioi*, thou-

sand, and *aden*, a gland; the leaves are often beset with glands. Nat. ord., *Loganiaceæ*; Tribe, *Euloganiaceæ*.)

Greenhouse evergreen.

C. arbo'reus. 6. White. August. South Africa. 1816. Syn., *Buddleia saligna*.

Chilo'dia. (From *cheilos*, a lip, and *odous*, a tooth; the lip of the flower being toothed. Nat. ord., *Labiatae*; Tribe, *Prostrantherae*. Allied to *Prostranthera*.)

Greenhouse evergreen shrub; cuttings of young shoots set firm in sand, under a bell-glass; peat and loam. Summer temp., 55° to 75°; winter, 40° to 45°.

C. austri'lis. 3. Violet. July. N. Holland. — *scutellarioides*, B. M. t. 3405. See *Prostranthera empetrifolia*.

Chilo'psis. (From *cheilos*, a lip, and *opsis*, like; referring to the irregular lobes of the corolla. Nat. ord., *Bigoniaceæ*; Tribe, *Tecomeæ*. Allied to *Catalpa*.)

Greenhouse evergreen shrub; cuttings of half-ripened shoots in sand, under a bell-glass, in bottom heat; peat and fibry loam. Summer temp., 60° to 90°; winter, 48° to 55°.

C. lineari'sis. Rose. May. Mexico. 1825. Syn., *C. saligna*.

Chima'phila. (From *cheima*, winter, and *phileo*, to love; these little plants being green all winter. Nat. ord., *Ericaceæ*; Tribe, *Pyroleæ*.)

Hardy herbaceous perennials; divisions and suckers; peat and sandy soil.

C. macula'ta. $\frac{1}{2}$. Pink. June. N. Amer. 1752. Syn., *Pyrola maculata*, B. M. t. 897.

— *umbella'ta*. $\frac{1}{2}$. White. June. N. Amer. 1752. Syn., *C. corymbosa* and *Pyrola umbellata*, B. M. t. 778.

Chimona'nthus. (From *cheima*, winter, and *anthos*, a flower; referring to the time of flowering. Nat. ord., *Calycanthaceæ*.)

Half-hardy deciduous shrubs; 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. 6. Yellow, red. December. Japan. 1766. Syn., *Calycanthus præcox*, B. M. t. 466. Japanese allspice.

— *grandiflo'rus*. 8. Yellow. December. China. B. R. t. 451.

— *parviflo'rus*. 8. Pale yellow. December. Japan. 1818.

China Aster. See **Callistephus**.

Chinese Rose. *Hibi'scus ro'sa-sinensis*.

Chioco'cca. Snowberry. (From *chion*, snow, and *kokos*, a berry. Nat. ord., *Rubiaceæ*; Tribe, *Chiococceæ*. Allied to *Psychotria*.)

The roots of *C. angui'fuga* and *densifolia* 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. 3. White. Leaves oval. July. Brazil. 1824.

— *laxiflo'ra*. A climber. Leaves oblong.

— *densiflo'ra*. 3. White. Brazil.

— *racemo'sa*. 6. White. February. Jamaica. 1729. Andr. Rep. t. 284.

Chiona'nthus. Fringe-tree (From *chion*, snow, and *anthos*, a flower. Nat. ord., *Oleaceæ*.)

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. 7. White. June. Queensland. 1810.

— *retu'sa*. 5. White. May. China. 1852. Pax.

Fl. Gard. iii. p. 85, f. 273.

— *virgi'nica*. 30. White. June. N. Amer. 1736.

— *angustifolia*. 30. White. June. N. Amer. Wats. Dendr. t. 1.

— *latifolia*. 30. White. June. Carolina.

— *maritima*. 10. White. June. N. Amer. 1736.

Chionodo'xa. (From *chion*, snow, and *doxa*, glory; the species flower among the melting snows of their native habitat. Nat. ord., *Liliaceæ*. Allied to *Scilla*.)

Hardy early spring-flowering bulbs. Readily increased by offsets. *C. Luciliae* is an extremely pretty and effective plant. Common soil.

C. cre'tica. $\frac{1}{2}$. White, pale blue. Spring. Mountains of Crete.

— *grandiflo'ra*. $\frac{1}{2}$. Blue. Spring. Asia Minor.

— *Tmolu'sii*. $\frac{1}{2}$. Pale blue. Spring. Asia Minor.

— *Luci'licæ*. $\frac{1}{2}$. Blue. Spring. Anatolia. 1877. Garden, 1885, p. 239. Syn., *C. Forbesii*. B. M. t. 6433.

— *na'na*. $\frac{1}{2}$. White, lilac. Crete. 1880. B. M. t. 6453.

— *sarde'nsis*. Dark blue with a white eye. 1885. Gf. t. 1255, f. b-c.

Chionogra'phis. (From *chion*, snow, and *graphis*, a pencil; flower spike like a brush of snow. Nat. ord., *Liliaceæ*; Tribe, *Narthecieæ*.)

A pretty herbaceous perennial; hardy, but should be protected by a frame in winter. Seeds divisions of the roots. Loam and peat.

C. japo'nica. $\frac{1}{2}$ to 1. White. Spring. Japan. 1880. B. M. t. 6510.

Chiono'phila. (From *chion*, snow, and *phileo*, to love; referring to the Alpine habitat of this plant. Nat. ord., *Scrophulariaceæ*.)

Hardy Alpine perennial.

C. Jame'sii. $\frac{1}{2}$. Cream. Colorado. 1888. G. and F. 1888, i., p. 79, f. 15.

Chiri'ta. (From *cheryta*, the Hindoostanee for the Gentian-plant. Nat. ord., *Gesneraceæ*. Allied to *Streptocarpus*.)

Stove evergreens, except *C. sine'nsis*. Seeds sown in a hotbed, in spring, and cuttings in March and April, in sandy peat, under a bell-

glass. Peat and loam. Summer temp., 55° to 80°; winter, 40° to 45°.

- C. Horsfieldii*. 1½. White, purple. September. Java. 1845. Syn., *Liebigia speciosa*, B. M. t. 4315.
 — *lilacina*. Pale hline, white, yellow. Chiriqui. 1870. Ill. Hort. t. 608.
 — *Moo'ni*. 2. Pale purple. July. Ceylon. 1847. B. M. t. 4405.
 — *sine'nsis*. ½. Lilac. July. China. 1843. Greenhouse evergreen. B. R. 1844, t. 59.
 — *Walke'ria*. 1½. Pale yellow. Ceylon. 1845. B. M. t. 4327.
 — *zeylanica*. 1½. Purple. June. Ceylon. 1845. B. M. t. 4182.

Chironia. (A classical name, after *Chiron*, one of the centaurs, fabled to be the father of medicine. Nat. ord., *Gentianeae*.)

Greenhouse evergreens, from the Cape of Good Hope. Cuttings in sandy peat, under a bell-glass. Peat, three parts; loam, one part; all fibry, with a little sand and charcoal, and good drainage. Winter temp., 40° to 45°.

- C. angustifolia*. B. M. t. 818. See *Orphium frutescens*.
 — *baccifera*. 2. Yellow. June. 1759. B. M. t. 233.
 — *decussata*. B. M. t. 707. See *Orphium frutescens*.
 — *floribunda*. 1. Rose. May. 1842.
 — *frutescens*. 1½. Red. July. 1756.
 — *albiflora*. 1½. White. July. 1756.
 — *glutinosa*. 3. Red, lilac. 1844.
 — *gracilis*. See *Sabbatia gracilis*.
 — *jasmoides*. 2. Purple. May. 1812.
 — *linoides*. 2. Red. August. 1787. B. M. t. 511.
 — *lychnoides*. 2. Purple. May. 1816.
 — *nudicaulis*. 1. Purple. July. 1816.
 — *pedunculata*. 3½. Purple. July. 1830. B. R. t. 1803.
 — *serpyllifolia*. 1. Yellow. August. 1829.
 — *tetragnona*. 1. Yellow. July. 1824.
 — *trine'nsis*. See *Evacuum zeylanicum*.

Chiton. (From *chiton*, a coat of mail; the seeds, when dry, having a rough or scabrous exterior. Nat. ord., *Zygophylleae*.)

Stove evergreens. Cuttings in sand, in heat, in April. Peat and loam. Summer temp., 60° to 80°; winter, 45° to 55°.

- C. albicans*. See *Miconia albicans*.
 — *Fothergillia*. See *Miconia Fothergillia*.
 — *macrophylla*. See *Miconia macrophylla*.
 — *mexicana*. Red-purple. Mexico. This is the only species now retained in this genus.
 — *pyramidalis*. See *Miconia pyramidalis*.
 — *Tambo'nia*. See *Miconia Swartziana*.

Chive or **Cive** (*Allium schoenoprasum*) 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 substi-

tute 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.

Chlidanthus. (From *chlideos*, delicate, and *anthos*, a flower. Nat. ord., *Amaryllideae*. Sometimes erroneously spelt *Clidanthus*. 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 fibry loam.

- C. fragrans*. 1. Yellow. June. Buenos Ayres. 1820. B. R. t. 640.

Chloanthus. (From *chloa*, greenish-yellow, and *anthos*, a flower; in reference to its greenish flowers. Nat. ord., *Verbenaceae*; Tribe, *Cloanthae*. Allied to *Lantana*.)

Greenhouse evergreens, from Australia. Cuttings of young shoots in sandy soil, under a glass; fibry loam, and turfy, sandy peat. Winter temp., 40° to 45°.

- C. glandulosa*. 2. Green, yellow. July. New S. Wales. 1824.
 — *rosmarinifolia*. 2. Green, yellow. July. 1823.
 — *stachadisi*. 2. Green, yellow. July. New S. Wales. 1822.

Chlo'ra. Yellowwort. (From *chlo'ros*, greenish-yellow. The flowers of *C. perfoliata*, a British plant, are yellow, and turn green when dried. Nat. ord., *Gentianeae*.)

The leaves of these plants are a good substitute for gentian. Hardy annuals. Seeds sown in April in the open border.

- C. grandiflora*. Yellow. N. Africa. 1865.
 — *imperfoliata*. Yellow. June. Italy. 1823. Syn., *C. dubia*.
 — *perfoliata*. Yellow. June. Britain. Eng. Bot. ed. 3, t. 913. Syn., *Blackstonia perfoliata*.
 — *sessifolia*. 1. Yellow. November. South of Europe. 1832. Syn., *C. serotina*.

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 disinfecter, and for sprinkling about stable-floors, to fix the ammoniacal fumes.

Chloris. (From *chloris*, green. Nat. ord., *Gramineae*.)

Greenhouse, or hardy annuals. Seeds in May.

C. barba'ta. 1. Summer. India. 1777.

— *e'legans.* 1. Mexico.

— *radia'ta.* $\frac{1}{2}$. W. Indies. Summer. 1739.

Chloroco'don. (From *chloros*, green, and *kodon*, a bell; on account of its green somewhat bell-shaped flowers. Nat. ord., *Asclepiadaceæ*.)

Stove climber. The root is aromatic and is used by the Caffres as a stomachic; it is sold by them under the name of Mundi, or Mindi. Imported roots; cuttings of the ripened shoots might perhaps strike in sand, under a hand-glass and in bottom-heat. Summer temp., 60° to 85°; winter, 58° to 65°.

C. Whi'tei. Green, purple. Natal. 1869. B. M. t. 5898.

Chloro'galum. (From *chloros*, green, and *gala*, milk; referring to their green juice. Nat. ord., *Liliaceæ*; Tribe, *Asphodelceæ*. Allied to *Ornithogalum*.)

Hardy bulb. For cultivation, see ORNITHOGALUM.

C. divarica'tum. White, striped green. July. California. Syn., *Ornithogalum divaricatum*, B. R. 1842, t. 28. Straggling Star of Bethlehem.

— *Leichtli'nii.* See *Camassia esculenta*, var. *Leichtlinii*.

— *pomeridia'num.* 2. White. June. California. 1819. Syn., *Anthericum pomeridianum*. B. R. t. 564, and *Phalangium pomeridianum*. The Californian Soap plant, so called, from the saponaceous matter contained in the bulb.

Chloro'phora. (From *chloros*, green, and *phoreo*, to bear. Nat. ord., *Urticaceæ*; Tribe, *Moraceæ*.)

Stove evergreens. Cuttings of ripe wood.

C. tinctoria. 20. West Indies. 1739. Syn., *Maclura tinctoria*.

— *Plumie'ri.* 20. West Indies. 1804. Syn., *Maclura Plumieri*.

Chlorophy'tum. (From *chloros*, green, and *phyton*, a plant. Nat. ord., *Liliaceæ*; Tribe, *Asphodeleæ*. Allied to *Anthericum*.)

Greenhouse or stove evergreen perennials, of easy cultivation. Seeds, suckers, or divisions of the plant in spring. Rich sandy loam. Summer temp., 60° to 85°; winter, 55° to 60°.

C. arundina'ceum. White. Himalayas. 1876.

— *Bowke'ri.* 1. White. N.E. of Cape Colony. Ref. Bot. t. 352.

— *ela'tum.* 1. White. S. Africa. Ref. Bot. t. 216. Syn., *Anthericum elatum*, and *Phalangium elatum*.

— *arge'nteo-linea're.* 1876.

— *variega'tum.* White. Syn., *Anthericum variegatum*, Flor. Mag. n. s. t. 152.

— *inorna'tum.* Greenish. Sierra Leone. B. M. t. 1071.

— *Ki'rki'i.* 2. White, greenish outside. E. Tropical Africa. 1882.

— *la'zum.* $\frac{1}{2}$. Whitish. Guinea. 1578. Syn., *C. falcatum*, Ref. Bot. t. 338.

— *orchida'strum.* Tropical Africa. B. R. t. 813.

— *polyrhi'zon.* White. Zanzibar. 1878.

— *rhizomato'sum.* 1. White, with green lines on the back. Zanzibar. 1884.

Chlorospa'tha. (From *chloros*, green, and *spathe*, a spathe; green spathe. Nat. ord., *Araceæ*. Allied to *Xanthosoma*.)

Stove tuberous perennial. Seeds, divisions of the tuber, and offsets. Loam and peat, about half and half. Moist atmosphere—when growing give plenty of water; it requires a period of rest, but should not be allowed to go dust-dry. *C. Kol'bi.* Green. S. America. 1878. Gf. t. 988.

Chlorosple'nium *cerugino'sum.*
A fungus which stains the wood of *Magnolia* a verdigris green.

Chloro'xylon. (From *chloros*, greenish-yellow, and *xylon*, wood. Nat. ord., *Meliaceæ*; Tribe, *Cedreleæ*. 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. 50. White. E. Ind. 1820. Wight Ill. t. 566.

Chocolate Nut. *Theobro'ma.*

Chœne'stes lanceola'ta. B. M. t. 4338. See *Ioichroma lanceolata*.

Choi'sya. (Named after M. Choisy, a botanist of Geneva. Nat. ord., *Rutaceæ*.)

Greenhouse evergreens, hardy in the South of England. Cultivated like *Chloroxylon*.

C. grandifl'ora. White. Mexico. Gf. t. 876.

— *terna'ta.* 6. White. July. Mexico. 1825.

Chome'lia. (Named after Dr. Chomel, physician to Louis XV. Nat. ord., *Rubiaceæ*; Tribe, *Guettardeæ*. Allied to *Ixora*.)

Stove evergreen shrubs, cultivated like *Chloroxylon*.

C. fascicula'ta. 5. White. W. Ind. 1825.

— *spino'sa.* 12. White. W. Ind. 1798.

Chondrorhy'ncha. (From *chondros*, cartilage, and *rhy'nchos*, a beak; in allusion to the beak-like rostellum. Nat. ord., *Orchideæ*; Tribe, *Vandææ-Cyrtopodieæ*.)

Stove epiphyte. For cultivation, see LYCASTE, to which it is allied.

C. Chesterto'ni. Yellow. Columbia. 1879.

— *finbria'ta.* Pale sulphur, with brown spots at the base of the column and lip. New Grenada. 1868. Ref. Bot. t. 107. Syn., *Stenia finbriata*.

— *Lendya'na.* Pale yellow. G. C. vol. 26, p. 103.

Chonemo'rpha. (From *chone*, a funnel, and *morpha*, form; the flowers being funnel-form. Nat. ord., *Apocynaceæ*; Tribe, *Echitideæ*. Allied to *Rhynchospermum*.)

Stove evergreen shrub. 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. pube'scens. White. May. E. Ind. 1822.

Chore'tis. See *Hymenocallis*.

Chori'spora. (From *choris*, sepa-

rate, and *spora*, a seed; the seeds being divided from each other in the pods. Nat. ord., *Cruciferae*; Tribe, *Raphanææ*. Allied to *Cakile*.)

Hardy annuals. Only one worth notice. Seeds, sown at the end of March; common soil. *C. Greigi*. 1½. Purple. Turkestan. 1879. — *tene'lla*. ½. Purple. June. W. Himalayas. 1780. — *arcua'ta*. ½. Purple. June. Siberia.

Choroze'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., *Leguminosæ*; Tribe, *Podalyriææ*.)

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 a bell-glass; peat, three parts; fibry loam, one part; sand and charcoal, one-half part each.

C. angustifolium. Yellow, red. March. W. Australia. 1830. — *corda'tum*. 2. Red. April. W. Australia. Maund Bot. t. 89. Syns., *C. flavum* and *C. superbum*. There is also a variety *spé'ndens*, 1833. — *Dicks'ni*. 3. Scarlet, yellow. July. 1836. — *diversifolium*. 2. Orange, red. March. 1840. Syn., *C. spectabile*, B. R. 1841, t. 45. — *Henchma'nii*. 2. Scarlet. May. W. Australia. 1824. B. M. t. 3607. — *Huge'ii*. 2. Blue. May. — *ilicifolium*. 2. Yellow, red. August. W. Australia. 1803. Syns. *C. nana*, *C. triangulare*, and *Pultanea nana*, Andr. Rep. t. 434. — *Lawrencia'num*. 3. Orange. Spring. 1845. — *macrophyllum*. Red. April. — *mucrona'tum*. 3. Deep orange. Spring. 1845. — *nervosum*. W. Australia. 1852 — *platylobioides*. See *Mirabalia grandiflora*. — *rho'mbeum*. 2. Yellow. May. W. Australia. 1803. Syn., *C. ovatum*, B. R. t. 1528. — *rotundifolium*. 1881. — *scandens*. See *Oxylobium scandens*. — *spartioides*. B. C. t. 1953. See *Isotropis striata*. — *spectabile*. See *C. diversifolium*. — *va'rium*. 4. Orange, red. March. W. Australia. 1830. B. R. 1839, t. 49. — *grandiflorum*. 3. Orange. Spring. 1844.

Christmas Rose. *Hellebo'rus ni'ger*.

Christ's Thorn. *Pala'u'rus*.

Chrysa'nthemum. (From *chrysos*, gold, and *anthos*, a flower. Nat. ord., *Compositæ*; Tribe, *Anthemideæ*. See also *Pyrethrum*.)

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. absinthifolium. 1. White. Siberia. 1824. — *Ach'ilææ*. 1. White. July. Italy. 1775. — *anomalum*. 1. White. June. Spain. 1811. — *arcticum*. ½. White. July. Kamtschatka. 1801. Gf. t. 785. — *argenteum*. 1. White. July. Levant. 1731. — *atra'tum*. 1. White. July. Austria. 1731. — *loba'tum*. ¾. White. July. Switzerland. 1819. — *Broussonetii*. 3. Yellow. May. Canary Islands. 1858. Syn., *Ismelia Broussonetii*. B. M. t. 5067. — *carina'tum*. 2. White, purple. August. Barbary. 1796. Syns., *C. tricolor* and *Ismelia carinata*. Annual. — *catana'nehe*. ½. Pale yellow, blood-red. April. Greater Atlas. 1874. — *ce'res*. Flesh-coloured. February. Hybrid. 1884. — *cinerarafa'lium*. Dalmatia. B. M. t. 6781. — *coccineum*. Pink, yellow. September. Caucasus. Perennial. B. M. t. 1080. — *corona'rium*. 4. Yellow. August. Sicily. 1629. Annual. — *corymbosum*. 1883. — *Cullingfordii*. G. C. 1884, vol. 22, p. 751. — *daucifolium*. 1. White. July. 1820. — *Decaisnea'num*. 1½. Pale yellow. Japan. Syn., *Pyrethrum Decaisneanum*. — *denticula'tum*. Yellow. Summer. Syn., *Chrysosoma denticulata*. Jacq. H. Schœnb. t. 388. — *graminifolium*. 1. White. June. Montpellier. 1739. — *He'be*. Rosy-lliac. July. 1884. — *heterophyllum*. 1. White. July. Switzerland. 1806. — *indicum*. 2. Yellow. September. China. B. M. tt. 327, 2042. — *italicum*. 2. Pale yellow. June. Italy. 1796. — *lanco'la'tum*. ½. White. June. Hungary. 1817. — *leuca'nthemum*. 2. White. June. Britain. Eng. Bot. ed. 3, t. 714. — *marginata*. Dark yellow. Japan. Syn., *Pyrethrum marginatum*. — *Ma'vii*. White. Greater Atlas. 1872. — *meziaca'num*. 1. White. August. Mexico. 1825. — *montpelie'nse*. 1. White. July. Montpellier. 1739. — *monta'num*. 2. White. June. France. 1759. — *Myco'nis*. 1. Yellow. July. Italy. 1775. Annual. — *multica'le*. 1. Bright yellow. Algeria. Annual. — *paludo'sum*. 1½. White. June. Barbary. 1810. — *perpusi'llum*. 1. White. June. France. 1825. — *pinnatifidum*. 3. White. July. Madeira. 1777. Syn., *Ismelia maderensis*, Swt. Fl. Gard. t. 342. — *pu'milum*. ½. White. August. 1806. — *radica'ns*. 1. White. July. Spain. 1818. — *rotundifolium*. 1½. White. June. Hungary. 1817. — *rutheni'acum*. ½. Pink. June. Russia. 1827. — *se'getum*. 1½. Yellow. July. Britain. Eng. Bot. ed. 3, t. 713. Annual. — *Sibthorpii*. See *C. viscosum*. — *sine nse*. 3. Variegated. October. China. 1764. B. M. t. 2556. — *speciosum*. 1882. — *sybo'stre*. 2. White. June. 1804. — *tanacetifolium*. 1. White. Asia Minor. 1818

- C. Tchihatche'wii*. White. Central Asia. 1869.
— tri'color. Andr. Rep. t. 109. See *C. carinatum*.
— tripartitum. 3. Yellow. October. E. Ind.
 1800. Swt. Fl. Gard. t. 193.
— uliginosum. 14. White. August. Hungary.
 1816. Syn., *Pyrethrum uliginosum*.
— viscosum. 14. Yellow. S. Europe. Syn.,
C. Sibthorpii.

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.

By Layers.—To procure very dwarf plants, as soon as the frosts are fairly passed for the season, plant out in the open air a few old plants in a row, in an open situation. Peg down some of the branches, and, as soon as the flower-buds appear, plunge as many small pots round the plants, filled with light, rich earth, as may be required; place a branch into each pot, and give it a gentle twist; put a short, hooked peg into each pot, catching the branch with the hook; then cover it with half an inch of soil, and in a month it will be rooted. Then cut it off from the parent plant, take up the pots, and keep them in the shade till fairly established. They may then have another and final potting, and will be neat dwarf plants to place in front of the taller ones.

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 in February, 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.

Antho'coris (Limex) minutus attacks the flower-buds. Its body is blackish, and has a conspicuous black triangular patch in the middle of each wing-cover. (G. C. 1881, vol. xvi., p. 537.)

Antho'coris (Limex) nemorum is shining black, with pale yellowish wing-covers, spotted with black.

Phyto'coris campestris also attacks the flower-buds, and prevents them from expanding properly. The body is oval and rather depressed, that of the male is blackish, with a tinge of red or green; that of the female greenish buff.

Diseases.—These are such robust, hardy plants that they are seldom troubled with any diseases. The only one that is dangerous is *mildew*—*Oidium Chrysa'ntemi*—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. Brown's fumigator is an excellent one to apply the sulphur with.

Chryse'is. See *Eschscholtzia*.

C. cro'cea. B. M. t. 1948. See *Eschscholtzia californica*.

Chrysba'ctron. See *Bulbinella*.

Chrysiphi'ala. See *Stenomesson*.

Chrysiphia'la latifo'lia. See *Urceolina latifolia*.

Chrysoba'lanus. Cocoa Plum. (From *chrysos*, gold, and *balanos*, an acorn; in reference to the colour of the drupes, or berries. Nat. ord., *Rosaceæ*; Tribe, *Chrysobalanæ*.)

Layers; also cuttings of half-ripened shoots in sand, under glass. Loam and peat. Common greenhouse and cool stove treatment.

C. Ica'co. 15. White. W. Ind. 1752. Stove evergreen. G. C. 1871, p. 586.

—*oblongifo'lius.* 3. White. May. Georgia. 1812. Greenhouse evergreen.

Chrysoco'ma. Goldy-locks. (From *chrysos*, gold, and *kome*, hair; in reference to the yellow florets. Nat. ord., *Compositæ*; Tribe, *Asteraceæ*. Allied to *Conyza*.)

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. biflo'ra. See *Aster acris*.

C. dracunculoi'des. See *Aster acris*.

—*linosy'ris.* See *Aster linosyris*.

—*nuda'ta.* See *Bigelovia nudata*.

—*villo'sa.* See *Linosyris villosa*.

—*virga'ta.* See *Bigelovia virgata*.

GREENHOUSE EVERGREENS.

C. ce'rnu'a. 4. White. July. Cape of Good Hope. 1712. This and *C. patula* are probably forms of *C. coma-aurea*.

—*ci'lia'ta.* 4. White. August. Cape of Good Hope. 1759.

—*ci'ne're'a.* See *Ozothamnus cinereus*.

—*co'ma-au're'a.* 1½. Yellow. July. Cape of Good Hope. 1731. B. M. t. 1972.

—*de'nticu'la'ta.* Jacq. H. Schœnb. t. 368. See *Chrysanthemum denticulatum*.

—*ni'va.* 3. Yellow. July. Cape of Good Hope. 1816.

—*pa'tu'la.* 3. Yellow. July. Cape of Good Hope. 1810.

—*sca'bra.* See *Felicia reflexa*.

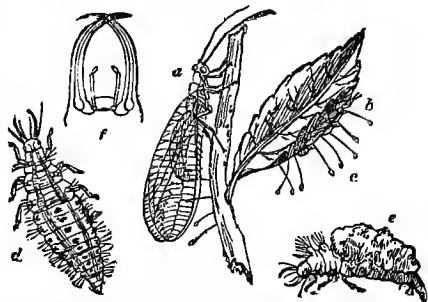
—*squa'ma'ta.* B. M. t. 3625. See *Leptorhynchus squamata*.

Chryso'gonum. (From *chrysos*, gold, and *gonu*, a joint; the golden flowers being borne on the joints. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. Allied to *Silphium*.)

Hardy herbaceous perennial. Dividing the roots in spring; loam, with a little peat and leaf-mould.

C. virginia'num. 1. Yellow. May. N. Amer.

Chryso'pa vulga'ris. The Lace-winged Fly, or Golden-eye, is one of the best insect friends the gardener has. The perfect insect (*a*) is a beautiful creature, about an inch in length; the body is of a bright pale green; the wings are reticulated with transverse hairy nervures—they are transparent



and beautifully iridescent; the eyes are fiery golden. The curious stalked eggs (*c*) are deposited upon the leaves and stems of various plants. The insect applies its ovipositor to the surface and exudes a sticky substance, which very rapidly hardens; it then draws its body away, the sticky matter forming a fine thread, which becomes the stalk of the egg; lastly, the egg is expelled, adhering to the apex of the stalk. As soon as the young larvæ (*b*) escape from the eggs, they commence feeding on the

Aphides that may infest the plant. The larvæ (*d*, magnified) are extremely voracious, destroying quantities of aphides and other soft-bodied insects, and will sometimes attack and kill caterpillars three or four times their own size; they are enabled to do this by means of the strong jaws with which they are provided (*f*, much magnified). As a means of protection or concealment they cover their bodies with bits of lichen or the skins of their victims (*e*, magnified). After feeding for a little more than two weeks, the larvæ spin a silken cocoon, which is often concealed by bits of lichen, etc.; in this they change to the pupa state, and the perfect fly emerges about three weeks afterwards. Our illustration was obtained from the "Gardeners' Chronicle."

Chrysophyllum. Star Apple. (From *chrysos*, gold, and *phyllon*, a leaf; referring to the colour of the under side of the leaves. Nat. ord., *Sapotaceæ*.)

The fruit of *C. Caimi* 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. angustifolium*. 20. White. W. Ind. 1819.
C. Caimi. 50. White. May. W. Ind. 1737.
 — *argenteum*. 20. White. Martinique. 1758. Jacq. Ic. t. 54.
 — *caeruleum*. 40. White. May. S. Amer. 1737. Jacq. Ic. t. 53.
 — *jamaicæ nse.* 40. White. May. Jamaica. 1737.
 — *microphyllum*. 30. White. May. S. Amer. 1800.
 — *glabrum*. 15. White. Martinique. 1823.
 — *imperiale*. Brazil. 1875. Syn., *Theophrasta imperialis*. B. M. t. 6823.
 — *macrophyllum*. See *Lucuma Ricivca*.
 — *monopyrenum*. Whitish. Leaves reddish beneath. March. W. Ind. 1812. Syn., *C. oliviforme*.

Chryso'psis. (From *chrysos*, gold, and *opsis*, a face. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*.)

A strong, coarse, hardy herbaceous perennial for a shrubbery, and will grow in any common soil; divisions in March.

- C. maria'na*. 1. July. N. America. 1742. Syn., *Inula mariana*.
 — *trichophylla*. Yellow. June. N. Amer. 1827.
 — *villosus*. 1. Yellow. August. Missouri. 1811. Syn., *Amellus villosus*.

Chrysorrh'o'e. See *Verticordia*.

Chryso'sple'nium. Golden Saxifrage. (From *chrysos*, 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., *Saxifragæ*.)

Hardy herbaceous perennials. Dividing the roots; moist situation; common soil.

- C. alternifolium*. $\frac{1}{2}$. Yellow. April. Britain. Eng. Bot. ed. 3, t. 564.

- C. nepal'ense*. 1. Yellow. April. Nepaul. 1820.
 — *oppositifolium*. Yellow. April. Britain. Eng. Bot. ed. 3, t. 563.

Chryso'ste'mma. See *Coreopsis*.

Chrysothe'mis. See *Tussacia*.

Chusque'a. (The native name. Nat. ord., *Gramineæ*; Tribe, *Bambuseæ*.)
 Stove ornamental grass.

- C. abietifolia*. Green, purple. December. Jamaica. B. M. t. 6811.

Chymocarpus. (The meaning of the name is juicy-fruited, in contradistinction to the hard, dry fruit of the *Nasturtium*. It is derived from *chymos*, juice, and *carpos*, a fruit. Nat. ord., *Geraniaceæ*; Tribe, *Pelargoniceæ*.)

Greenhouse perennial climber. Seeds in a slight hotbed; cuttings in sandy soil, under a hand-light, in summer. Sandy loam, with a little peat.

- C. pentaphyllum*. 4. Red, green. August. Buenos Ayres. 1830. Swt. Fl. Gard. t. 245. Syn., *Tropaeolum pentaphyllum*.

Chy'sis. (From *chysis*, melting; in reference to the fused appearance of the pollen masses. Nat. ord., *Orchideæ*; Tribe, *Epidendrææ*—*Bleticeæ*.)

Stove orchids. Offsets; baskets filled with fibry peat and potsherds, and kept in a cool moist stove.

- C. aurea*. 1. Yellow and crimson. May. Venezuela. 1834. B. R. t. 1937.
 — *Limmi'nghei*. Ill. Hort. 1860, t. 240.
 — *maculata*. Yellow, with darker tips; lip spotted with purple. 1850. B. M. t. 4576.

- *bracte'ens*. 1. White, yellow. May. Guatemala. 1840. B. R. 1841, t. 23.

- *la'vis*. Cream, yellow. Guatemala. Bate. Orch. t. 81.

C. Chelso'ni and *C. Sede'ni* are garden hybrids.

Chytroglo'ssa. (From *chytros*, a well, and *glossa*, a tongue; in the hollow at the base of the lip. Nat. ord., *Orchideæ*; Tribe, *Vandææ-Oncideæ*. Allied to *Ionopsis*.)

Stove epiphytes; should be grown on blocks of cork. For cultivation, see ORCHIDS.

- C. aurata*. Green, yellow, purple. Brazil. 1865. Rehb. Xen. t. 148.
 — *Mariole'nia*. Yellow, blood-red. Brazil. 1865.

Cibo'tium. (From *kibotion*, a small box; referring to the form of the seed-vessels. Nat. ord., *Filices*. This has been regarded by some as a section of *Dicksonia*, from which, however, it differs in having the outer of the two involucre valves of a coriaceous texture differing from that of the frond.)

Division of the roots; peat and loam; a warm greenhouse, or cool stove.

- C. assa'micum*. Assam. 1866.
 — *Ba'rometz*. 6. Brown, yellow. May. China. 1824. Stove. Syns., *Dicksonia Barometz*,

Hook. Sp. Fil. I. t. 29A, *C. glaucescens* and *C. glaucum* of Beddome.

- C. Billiardieri*. See *Dicksonia antarctica*.
 — *Chamissoi*. Sandwich Islands. 1876.
 — *glaucum*. Sandwich Islands. 1879.
 — *Menziesii*. Sandwich Islands. 1875.
 — *priiceps*. See *Cyathia insignis*.
 — *pruinatum*. Sandwich Islands. 1878.
 — *regale*. Mexico. 1864.
 — *Schieberi*. 10-15. Mexico. 1846.
 — *spectabile*. Mexico. 1868.

Ciboul, or **Welsh Onion**. (*Allium fistulosum*.) A perennial, never forming any bulb, but sown annually, to be drawn young for salads, etc. 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 leaves die 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.

Cicca. See **Phyllanthus**.

Cicely. *Chaerophyllum*.

Cicendia. (Derivation doubtful. Nat. ord., *Gentianeae*.)

Hardy annual.

C. pulchella. $\frac{1}{2}$. Pink. August. New Jersey. 1826. Syn., *Evacuum pulchellum*.

Cichorium. Chicory, or Succory. (An ancient Egyptian name. Nat. ord., *Compositae*; Tribe, *Cichoraceae*.)

Hardy salad-plants, of easy culture; seed at different times. See **CHICORY** and **ENDIVE**.

C. endivia. 2. Blue. July. E. Ind. 1548. Annual.

— *intybus*. 2. Blue. July. Britain. Perennial. Wild Chicory. Eng. Bot. ed. 3. t. 786.

Cienko'wskia. (Named after Professor Ciencowsky, a Russian botanist. Nat. ord., *Scitamineae*; Tribe, *Zingiberaceae*. United to **Kampferia** in the Genera Plantarum.)

A handsome dwarf, stove perennial herb; requiring the same treatment as **KEMPFERIA**.
C. Kirilii. $\frac{1}{2}$. Mauve. Zanzibar. 1872. B. M. t. 5994.

Cimicifuga. Bugwort. (From *cimeæ*, a bug, and *fugo*, to drive away; from its supposed quality. Nat. ord., *Ranunculaceae*; Tribe, *Helleboreae*, Allied to *Actæa*.)

Good old hardy herbaceous plants for borders; seeds, and division of the roots in spring or autumn; common soil.

C. americana. 2. White, yellow. July. Carolina. 1824.

— *cordifolia*. 3. White, yellow. June. N. Amer. 1812. B. M. t. 2069.

— *dahurica*. 2. White. June. China.

— *foetida*. 4. Light yellow. June. Siberia.

1777. Syn., *Actæa Cimicifuga*.

— *japonica*. White. Japan. 1879.

— *palmeta*. 4. White, yellow. July. N. Amer.

1812. B. M. t. 1630.

— *racemosa*. 4. White. July. N. America.

1732. G. C. 1878, x. p. 557.

Cincho'na. Peruvian Bark. (Named after the Countess of Cinchon, who was cured by this Peruvian Bark. Nat. ord., *Rubiaceae*; Tribe, *Cinchoneae*.)

The Peruvian bark stands foremost as a febrifuge tonic. Stove evergreens; cuttings of ripe wood in sand, under a bell-glass, in heat; loam and fibry peat, with a little sand and charcoal. Summer temp., 60° to 85°; winter, 55° to 60°.

C. calisaya. 20. Pink. September. Peru. 1848.

Bent. and Tr. t. 141.

— *Josephia*. White. Bolivia. 1873. B. M. t. 6052.

— *Ledgeriana*. Pink. S. America.

— *Condaminæa*. Pink. Peru.

— *cordifolia*. Pink. N. Grenada.

— *lanceolata*. See *C. officinalis*.

— *microphylla*. Pink. Peru.

— *nitida*. Peru.

— *officinalis*. 18. Red. July. Peru. 1810.

Bent. and Tr. t. 140. Syn., *C. lanceolata*.

— *scabra*. 6. Red. 1820.

— *succirubra*. 20-40. Pink. July. Ecuador.

Cincina'lis. (Derivation not discerned. Nat. ord., *Filices*—*Polypodiaceae*.)

Stove ferns allied to **NOTHOCHLÆNA**, from which it differs in having the fronds coated beneath with a white or yellow powder. See **FERNs**.

C. flavens. Tropical America. Syn., *Nothochlæna flavens*.

— *nivea*. $\frac{1}{2}$. White. Indies, Mexico to Peru. Syn., *Nothochlæna nivea*.

— *tenera*. $\frac{1}{2}$. Mendoza. Syn., *Nothochlæna tenera*.

Cinera'ria. (From *cineres*, ashes; in reference to the grey down covering the surfaces of the leaves. Nat. ord., *Compositae*.)

Hardy herbaceous species by seed, but chiefly by division of the roots; good, loamy soil, and a little peat or 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. Aitoniana*. 1. Yellow. July.
— americana. 6. Yellow. Grenada. 1825.
— discolor. 4. White. July. Jamaica. 1804.
 B. M. t. 2647.
— glabra. 2. Yellow. July. Jamaica. 1822.
— lucida. 2. Yellow. July. W. Ind.

GREENHOUSE EVERGREENS.

- C. d'Alba*. 1. White. February. Cape of Good Hope. 1825.
— angustifolia. 2. Yellow. July. Mexico. 1825.
— aurita. B. M. t. 1736. See *C. lanata*.
— bicolor. 2. Yellow. July. Austria.
— cacathoides. 2. Yellow. July. Cape of Good Hope. 1816.
— canescens. 2. Yellow. June. Cape of Good Hope. 1790.
— cancaesica. 2. Yellow. July. Cape of Good Hope. 1759. Herbaceous.
— elatior. 5. White. July.
— geifolia. 2. Yellow. July. Cape of Good Hope. 1710.
— cruenata. 2-4. Reddish-purple.
— gibbosa. Sicily.
— humifera. 1. Yellow. July. Cape of Good Hope. 1754. Herbaceous.
— hybrida. 2. Yellow. February.
— incana. 3. Yellow. July. Jamaica. 1823.
— lactea. 3. White. June. 1816.
— lanata. 3. Purple. June. Canaries. 1780.
 B. M. t. 53. Syn., *C. aurita*.
— lobata. 3. Yellow. July. Cape of Good Hope. 1774.
— malvaefolia. 2. Yellow. August. Azores. 1777. Herbaceous.
— multiflora. 2. White. July. Teneriffe. 1829.
— Petasites. 3. Yellow. February. Mexico. 1812. B. M. t. 1536.
— populifolia. 2. Red. July. Canaries. 1780.
— procox. 2. Yellow. February. Mexico. 1824.
— pulchella. 2. Purple. February. Canaries. 1818.
— salicifolia. 4. Yellow. July. Mexico. 1827.
— scapiflora. 1. Yellow. July. Cape of Good Hope. 1829.
— Tussildginia. 2. Lilac. Autumn. Teneriffe. 1829. B. M. t. 3215.
— vestita. $\frac{1}{2}$. Yellow. Cape of Good Hope. 1824.
— viscosa. 2. Yellow. July. Cape of Good Hope. 1774. Biennial.
— Waterhousiana. Garden hybrid. Paxt. Mag. 4, p. 219.
— Webberiana. Blue. 1841. Garden hybrid. Paxt. Mag. 9, p. 125.
— Webbia. Magenta, grey. February. Canaries. 1880.

HARDY HERBACEOUS PERENNIALS.

- C. alpestris*. 1. See *Senecio alpestris*.
— alpina. See *Senecio alpestris*.
— amelloides. B. M. t. 249. See *Aster capensis*.
— aurantiaca. B. M. t. 2282. See *Senecio aurantiaca*.
— aurea. See *Senecio auratus*.
— auriculata. See *Senecio racemosa*.
— canadensis. See *Senecio Cineraria*.
— campestris. See *Senecio campestris*.
— crassifolia. See *Senecio alpestris*.
— crispata. See *Senecio crispata*.
— cruenata. B. M. t. 406. See *Doronicum cruentum*.
— flammula. See *Senecio flammula*.
— gigantea. See *Senecio Smithii*.
— integrifolia. See *Senecio campestris*.
— laevigata. 1. Yellow. July. Siberia. 1819.
— linifolia. See *Aster linifolius*.

- C. longifolia*. See *Senecio brachychaeta*.
— macrophylla. See *Senecio macrophylla*.
— maritima. See *Senecio Cineraria*.
— palustris. See *Senecio palustris*.
— papposa. See *Senecio papposa*.
— parviflora. B. M. t. 1990. See *Senecio canescens*.
— racemosa. See *Senecio racemosa*.
— renifolia. See *Senecio renifolia*.
— rivularis. See *Senecio crispata*.
— sibirica. B. M. t. 1869. See *Senecio cacaliiformis*.
— spatulifolia. See *Doria alata*.
— speciosa. B. R. t. 812. See *Senecio speciosa*.
— sudetica. See *Senecio crispata*.
— thyrsoides. See *Senecio siberica*.

Cineraria as a Florist's Flower.—

The numerous varieties of this flower seem to be the offspring, by various crosses, of *C. cruenata*, *populifolia*, 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.

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; fibrous peat, one part; 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 it round 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. Keep them in the cold frame, or pit, through the winter; only take care to cover them up securely every night, and day also, if the frost is severe. It will be necessary to pack round the sides and ends of the frame or pit with either short litter or dry fern, of sufficient thickness to keep out the severest frost. During this severe weather, it will sometimes be necessary to keep the covering on the glass all the day. It has occurred that the cover has been kept on for a fortnight without any injury; but on all fine days take off the coverings, and give abundance of air; 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; and, for some kinds, it will be necessary to use sticks, to open out the heads of bloom, and show them to the best advantage, especially for those intended for exhibition; but all sticks should be removed a day or two before the show, as they are no addition to the beauty of these plants.

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, like all other highly-cultivated soft-wooded plants, are subject to go off at the neck 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. (A name compounded from *Cinnamomum*, and *endron*, a tree; resembling a cinnamon-tree. Nat. ord., *Canellaceæ*.)

Stove tree. The bark is employed as an aromatic stimulant to purgatives and tonics, and is sometimes confounded with the Winter's bark. For cultivation, see *CANELLA*, to which it is allied. *C. corticosum*. 50. Red. W. Indies. 1860. B. M. t. 6120.

Cinnamo'mum. Cinnamon. (From the Arabic name, *kinamon*. Nat. ord., *Lauraceæ*; Tribe, *Perseaceæ*. Syn., *Camphora*.)

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.

C. Burma'ni. 40. White, yellow. China, Sumatra. 1820. Syn., *C. dulce*, Wight Ic. t. 138.

—*Campho'ra*. 30. Greenish-white. June. Japan. 1727. Syn., *Camphora officinarum*. Bent. and Tr. t. 222.

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 *Cinnamomum Campho'ra*, 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 *Dryobalanops aromatica*. *C. ca'ssia*. 50. Yellow, green. June. Ceylon. 1763.

—*cutila'van*. 20. Yellow, green. Ind. Archipelago. 1823.

- C. glaucum*. 20. Pale yellow. Japan. 1800.
gracile. 20. Yellow, green. E. Ind. 1820.
iners. 20. Yellow, green. E. Ind. 1805.
 Syn., *C. malabattrum*.
montana. See *Persea montana*.
nitidum. 20. White. E. Ind. 1823. Wight
 Ic. t. 137.
sericeum. Japan. 1875.
talma'la. Pale green. Himalayas.
verum. 40. Green. July. E. Ind. 1768.
zeylanicum. Greenish. May. E. Indies.
 Syns., *Laurus cassia*, B. M. t. 1636, and
L. cinnamomum.

Cinquefoil. *Potentilla*.

Cion. See Scion.

Cionidium. A synonym of *Trichiocarpa*.

Cipura. (Derivation unexplained. Nat. ord., *Iridaceæ*; Tribe, *Sisyrinchieæ*. Allied to *Romulea*.)

- Greenhouse bulbs. Seeds in a slight hothed in spring; offsets. Sandy loam and leaf-mould.
C. martinicensis. See *Trimezia lurida*.
paludosa. 1. White. July. Guiana. 1792.
 Syn., *Marica paludosa*, B. M. t. 646.

Circæa. Enchanters' Nightshade. (A classical name, after *Circe*, a celebrated enchantress, skilled in poisonous herbs. Nat. ord., *Onagraceæ*. Allied to *Lopezia*.)

Hardy perennials. Offsets and divisions. Common garden-soil.

- C. alpina*. 1. Red. July. Britain. Eng. Bot. ed. 3, t. 512.
intermedia. 1. Red. July. Europe. 1821.
 This is doubtless to be regarded as a variety of *C. alpina*.
lutetiana. 1. Red. July. Britain. Eng. Bot. ed. 3, t. 511.

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**.

Cirrhæa. (From *cirrhus*, a tendril; the rostellum being extended like a small tendril. Nat. ord., *Orchideæ*; Tribe, *Vandææ*.)

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. albo-viridis*. White, green. May. Brazil. 1838.
atro-purpurea. Dark purple. April. Mexico. 1838.
bracteata. White, yellow. July. Brazil.
fulco-lutea of B. M. t. 3726 is *C. saccata*. The true *C. fusco-lutea* is not in cultivation.
lavis. Yellow, brown. July. Brazil.
Lodigei sili. Yellow, red. May. Brazil. 1827. B. R. t. 1538.
obtusata. 3. Yellow, red. September. Rio Janeiro. 1835. B. R. t. 2005.
paluda. Yellowish. August. Brazil. 1837.
picta. Purple. May. Brazil. 1830.
rubra-purpurea. Red, purple. May. Brazil. 1838.
Russelliana. Green, red. May. Brazil. 1837.
saccata. 1. Dull yellowish-green. June. Brazil. 1830. Syn., *C. fusco-lutea* of B. M. t. 3726.
squulenta. May. Brazil. 1836.
tristis. 3. Dull purple, red. June. Mexico. 1834. B. R. t. 1889.
viridi-purpurea. 3. Purple, green. June. Brazil. B. C. t. 1967. Syns., *C. dependens*, *Cymbidium dependens*, B. C. t. 936, and *Gongora viridi-purpurea*.
 — *Fryana*. 3. Green, purple-spotted. July.
Warreana. 3. Yellow, red, purple. June. Brazil. B. C. t. 1999.

Cirrhoptalum. (From *cirrhus*, a tendril, and *petalon*, a flower-leaf; in reference to the strap-shaped petals. Nat. ord., *Orchideæ*. Syn., *Ephippium*.)

Stove orchids. On blocks of wood. Growing temp., 75° to 85°, and very moist air; rest temp., 60°.

- C. abbreviatum*. White, purple. 1881.
antenniferum. Brown. Philippines. 1843.
auratum. 3. Yellow, crimson. March. Manilla. 1840.
Blumei. August. Java. 1843.
cæpitosum. Pale yellow. April. Khasia. 1837.
candelastrum. Straw, pink, purple. July. Manilla. 1840.
capitata. Java. 1843.
chinense. 3. Purple, yellow. China. 1840. B. R. 1843, t. 49.
compressum. Java. 1843.
cornutum. 3. Purple. August. Khasia. 1837. B. M. t. 4753.
Cumi'ngii. Ruby. May. Philippines. 1839. B. M. t. 4996.
deliteans. Purple. July. Hong-Kong. 1882.
elongatum. May. Java. 1843.
umbria. 3. Green, purple. April. Bombay. 1838. B. M. t. 4391.
Lendya. Whitish or greenish-yellow. Syn., *Bulbophyllum Lendyanum*.
Macraei. Brown, yellow. April. Ceylon. 1839. B. M. t. 4422.
maculatum. Pale green. May. India. 1841.
maculosum. Green, purple. E. Ind. 1841.

- C. Makoya* num. Yellow, brown. Minas Geræes? 1879.
- *Mastersia* num. Deep yellow, brown. Dutch Indies. Lind. t. 255.
- *maxilla* re. Philippines. 1843.
- *Medusa* is *Bulbophyllum Medusæ*
- *nutans*. †. Pale straw. May. Manilla. 1838. B. M. t. 4418.
- *ornatissimum*. Yellowish-green, dotted purple. Sikkim. 1832. Warn. Orch. Alb. t. 363.
- *Pahu* dii. Reddish-brown. Java. 1866. Syn., *Bulbophyllum Pahu* dii and *C. flagelliforme*.
- *picturatum*. Purple, red. March. Moulmein. 1833. B. M. t. 6802.
- *pu* lchrum. Purple, with darker spots, yellow. Halmahera. 1886. Ill. Hort. t. 608.
- *Roxbu* rghii. Yellow. May. E. Ind. 1843.
- *strangula* rium. Purple, yellow. Syn., *Bulbophyllum strangularium*.
- *Thoua* rsi. †. Yellow. July. Society Islands. B. M. t. 7214.
- *trigono* psis. 1881.
- *tripu* dians. Brown, purplish, whitish. Burmah. 1876.
- *umbella* tum. Green, brown. April. Indies. 1833. Syn., *Bulbophyllum umbellatum*, B. R. 1844, t. 44.
- *vagina* tum. Pale yellow. Singapore. 1843.
- *Walli* chii. Brown. March. Nepal. 1837.

Cir'sium. See Cnicus.

- C. ac* a' rnum. See *Pinenon acarna*.
- *heteroma* llum. See *Saussurea candicans*.
- *pinnati* fidum. See *Serratula pinnatifida*.
- *tubero* sum. See *Liatris spicata*.

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., *Menispermaceæ*; Tribe, *Cissampelideæ*).

- Stove twiners. The species from South Africa will do in a warm greenhouse; cuttings of small side-shoots, rather firm, in sand, under a bell-glass, and in bottom-heat; loam and peat. Summer temp., 60° to 80°; winter, 45° to 55°.
- *caape* ba. 4. Green. July. S. Amer. 1783.
- *cape* nsis. 6. Green. Cape of Good Hope. 1775.
- *hirsu* ta. 6. Yellow, green. Nepal. 1819.
- *mauriti* a na. 6. Yellow, green. Mauritius. 1824.
- *microca* rpa. 6. Yellow, green. W. Ind. 1823.
- *Pare* tra. 6. Green. July. India. 1733. Bent. and Tr. t. 15. Syn., *C. convolvulacea*.

Cissus. (From *kissos*, ivy; in reference to their scrambling habit. Nat. ord., *Ampelideæ*.)

A genus of stove and greenhouse climbers, having, with the exception of *C. discolor*, no great pretensions to beauty. We introduce it in order to remark, that with the exception of the grape-vine, the plants of this order are singularly deficient in use or beauty. The species require the same treatment as *Cissampelos*.

- *C. a* cida. Yellowish-green. Summer. W. Ind. Jacq. H. Schœnb. t. 33.
- *Baudina* na. Green. New S. Wales. 1790. Syns., *C. antarctica*, B. M. t. 2483, and *C. glandulosa*. Kangura Vine.
- *Davidia* na. See *Ampelopsis heterophylla*.
- *dis* color. Greenish. September. Java. B. M. t. 4763.
- *inci* sa. United States.
- — — *Rochea* na. Fruit more globose than in

the type. Central Africa. Rev. Hort. 1884, p. 272.

- *C. Linde* ni. Leaves green, spotted white. Columbia. 1869. Ill. Hort. 1870, t. 2.
- *mezi* ca' na. Leaves like those of the Grape-vine. 1891.
- *orienta* lis. See *Ampelopsis orientalis*.
- *Pau* li-Guillie' lmi. Ref. Bot. t. 27 is probably a species of *Ipomœa*.
- *porphyro* phy llus. Rev. Hort. 1833, p. 561.
- *quinque* fo' lia. See *Parthenocissus quinquefolia*.
- *ro* sea. Rose. Himalayas.
- *rotundi* fo' lia. Arabia. 1834.
- *tubercula* ta. Scarlet. August. Cuba. Jacq. H. Schœnb. t. 32.
- *Ve* i' tohi. Greenish. 1877.
- *velu* ti' na. Coral-red. Malay Islands? B. M. t. 5207.
- *viticif* o' lia pinnati' fida. See *Ampelopsis serjantiaefolia*.

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.

Cistus. Rock Rose. (From *kiste*, a box; in reference to the form of the seed-vessel. Nat. ord., *Cistineæ*.)

- C. ladanif* erus and *C. Le* don produce gum laudanum. 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. acuti* fo' lius. 1. White. August. South of Europe. Swt. Cist. t. 78.
- *a* l' bidus. 2. Pale purple. June. Spain. 1640. Swt. Cist. t. 31.
- — — *inc* a' nus. 2. Purple. July. South of Europe. 1596. Swt. Cist. t. 44.
- *asperi* fo' lius. Swt. Cist. t. 37. See *C. longifolius*.
- *candid* i' ssimus. 4. Pale red. June. Canaries. 1817. Syn., *Rhodocistus Bertholletianus*.
- *cane* scens. Swt. Cist. t. 45. See *C. villosus*.
- *Chi* sti. 3. White. June. Spain. 1810. Swt. Cist. t. 32.
- *complic* a' tus. See *C. parviflorus*.
- *corbari* e' nsis. 2. White. June. Spain. 1656. Swt. Cist. t. 8.
- *cordi* fo' lius. 4. White. June. 1800.
- *cre* ticus. 2. Purple. July. Levant. 1731. Jacq. Ic. t. 95.
- — — *tau* ricus. 2. Purple. June. Tanria. 1817.
- *cri* spus. 2. Purple. June. Portugal. 1656. Swt. Cist. t. 70.
- *cupania* nus. See *C. villosus*.
- *cymo* sus. 2. Purple. May. Swt. Cist. t. 90. Syn., *C. incanus*, Hort. Cels.
- *cy* prius. 4. June. White. Cyprus. 1800. Swt. Cist. t. 39. Syn., *C. stenophyllus*.
- *Dunali* nus. 2. Purple. May.
- *flore* nti' nus. Swt. Cist. t. 59. See *C. longifolius*.
- *hetero* phy llus. 2. Purple. June. Algiers. Swt. Cist. t. 6.
- *hirsu* tus. 2. White. June. Portugal. 1656. Swt. Cist. t. 19. Syn., *C. laxus*.
- *ladanif* erus. 4. White. June. Spain. 1629. Bog-cistus. Swt. Cist. t. 34.
- — — *albifo* nus. 4. White. June. Spain. Gum-cistus.
- — — *macula* tus. 4. White and purple. June. Spain. 1700. Swt. Cist. t. 1.

- C. latifolius*. 4. White. June Barbary. Swt. Cist. t. 19.
 — *laurifolius*. 4. White. June. Spain. 1781. Swt. Cist. t. 52.
 — — *maculatus*. White and purple.
 — *laevis*. Swt. Cist. t. 12. See *C. hirsutus*.
 — *Le don*. 1. White. June. France. 1730.
 — *longifolius*. 4. White. June. South of Europe. 1800. Syn., *C. asperifolius* and *florentinus*.
 — *lusitanicus*. 3. Yellow. July. Portugal. 1830. A hybrid.
 — *montspeliensis*. 2. White. June. South of Europe. 1656. Swt. Cist. t. 27.
 — *oblongifolius*. 3. White. June. South of Europe. Swt. Cist. t. 67.
 — *obtusifolius*. 3. White. June. Swt. Cist. t. 42.
 — *parviflorus*. 3. Pale red. June. Crete. 1800. Swt. Cist. t. 14. Syn., *C. complacatus*.
 — *platysepalus*. 4. Red. June. Swt. Cist. t. 47.
 — *populifolius*. 3. White. May Spain. 1656. Swt. Cist. t. 23.
 — *psilosepalus*. 3. White. June. Swt. Cist. t. 33.
 — *purpureus*. 2. Purple. June. Oriental. Syn., *Alabastrum magnum*, B. R. t. 408.
 — *rotundifolius*. Swt. Cist. t. 75. A variety of *C. villosus*.
 — *salvifolius*. 2. White. June. South of Europe. 1548. Swt. Cist. t. 54. Syn., *C. cymosus*.
 — — *erectus scubus*. 2. White. June.
 — — *ochroleucus*. 2. Yellowish. June.
 — *sericeus*. 2. Red. June. Spain. 1826.
 — *stenophyllus*. See *C. cyprinus*.
 — *tauricus*. See *C. creticus*, var. *tauricus*.
 — *undulatus*. Swt. Cist. t. 63. See *C. villosus*.
 — *vaginatus*. 2. Pale purple. April. Tenerife. 1779. Jacq. H. Schœnb. t. 282.
 — *varius*. 2. White, purple. June. S. Europe.
 — *villosus*. 3. Purple. June. South of Europe. 1640. Swt. Cist. t. 35. Syns., *C. canescens*, *cupaniamus*, and *undulatus*.
 — — *rotundifolius*. 2. Purple. June. South of Europe. 1640. Syn., *C. rotundifolius*.
 — *vulgaris*. Purplish. June. South of Europe. Syn., *C. canescens*.

Citharexylum. Fiddle-wood. (From *kithara*, a lyre, and *xylon*, wood; in reference to the wood being fit for musical instruments. Nat. ord., *Verbenaceæ*; Tribe, *Verbenæ*.)

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. caudatum*. 20. White. Jamaica. 1763. Syn., *C. erectum*, Jacq. Ic. t. 501.
 — *cyanocarpum*. 20. Chili and Peru.
 — *dentalium*. 15. E. Ind. 1824.
 — *molle*. Pale yellow. Guayaquil. Jacq. H. Schœnb. t. 417.
 — *pentandrum*. Portorico.
 — *quadragulare*. 20. White. West Indies. Jacq. Vind. t. 22. Syn., *C. coriaceum*.
 — *sericeum*. 15. E. Ind. 1824.
 — *subserratum*. 15. White. W. Ind. 1820.
 — *villosum*. 10. St. Domingo. 1784. Jacq. Ic. t. 118.

Citriobatus. (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., *Pittosporaceæ*.)

Greenhouse evergreens, from Australia; cuttings in sand, under a bell-glass; sandy, turfy peat, and a little loam and charcoal.

- C. multiflorus*. Many-flowered. 3. November. Queensland and New South Wales. 1818.
 — *pauciflorus*. Few-flowered. North Australia and Queensland. 1822.

Citron. *Citrus medica*.

Citrullus. (From *Citrus*, the fruits being orange-like. Nat. ord., *Cucurbitaceæ*.)

Stove herbs.

- C. Colocynthis*. Pale yellow. Fruit green and white. India. Bent. and Tr. t. 114. Syn., *Cucumis Colocynthis*. Bitter apple.
 — *vulgaris*. Yellow. India. Syns., *Cucumis* and *Cucurbita Citrullus*. Water melon.

Citrus. Orange-tree. (Derivation of doubtful origin; supposed to refer to *Citron*, a town in Judæa. Nat. ord., *Rutaceæ*; Tribe, *Aurantieæ*.)

Greenhouse evergreen trees.

- C. angulata*. White. E. Ind.
 — *Aurantium*. 15. White. Asia. 1595. The Orange. Bent. and Tr. t. 51.
 — *australis*. 25. Queensland. 1830. Syn., *Limonia australis*.
 — *buzifolia*. 3. White. June. China.
 — *decumada*. 15. White. June. India. 1724. Shaddock.
 — *deliciosa*. White. April. China.
 — *hystrix*. 15. White. June. E. Ind.
 — *japonica*. 6. White. June. Japan. B. M. t. 6128.
 — *Lime'ta*. 8. White. June. Asia. 1648. Lime Bergamot.
 — *Limonum*. 15. White. June. Asia. 1648. The Lemon. Bent. and Tr. t. 54.
 — *madurensis*. 10. White. June. China.
 — *margari'ta*. 15. White. June. China. Sweet Lemon.
 — *medica*. 8. White. June. Asia. Citron.
 — *a'cida*. Whitish. West Indies. B. M. t. 6745.
 — — *odoratissima*. Andr. Rep. t. 609.
 — — *River'sii*. White. St. Michael's, Azores. River's Bijou Lemon. B. M. t. 6807.
 — *no'bilis*. 15. White. June. China. 1805. Mandarin. Orange. Andr. Rep. t. 608.
 — — *Dav'dat*. Hamb. Gart. 1889, p. 419.
 — — *mi'nor*. 15. White. June. China. 1805.
 — *spinosissima*. 15. White. June. Cayenne.
 — *trifoliata*. 4. White. May. Japan. 1869. Syns., *C. triptera* and *C. californica* of gardens. Hardy.
 — *vulgaris*. 15. White. June. Asia. Seville Orange. Syn., *C. Aurantium* of B. R. t. 346.
 — — *myrtifolia*. 3. White. June. Asia.

Common Orange (*C. Aurantium*).— 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 ripier 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-mannre 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, etc.—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*; Tribe, *Anthemideæ*. Allied to *Anthemis*.)

The annual from seeds, in April; the evergreen from cuttings, under a glass; common soil.

C. canescens. 1. Yellow. June. Canaries. 1829. Greenhouse evergreen.
— *prolifera*. 2. Yellow. July. Bombay. 1759. Hardy annual. Syns., *C. arabicus* and *Anthemis arabica*.

Cladra'stis. (Derivation obscure. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ*. Allied to *Sophora*.)

Hardy deciduous trees, with terminal panicles of white flowers. Propagation by grafts, or budding, or by layers in spring and autumn.

C. amurensis. 6. White. Amur. 1880. Syn., *Maackia amurensis*. B. M. t. 6551.
— *tinctoria*. 15. White. July. N. America. 1812. Syns., *C. lutea* and *Virgilia lutea*. The Yellow-Wood.

Clande'stina rectiflora. See *Lathræa clandestina*.

Clarkia. (Named after Captain Clark. Nat. ord., *Onagraceæ*.)

Hardy annuals. Seeds in flower 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.

C. elegans. 2. Rose, purple. July. California. 1832. B. M. t. 3592. B. R. t. 1575.
— *fl're-pléno*. 1½. Pale rose. September. Gardens. 1827.
— *rhomboidæa*. See *C. rhomboides*.
— *gauroides*. Swt. Fl. Gard. II. t. 379. See *C. rhomboides*.
— *pulchella*. 2. June. N. Amer. 1826. B. M. t. 2918. B. R. t. 1100.
— *bicolor*. Rose.
— *fl're-a'ibo*. 2. White. June. N. Amer. 1826.
— *fl're-pléno*. Rev. Hort. 1864, t. 151.
— *marginata*. Rose edged with white. III. Hort. 1858, t. 159. There is also a variety *integriflora*.
— *rhomboides*. Pink. June. N. America. 1823. Syns., *C. elegans*, var. *rhomboidæa* and *C. gauroides*.

Clary. (*Salvia sclarea*.) 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'nia. (Derivation not explained. Nat. ord., *Rutaceæ*; Tribe, *Auranticeæ*.)

Stove evergreen. The fruit of *C. wampi* is highly esteemed in China and the Indian Archipelago. Cuttings of ripe shoots in sand, under a glass, in heat. Loam and peat.

C. corymbiflora. White. Loyalty Islands. 1878. Fruit eatable.

— *pentaphylla*. 20. White. July. Coromandel. 1800.

— *wampi*. 15. White. China. 1795. Syn., *Cookia punctata*. Wampee Tree.

Claviceps purpurea, a fungus attacking Rye. See **Ergot**.

Clavija. (Named after *Clavija*, a Spanish naturalist. Nat. ord., *Myrsinaceæ*. Synonym, *Theophrasta*.)

Stove evergreen trees. Cuttings of half-ripe shoots in sandy loam, with sand above, under a bell-glass, and in bottom-heat; peat and loam.
C. cauliflora. Antioquia. Syn., *Theophrasta antioquiensis*.

— *Ernstii*. 5. Apricot-yellow. Caraccas. B. M. t. 6226.

— *fulgens*. Orange-red. Peru. 1867. B. M. t. 5626.

— *macrocarpa*. 20. White. Peru. 1816.

— *ornata*. 12. Orange. Caraccas. 1823. B. M. t. 4922.

— *Riedelia*na. Orange. July. Brazil. Gf. t. 663. Syn., *C. macrophylla* of some gardens and of B. M. t. 5829.

— *Rodekia*na. Orange. Columbia. 1875. III. Hort. n. s. t. 188.

— *umbrosa*. Brazil. 1869. Gf. t. 609. Syn., *Theophrasta umbrosa*.

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 soil. 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., *Portulacaceæ*.)

C. perfoliata, a curious 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. alsinoides*. White with red anthers. May to July. Nootka Sound, N. W. America. B. M. t. 1309.
- *arctica*. 1. White. June. Siberia. 1818. Syn., *C. Joanneana*.
- *cubensis*. See *C. perfoliata*.
- *gypsophiloides* f. Pink. October. California. 1835. Swt. Fl. Gard. ser. 2, t. 375.
- *Joanneana* f. See *C. arctica*.
- *perfoliata*. 1. White. June. N. Amer. 1794. B. M. t. 1336. Syn., *C. cubensis*.
- *sibirica*. 1. Red. June. Siberia. 1768. B. M. t. 2243.
- *unalaschkeensis*. 1. White. June. Russia. 1820. Syn., *C. bifida*.

HARDY TUBEROUS-ROOTED.

- C. acutiflora*. 1. White. May. N. Amer.
- *acutifolia*. 2. August. Siberia. 1827.
- *californica*. California. Herbaceous perennial.
- *caroliniana*. Swt. Fl. Gard. t. 208. See *C. virginica*, var. *spathulifolia*.
- *grandiflora*. 1. Pink. April. N. Amer.
- *lanceolata*. 1. White. April. N. Amer. 1812.
- *longifolia*. 1. White. April. N. Amer. 1827.
- *polyphylla*. 1. Pink. April. N. Amer. 1827.
- *umbellata*.
- *Vestia* n. 1. Rose. Altai. 1827.
- *virginiana*. 1. White. N. Amer. 1740. B. M. t. 941.
- *spathulifolia*. 1. Pink. April. N. America. 1789. Syn., *C. caroliniana* and *C. spathulifolia*.

Cleisto'stoma. (From *kleio*, to close, and *stoma*, a mouth. Nat. ord., *Orchideæ*; Tribe, *Vandee-Sarcantheæ*. Allied to *Sarcochilus*.)

Stove orchids; divisions; blocks of wood, with a little sphagnum moss. Summer temp., 60° to 80°; winter, 55° to 60°.

- C. bicolor*. Pink, purple. July. Manilla. 1848. Paxt. Fl. Gard. II. p. 100.
- *crassifolium*. Green, purple. E. Indies. 1852. Paxt. Fl. Gard. 99.
- *Dawsonianum*. Sulphur, orange, brown. 1868.
- *dealbatum*. See *Sarcanthus dealbatus*.
- *decipiens*. Ochre. May. Ceylon. 1843.
- *discolor*. Yellow. March. India. 1844.
- *fuscum*. Brown. E. Indies. 1849.
- *Gnibe'rti*. Yellow spot, cinnamon rings. Lind. t. 9.
- *ionosmum*. B. R. 1847, t. 71. See *Sarcochilus*.
- *lanatum*. Yellow, purple. July. Burmah. 1849.
- *latifolium*. Yellow, red. March. Singapore. 1840.

- C. maculatum*. Yellow, pink. March. Ceylon. 1839.
- *ringens*. Yellow; lip purple, orange. Philippines. 1888.
- *rosea*. Straw-coloured. September. Manilla. 1837.
- *spicatum*. Red, yellow. May. Borneo. 1846.
- *striatum*. Yellow, red. Darjeeling. 1879. Syn., *Echinoglossum striatum*.
- *tridentatum*. See *Sarcochilus tridentatus*.

Cle'matis. Virgin's Bower, Traveller's Joy or Old Man's Beard. (From *klema*, a vine-branch; in reference to their climbing like a vine. Nat. ord., *Ranunculaceæ*; Tribe, *Clematideæ*.)

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.

STOVE EVERGREEN CLIMBERS.

- C. americana* n. 12. White. S. Amer.
- *brazilia* n. 12. White. Brazil. 1823.
- *caripensis*. 12. White. Trinidad. 1820.
- *dioica*. 14. Green. Yellow. May. W. Ind. 1733.
- *grandiflora* n. 12. Yellow, green. Sierra Leone. 1823.
- *hedysarifolia*. White. E. Ind. 1819. B. R. t. 599.
- *smilacifolia*. 20. Purple. W. Ind. 1824. B. M. t. 4259.

GREENHOUSE CLIMBERS.

- C. aristata*. 12. Green, yellow. June. N. Holland. 1812. Deciduous. B. R. t. 238.
- *balearia* n. 12. Yellow, white. February. Minorca. 1783. Half-hardy evergreen.
- *barbellata* n. Chocolate and cream. May. Simla.
- *brachiatata*. 2. Yellow, green. October. Cape of Good Hope. Evergreen. B. R. t. 97.
- *chinensis*. 12. White. Trinidad. 1820. Half-hardy evergreen.
- *coccinea*. Scarlet. Texas. 1868. Syn., *C. Pitcheri* of some gardens.
- *luteola*. Flowers yellow inside. Rev. Hort. 1888, p. 348.
- *parviflora*. Flowers smaller, reddish inside. 1888.
- *Cole'nsii*. Yellow. New Zealand. 1889.
- *coriacea*. 12. White. N. Holland. 1821.
- *glycinoides*. 10. White. N. Holland. 1826. Evergreen.
- *graveolens*. Pale yellow. July. Chinese Tartary. 1845. Half-hardy deciduous. B. M. t. 4495.
- *grewiaeflora*. Tawny-yellow. Himalayas. 1868.
- *hexasepala*. 8. Pale green. April. New Zealand. 1844. B. R. 1846, t. 44.
- *indivisa*. 20. White, cream. April. New Zealand. B. M. t. 4395.
- *lobata*. 20. White, cream. April. New Zealand. 1847. Rev. Hort. 1853, t. 13.
- *lineariflora*. 4. White. July. Carolina. 1823. Herbaceous perennial.
- *nepalensis*. White. Nepal. 1874.
- *odora* n. June. E. Ind. 1831.
- *Pitche'ri*. Dull-purple. See *C. coccinea*.
- *Sarge'nti*. A small-flowered form of *C. Pitcheri*. N. America. 1888.
- *zanzibarensis*. 10. Zanzibar. 1820.

HARDY CLIMBERS AND HERBACEOUS.

- C. aethusifolia latifolia*. White. September to October. Amurland and N. China. 1869. B. M. t. 6542.
- *angustifolia*. 2. White. June. Austria. 1787. Jacq. Ic. t. 104.

- C. cærula*. 10. Blue. April. Japan. 1836. B. R. t. 1955.
 — *grandiflora*. Purple. June. Japan. 1841. B. M. t. 3983.
 — *californica*. California. 1840.
 — *campaniflora*. 6. Purple. July. Spain. 1810.
 — *cirrhosa*. 12. White, green. April. Spain. 1596. B. M. t. 1070. Syn., *C. calycina*, B. M. t. 959.
 — *crispata*. 6. Pale lilac. August. N. Amer. 1726. B. M. t. 1892. Syn., *C. cordata*, B. M. t. 1816.
 — *cylindrica*. 3. Blue. August. N. Amer. 1820. Herbaceous perennial. B. M. t. 1160.
 — *Hendersoni*. Violet. A hybrid.
 — *Davidiana*. Blue. China. 1867. Allied to *C. tubulosa*. Herbaceous perennial.
 — *dahurica*. 12. Yellow, green. September. Dahuria. 1820.
 — *Douglassii*. Blue. N. America. 1880.
 — *diversifolia*. 4. White. April. Herbaceous perennial.
 — *erecta*. 3. White. July. Austria. 1597.
 — *hispanica*. 3. White. July. Spain. 1800. Herbaceous perennial.
 — *flammula*. 20. White. August. France. 1596.
 — *caespitosa*. 20. White. September.
 — *maritima*. 20. White. May. South of Europe.
 — *rotundifolia*. 20. White. August. France. 1596.
 — *robusta*. 20. White. Japan. 1875.
 — *rubeilla*. 20. Reddish. September.
 — *vulgaris*. 20. White. August. France.
 — *florida*. 10. White. June. Japan. 1776. Jacq. H. Schenb. t. 357.
 — *bicolor*. White, purple. B. R. 1838, t. 25.
 — *floropleura*. 10. White. June.
 — *Stebodii*. 10. Purple, green. June. Japan. 1836. Swt. Fl. Gard., ser. 2, t. 396.
 — *Fortunei*. White. Japan. 1863. *C. Johannis Veitchii* is a variety of this.
 — *glauca*. 12. Pale yellow. April. Siberia. Wats. Dendr. t. 73.
 — *Grahamii*. 15. Pale green. July. Mexico. 1846. Fl. Ser. t. 376.
 — *Hookeri*. Blue. Taurus?
 — *integrifolia*. 2. Blue. July. Hungary. 1596. B. M. t. 65.
 — *elongata*. 2. Blue. June. Europe.
 — *latifolia*. Purple. July.
 — *intricata*. Mongolia. 1889.
 — *Jackmanii*. Blue, purple.
 — *alba*. Garden, Feb. 16, 1884.
 — *lanuginosa*. Blue. June. China. 1851. Fl. Ser. t. 811.
 — *lathyrifolia*. 4. White. June. 1836. Herbaceous perennial. B. R. 1839, t. 61.
 — *Masoniana*. 12. Cape of Good Hope.
 — *mongolica*. Yellow. 1888.
 — *monstrosa*. Greenish. June. Japan.
 — *montana*. 20. White. May. Nepaul. 1831. Deciduous. B. R. 1840, t. 53.
 — *grandiflora*. White. May. B. M. t. 4061.
 — *nepalensis*. May. Nepaul. 1835.
 — *ochroleuca*. 2. Light yellow. June. N. Amer. 1767. Deciduous. B. C. t. 661.
 — *orientalis*. 8. Yellow, white. August. Levant. 1731. Deciduous.
 — *paniculata*. 20. White. August. Japan.
 — *paucis*. White. June. Japan.
 — *Sophia*. Purple; midrib green. Japan. 1853. Fl. Ser. t. 852.
 — *Pieroti*. White, small. Japan. 1888.
 — *pedicellata*. 12. White, green. July. Majorca. B. R. 1847, t. 21.
 — *reticulata*. 8. Purple. July. N. Amer. 1812. Deciduous. Wats. Dendr. t. 72.
C. rhodochlora. Garden variety. 1887.
 — *semitrilobata*. 1. White, green. June. Spain.
 — *Simeii*. 8. Purple. July. N. Amer. 1812. Deciduous.
 — *Stanleyi*. 3. Rosy-white, or purple. S. Africa. G. C. 1890, v. 8, p. 326, f. 66.
 — *stans*. White. Japan. 1870.
 — *triternata*. 12. White. 1800. Deciduous.
 — *tubulosa*. 2. Blue. September. China. 1845. Herbaceous. B. M. t. 4269.
 — *verticillaris*. Bluish-purple. N. Amer. 1889.
 — *Vornata*. 12. Purple. August. N. Amer. 1730. Deciduous. American Traveller's joy. Andr. Rep. t. 71.
 — *viornoides*. 8. Lilac. August. N. Amer. 1828. Deciduous.
 — *virginiana*. 15. Green. July. N. Amer. 1757. Deciduous. Wats. Dendr. t. 4.
 — *bracteata*. 15. Greenish-white. June. N. Amer. 1767.
 — *vitalba*. 20. White. August. England. Deciduous. Traveller's joy. Eng. Bot. ed. 3, t. 1.
 — *integra*. 20. White. August. England.
 — *viticella*. 20. Purple. August. Spain. 1569. Deciduous. B. M. t. 565.
 — *cærula*. 20. Blue. July. Spain. 1659.
 — *pleura*. 20. Purple. August.
 — *purpurea*. 20. Purple. July. Spain.
 — *tenuifolia*. 20. Crimson. June.
 Many beautiful garden varieties are now in cultivation.
- Cleo'me.** (From *kleio*, to shut; in reference to the parts of the flower. Nat. ord., *Capparidaceæ*.)
 Those of a shrubby character by cuttings of half-ripe shoots in sand, under a bell-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.
- C. arabica*. 2. Yellow. June. Arabia. 1794.
 — *Dillenia*. 1. White. June. Levant. 1732. Syn., *C. ornithopodioides*.
 — *flavida*. Yellow. June. Australia. 1825.
 — *iberica*. 1. White. July. Iberia. 1820.
 — *hirsuta*. 1. Yellow. N. Amer. 1840. Herbaceous perennial. B. R. 1841, t. 67. Syn., *Peritoma aurea*.
 — *pubescens*. 2. White. July. 1815. B. M. t. 1857.
 — *speciosissima*. Purple. July. Mexico. 1827. B. R. t. 1312.
 — *trinevia*. Yellow. Arabia. 1837.
 — *violacea*. 1. Purple. June. Portugal. 1776.
 — *virgata*. 1. White. June. Persia. 1820.
- STOVE SHRUBS AND HERBACEOUS.
- C. arborescens*. 8. White. June. Caraccas. 1817. Evergreen.
 — *dendroides*. 5. Purple. Brazil. 1828. B. M. t. 3296.
 — *droserifolia*. Yellow, violet. May. Egypt. 1837. Greenhouse shrub.
 — *gigantea*. 6. White. June. S. Amer. 1774. B. M. t. 3137.
 — *micrantha*. White. June. 1824.
 — *procumbens*. Yellow. June. W. Ind. 1798.
- STOVE ANNUALS.
- C. aculeata*. 2. White. June. S. Amer. 1817.
 — *cardinalis*. 2. Red. July. Mexico. 1823.
 — *diffusa*. 1. Green. June. Brazil. 1823.
 — *heptaphylla*. 1. White. June. Jamaica. 1817.
 — *Houstonii*. 1. White. June. W. Ind. 1730.
 — *monophylla*. 1. Yellow. June. E. Ind. 1759.
 — *zeylanica*. 1. Yellow. June. E. Ind. 1759.

- C. polygama*. 2. White. June. W. Ind. 1824.
 — *pu'ngens*. 2. White. July. W. Ind. 1731.
 Biennial Syn., *C. spinosa*. B. M. t. 1640.
 — *ro'sea*. 2. Red. June. Brazil. 1825. B. R. t. 960.
 — *spino'sa*. See *C. pungens*.

EXCLUDED SPECIES.

- C. Burma'nni*. See *Polanisia dodecandra*.
 — *can'dela'brum*. B. M. t. 2656. See *Gynandropsis*.
 — *cape'nsis*. See *Helophila cleomoides*.
 — *Chelad'nni*. See *Polanisia*.
 — *dodeca'ndra*. See *Polanisia*.
 — *canad'e'nsis*. See *Polanisia graveolens*.
 — *icos'a'ndra*. See *Polanisia viscosa*, var. *icosandra*.
 — *pentaphylla*. See *Gynandropsis pentaphylla*.
 — *pinn'a'ta*. See *Stanleya pinnatifida*.
 — *prostra'ta*. See *Rothia trifoliata*.
 — *spectiosa*. See *Gynandropsis*.
 — *triphylla*. See *Gynandropsis sessiliflora*.
 — *unglandulo'sa*. See *Polanisia*.
 — *visco'sa*. See *Polanisia*.

Clerode'ndron. (From *kleros*, chance, and *dendron*, a tree; said to be owing to the uncertainty of the medicinal qualities. Nat. ord., *Verbenaceæ*; Tribe, *Viticeæ*. Syns., *Siphonanthus* and *Volkameria*.)

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.

GREENHOUSE EVERGREENS.

- C. attenu'a'tum*. 6. Port Jackson. 1824.
 — *costa'tum*. 6. N. Holland. 1823.
 — *jac'tidum*. 5. Rose. August. N. China. 1820.
 — *fra'grans*. 6. White, red. October. China. 1790. Syn., *Volkameria fragrans*.
 — — *pleniflora*. 6. White, red. October. China. 1790. B. M. t. 1834.
 — *japo'nicum*. White. July. Japan. 1823.
 — *li'vidum*. 3. White. November. China. 1824. B. R. t. 945.
 — *myrici'des*. White, blue. Spring. Tropical Africa. Syn., *Cyclonema myricoides*. Stove.
 — *sero'tinum*. White. China. 1867.
 — *Thomso'na*. Scarlet. Old Calabar. 1862. Stove climber.
 — *tomentosu'm*. 5. White. April. N. S. Wales. 1794.
 — *tricho'tomum*. 6. White; calyx reddish. Japan. September. 1800. B. M. t. 6561.

STOVE EVERGREENS.

- C. aculea'tum*. 4. White. September. W. Indies. 1739. Syn., *Volkameria aculeata*.
 — *angustifo'lium*. See *C. heterophyllum*.
 — *Bethunia'num*. 10. Scarlet. Borneo. 1847.
 — *buxifo'lium*. See *C. inermis*.
 — *calamito'sum*. 4. August. E. Ind. 1823.
 — *capita'tum*. 5. Cream. August. Sierra Leone. 1846.
 — *cephala'nthum*. Calyx purplish; corolla creamy-white. Zanzibar. 1888. Climber.
 — *ce'rnuum*. 4. E. Ind. 1823.
 — *cocci'neum*. See *C. squamatum*.
 — *corda'tum*. 3. White. July. Nepal. 1826.
 — *coromandelia'num*. 6. Mauritius. 1823.
 — *denta'tum*. White. May. E. Ind. 1826.

- C. Emirne'nsis*. 3. White. February. Madagascar. 1822. B. M. t. 2925.
 — *fa'llax*. Scarlet. September. Java. B. R. 1844, t. 19. Syn., *C. speciosissimum*, of Paxton.
 — *floribu'ndum*. 6. Lilac. July. Madagascar. 1825.
 — *fortuna'tum*. 6. July. E. Ind. 1784.
 — *glandulo'sum*. Scarlet. September. Syn., *C. speciosissimum* of some gardens.
 — *glau'cum*. 4. E. Ind. 1825.
 — *hastat'um*. 6. White. June. E. Ind. 1825. B. R. t. 1307.
 — *helianthifo'lium*. 5. E. Ind. 1824.
 — *heterophyllum*. 3. White. August. Mauritius. 1805. Syns., *C. angustifolium* and *Volkameria angustifolia*, Andr. Rep., t. 554.
 — *Hugelii*. 5. Crimson. Sierra Leone. 1842.
 — *illu'stre*. Scarlet. Celebes. 1884.
 — *in'erme*. 4. White. July. Indian Archipelago. 1692. Syns., *C. buxifolium* and *Volkameria buxifolia* and *inermis*.
 — *infortuna'tum*. 6. White. July. E. Ind. 1796. Syn., *C. viscosum*.
 — *Kaempfe'ri*. See *C. squamatum*.
 — *laurifo'lium*. Scarlet. E. Ind.
 — *leucoc'ptrum*. See *Teucrium macrostachyum*.
 — *ligustr'i'num*. 3. White. September. Mexico. 1789.
 — *macrophyllum*. 3. White, blue. July. E. Ind. 1815. B. M. t. 2536.
 — *macro'sphon*. Snow-white, filaments purple. Zanzibar. 1833. B. M. t. 6695.
 — *Minaha'esce*. Calyx red; corolla pale yellow; berry blue. Celebes.
 — *nerifo'lium*. White. May. E. Ind. 1824.
 — *nu'tans*. 6. White. November. E. Ind. 1825. B. M. t. 8049.
 — *odor'a'tum*. See *Caryopteris Wallichiana*.
 — *panicula'tum*. 6. Scarlet. August. Java. 1809. Syn., *C. pyramidale*, Andr. Rep. t. 628.
 — *phlomo'des*. 4. White. August. E. Ind. 1820.
 — *pube'scens*. White. July. W. Ind. 1824.
 — *pyramida'le*. See *C. paniculatum*.
 — *Rumphia'num*. Flesh-coloured, deepening to crimson. Java.
 — *salicifo'lium*. 4. E. Ind. 1824.
 — *sc'a'ndens*. 12. White. July. Guinea. 1822. Climber.
 — *serra'tum*. 6. Nepaul. 1822.
 — *sinua'tum*. 3. White. February. Sierra Leone. 1846. B. M. t. 4255.
 — *siphona'nthum*. 6. White. E. Ind. 1796. Syn., *Siphonanthus indicus*.
 — *specios'issimum*. See *C. fallax* and *C. glandulosum*.
 — *sple'ndens*. 10. Scarlet. June. Sierra Leone. 1840. Climber.
 — *squama'tum*. 10. Scarlet. August. China. 1790. B. R. t. 649. Syns., *C. Kaempferi* and *Volkameria Kaempferi*.
 — *ternifo'lium*. 4. Nepaul. 1823.
 — *urticace'folium*. 4. E. Ind. 1824.
 — *verticilla'tum*. 6. White. August. Nepaul. 1818.
 — *viola'ceum*. 4. Violet. 1822.
 — *visco'sum*. See *C. infortunatum*.
 — *volu'bile*. 6. White. Guinea. 1829. Climber.

Cle'thra. (From *klethra*, the Greek name of the Alder; alluding to a supposed resemblance between their leaves. Nat. ord., an anomalous genus of *Eriaceæ*. Allied to *Andromeda*.)

Cuttings of half-ripe shoots, of the tenderer species, in April, under a bell-glass, and in sand. The North American species are hardy enough for our shrubberies, and are propagated by layers

in autumn, or by firm cuttings in sand, under a hand-light, in summer; for all, peat is necessary.

HARDY DECIDUOUS SHRUBS.

- C. acuminata*. 10. White. September. Carolina. 1806. B. C. t. 1427.
 — *alnifolia*. 4. White. September. N. Amer. 1731.
 — *barbinervis*. White. Japan. 1870. Hardy.
 — *mexicana*. 10. White. Mexico. 1840. Evergreen.
 — *na'na*. 2. White. August. 1820.
 — *paniculata*. 4. White. September. N. Amer. 1770.
 — *sea'bra*. 4. White. September. Georgia. 1806.
 — *tomentosa*. 4. White. September. N. Amer. 1731.

GREENHOUSE EVERGREENS.

- C. arbores*. 8. White. September. Madeira. 1784. B. M. t. 1057.
 — — *minor*. 2. White. September. Madeira.
 — — *variegata*. 3. White. August. Madeira.
 — *ferruginosa*. 4. White. Peru. 1800.
 — *quercifolia*. 10. White. June. S. Mexico. 1840. B. R. 1842, t. 23.
 — *secundiflora*. White. Madeira. 1879.
 — *trinifolia*. 20. White. Jamaica. 1825. Stove.

Cleyera. (Named after *Dr. Cleyer*, a Dutch botanist. Nat. ord., *Ternstroemiaceæ*; Tribe, *Ternstroemiaceæ*.)

Greenhouse evergreen shrubs. Cuttings of half-ripe shoots in sand, under a bell-glass; sandy, fibry peat. Summer temp., 60° to 70°; winter, 45° to 50°.

- C. japonica*. 5. Yellowish-white. Japan. 1820.
 — *theoides*. 4. Creamy-white. Jamaica. 1818. Syn., *Freziera theoides*, B. M. t. 4546.

Clanthus. (From *kleios*, glory, and *anthos*, a flower. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. 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, easily; peat and loam, with a little sand or charcoal. Young plants are best grown rapidly, old plants are so subject to red epider; do well in pots or planted out in a conservatory, or against a wall, where a little protection can be given in winter.

- C. carneus*. 6. Flesh-coloured. May. Philippines. 1840. B. R. 1841, t. 51.
 — *Dampieri*. 2. Red. March. New Holland. 1852. *Marginata* is a striking variety, white, margin red, boss black. 1866.
 — — *germanicus*. Garden variety. 1889.
 — *punicus*. 3. Crimson. May. New Zealand. 1832. B. R. t. 1775. Syn., *Donia punicea*.
 — — *magnificus*. Reddish. Navigator's Island. 1853. Fl. Ser. t. 879.

Click Beetles. The section *Agriotes* of the genus *Elater*, the grubs of which are extremely destructive to root-crops. See **Wireworms**.

Clidanthus. See **Chlidanthus**.

Clidemia. (In honour of *Clidemia*, an ancient Greek botanist. Nat. ord., *Melastomaceæ*; Tribe, *Miconiææ*.)

Stove shrubs. For cultivation, see **MICONIA**, to which genus **CLIDEMIA** is allied.

- C. hirta*. White. September. Jamaica. 1294? Syn., *Melastoma hirta*, B. M. t. 1971. This was the first Melastomad to flower in Britain.

C. vittata. Rose. Peru. 1876. Ill. Hort. n. ser. t. 219.

Cliftonia. (Commerative. Nat. ord., *Lyrrilææ*.)

Propagated by cuttings.

- C. ligustrina*. 8. White, buds pink tipped. May. Carolina and Georgia. Syn., *Mylocaryum ligustrinum*. B. M. t. 1625. The Buck-wheat tree.

Climate controls the growth of plants most imperatively; and, in the cultivation of fruits, flowers, and culinary vegetables, it forms the first object of the gardener's inquiry. He will be greatly aided in the successful culture of most plants by attaining a knowledge of their habitat and its surroundings. How all-influential climate is 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 will more readily command success by a thorough knowledge of those climatic differences and peculiarities. We often see long tables of the average monthly temperature of places; but these are useless 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.

Clinaanthus. See **Clitanthus**.

Clintonia. (Named, by the unfortunate Douglas, after his friend, *De Witt Clinton*, Governor of the state of

New York. Nat. ord., *Liliaceæ*; Tribe, *Convallariææ*.)

- C. Andrewsia*'na. 1 to 1½. Claret-purple. N. America. 1888. B. M. t. 7092.
 — *bored'lis*. 1. Yellowish-green. May. N. America. 1778. Syn., *Smilacina borealis*, B. M. t. 1408.
 — *e'legans*, B. M. t. 1241, and *C. pulchella*, B. R. t. 1909. See *Downingia*.
 — *umbella'ta*. ½. Whitish. May. North America. 1778. Syn., *Smilacina borealis*, B. M. t. 1155, and *S. umbellata*.
 — *uniflo'ra*. ½. White. July. North America. Syn., *Smilacina uniflora*.

Cliloc'cca tenuiflo'lia. See *Linum Babingtonii*.

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.

Clita'nthes. (From *klitus*, a mountainous declivity, and *anthos*, a flower. Nat. ord., *Amaryllidææ*. Allied to *Urceolina*.)

Natives of Lima. They will grow and flower in an open, warm border, to be taken up on the approach of frost, and kept dry through the winter, and are readily increased by offsets from the old bulbs. There are believed to be three species: *hu'milis*, *hu'tea*, and *Maclea'na*; little is known about them, but *C. humilis* is probably the same as *Coburgia humilis*, B. R. 1842, t. 46, now known as *Stenomesson humile*.

Clito'ria. (From *kleio*, to shut up; in reference to its seeding within the flower long before the corolla drops off. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Phaseolus*.)

Stove evergreen twiners, except where otherwise mentioned. Cuttings of stubby side-shoots in heat, in sandy soil, under a bell-glass; and seeds, when procurable; sandy peat and fibry loam, with sand and charcoal. Summer temp., 60° to 65°; winter, 50° to 55°.

- C. arbore'scens*. 8. Pink. August. Trinidad. 1804. Shrub. B. M. t. 3156.
 — *Berteria'na*. Yellow. June. St. Domingo. 1824. Trailing annual.
 — *brazilia'na*. See *Centrosema brazilianum*.
 — *Broussonet'ii*. See *Cologania Broussonetii*.
 — *cocci'nea*. 4. Scarlet. July. Brazil. 1820.
 — *ere'cta*. S. Amer. 1822.
 — *fornó'ea*. See *Centrosema brazilianum*.
 — *fu'lgens*. Paxt. Mag. ii., p. 121. See *Galactia*.
 — *gra'cilis*. 2. Blue. July. S. Amer. 1824.

- C. heterophylla*. 1. Blue. July. E. Ind. 1812. B. M. t. 2111.
 — *lasci'via*. 4. July. Madagascar. 1826.
 — *maria'na*. 3. Blue. August. N. Amer. 1759. Deciduous half-hardy.
 — *mezia'na*. 3. Purple. October. N. Amer. 1759. Greenhouse. Perhaps a form of *C. mariana*.
 — *multiflo'ra*. See *Vilmorinia multiflora*.
 — *Plumie'ri*. B. R. t. 268. See *Centrosema Plumieri*.
 — *polyphy'la*. See *Barbieria polyphylla*.
 — *terna'tea*. 4. Blue. July. E. Ind. 1739. B. M. t. 1542.
 — — *a'ba*. White. May. E. Ind.
 — — *cæru'lea*. Blue. May. E. Ind.
 — — *ma'jor*. 4. Bright brown. August. Sydney. 1845. Greenhouse.
 — *virginia'na*. 6. Purplish. July. 1732. Greenhouse. B. R. t. 1047.

Cliv'ia. (Named after the *Duchess of Northumberland*, a member of the Clive family. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllææ*.)

N. B.—The genus *IMANTOPHYLLUM* is identical with the genus *CLIVIA*, both genera being founded upon the same plant, viz., *IMANTOPHYLLUM Aitonii*, or *CLIVIA nobilis*, and both were published upon the same date (October 1, 1828), therefore neither name has the right to priority; though most botanists adhere to the name *CLIVIA*, whilst in gardens that of *IMANTOPHYLLUM* is perhaps most frequently met with.

Greenhouse bulbs. 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*. Red hybrid between *C. miniata* and *C. nobilis*. Syn., *Imantophyllum cyrtanthiflorum*, Fl. Ser. t. 1877.
 — *Gard'ni*. 2. Red, yellow. December. Natal. 1854. B. M. t. 4895.
 — *minia'ta*. 1½. Bright scarlet, yellow. Natal. 1854. Gf. t. 434. Syn., *Imantophyllum miniatum*, B. M. t. 4733.
 — — *Coope'ri*. S. Africa. 1872.
 — — *grandiflo'ra*. Large-flowered variety.
 — — *Linde'ni*. Ill. Hort. n. s. t. 343.
 — — *sulphu'rea*. Yellow. 1888.
 — *no'bilis*. 1½. Red, yellow. July. Cape Colony. 1828. B. R. t. 1182. Syn., *Imantophyllum Aitonii*, B. M. t. 2856.

Clomeno'coma mont'na. See *Dysodia grandiflora*.

Cloudberry. *Ru'bus chamæmo'rus*.

Clove. *Did'nthus caryophyllus*.

Clover. *Trifo'lium prat'e'nsc*.

Clove-tree. *Caryophyllus*.

Clowe'sia. (Named after the late *Rev. J. Clowes*, a great orchid-grower near Manchester. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Maxillaridææ*. Allied to *Cycnoches*.)

Stove orchid. Division; peat and loam, with charcoal. Summer temp., 60° to 80°; winter, 50° to 60°.

- C. ro'sea*. ½. White, pink. Brazil. B. R. 1842. t. 39.

Club-moss. *Lycop'dium*.

Club-root. See *Cabbage diseases*.

Clumps, when close, are sometimes called *Thickets*, and, when open, *Groups of Trees*. They differ only in extent from a wood, if they are close, or from a grove, if they are open. They are small woods and small groves, governed by the same principles as the larger, after allowances made for their dimensions. But, besides the properties they may have in common with woods, or with groves, they have others peculiar to themselves. They are either independent or relative. When independent, their beauty, as single objects, is solely to be attended to; when relative, the beauty of the individuals must be sacrificed to the effect of the whole, which is the greater consideration. The least clump that can be is of two trees; and the best effect they can have is, that their heads, united, should appear one large tree. Two, therefore, of different species, or seven or eight of such shapes as do not easily join, can hardly be a beautiful group, especially if it have a tendency to a circular form.

A peculiarity of clumps is the facility with which they admit a mixture of trees and of shrubs, of wood and of grove; in short, of every species of plantation. None are more beautiful than those which are so composed. Such compositions are, however, more proper in compact than in straggling clumps; they are most agreeable when they form one mass. If the transitions from very lofty to very humble growths, from thicket to open plantations, be frequent and sudden, the disorder is more suited to rude than to elegant scenes.

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 highly artificial. 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.—*Whately*.

Clusia. Balsam-tree. (Named after *C. de l'Ecluse*, a French botanist. Nat. ord., *Guttiferae*; Tribe, *Clusiaceae*.)

Stove evergreen trees, except *C. rosea*; 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. alba*. 30. White. S. Amer. 1752.
- *Brogniartiana*. White. French Guiana. 1862. Shrub. B. M. t. 5325.
- *flava*. 30. Yellow. Jamaica. 1759. Andr. Rep. t. 223.
- — *Brownii*. Jamaica.
- *Melinoi*. Tropical America. 1869.
- *odora*. Rosy-pink. August. Columbia. 1869. B. M. t. 5865.
- *rosea*. 30. Red. July. Carolina. 1692. Hardy or half-hardy.
- *tetra'naria*. White. S. Amer. 1820.
- *venosa*. White. S. Amer. 1733.

Cluytia. (Named after *Cluyt*, a professor of botany at Leyden. Nat. ord., *Euphorbiaceae*; Tribe, *Crotoneae*.)

Greenhouse evergreen shrubs, except where otherwise specified. Cuttings of small side-shoots; but, if not to be obtained, points of shoots before they become hard, in sand, over a layer of sandy peat, and covered with a bell-glass; sandy loam and fibry peat. Summer temp., 55° to 75°; winter, 40° to 48°. The East Indian species require more heat in winter.

- C. alaternoides*. 2. White. July. Cape of Good Hope. 1692. B. M. t. 1321.
- *collina*. See *Lebidieropsis collina*.
- *daphnoides*. 3. White. May. Cape of Good Hope. 1731.
- *ericoides*. 2. White. April. Cape of Good Hope. 1790. B. R. t. 779.
- *heterophylla*. 3. White. May. Cape of Good Hope. 1818.
- *pa'tula*. See *Lebidieropsis collina*.
- *potifolia*. 2. White. May. Cape of Good Hope. 1790. Jacq. H. Schenb. t. 250.
- *polygonoides*. 2. White. April. Cape of Good Hope. 1790.
- *pubescens*. 3. White. April. Cape of Good Hope. 1800.
- *pulchella*. 2. White. June. Cape of Good Hope. 1739. B. R. t. 1945.
- *tenuifolia*. 3. White. June. Cape of Good Hope. 1817.
- *tomentosa*. 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*.)

Greenhouse evergreen shrubs. *C. tricoccum* is hardy against a wall. Cuttings in sand, under a glass, in April; peat and fibry loam, with a little silver-sand.

C. pulverulentum. 6. Yellow. June. Madeira. 1822.
— *tricoccum*. 6. Yellow. June. South Europe. 1793.

Cnestis. (From *knao*, to scratch; referring to the prickly capsules. Nat. ord., *Connaraceæ*; Tribe, *Cnestideæ*.)

Stove evergreens. Cuttings of ripe young shoots in sand, under a bell-glass, in sweet bottom-heat. Loam and peat; both fibry, with sand. Summer temp., 60° to 80°; winter, 50° to 60°.

C. corniculata. 10. Purple. Guinea. 1793.
— *glabra*. 10. White, green. Mauritius. 1823.
— *polyphylla*. 6. Purple. Mauritius. 1823

Cnicus. (From *chnizein*, to wound. The plant is covered with prickly hairs. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*. Syn., *Cirsium*.)

Perennials by division of the roots; biennials by seeds. Common soil.

HARDY BIENNIALS.

C. Afer. 2. Purple. June. Barbary. 1800. Syn., *Carduus Afer*, *Cirsium Afrum*, and *cynaroides*.
— *arvensis*. 2. Purple. July. Caucasus. 1820. Syn., *Cirsium incanum* and *setosum*.
— *Cassabonæ*. 2. Purple. July. South Europe. 1791.
— *catalanicus*. 2. Purple. June. South Europe. 1781. Syn., *Cirsium paniculatum*.
— *cichoraceus*. 3. Purple. August. Naples. 1816.
— *ciliatus*. 2. Purple. June. N. America. 1803. Syn., *Cirsium discolor*.
— *conspicuus*. 8. Scarlet, orange. September. Mexico. 1825. Syn., *Erythrolœna conspicua*. Swt. Fl. Gard. t. 134.
— *dealbatus*. 3. Purple. July. Caucasus. 1820. Syn., *Cirsium dealbatum*.
— *diacanthus*. 3. Purple. July. Syria. 1800. Syn., *Cirsium diacanthum* and *Chamepeuce diacantha*.
— *eriphorus*. 4. Purple. July. Britain. Syn., *Cirsium eriphorum*.
— *ferox*. 3. White. July. South Europe. 1683. Syn., *Cirsium ferox*.
— *inaeus*. See *C. arvensis*.
— *lappaceus*. 4. Purple. July. Caucasus. 1821. Syn., *Cirsium lappaceum*.
— *nivalis*. 4. Purple. July. Mexico. 1827. Syn., *Cirsium cernuum*.
— *orientalis*. 3. Purple. July. Asia Minor. 1827. Syn., *Cirsium orientale*.
— *pazcuarensis*. 3. Purple. July. Mexico. 1827. Syn., *Cirsium pazcuarensis*.
— *pungens*. 3. Purple. July. South Europe. 1820. Syn., *Cirsium pungens*.
— *squarrosus*. 3. Purple. July. Siberia. 1818. Syn., *Cirsium squarrosum*.
— *strigosus*. 2. Purple. August. Caucasus. 1825. Syn., *Cirsium strigosum*.

HALF-HARDY BIENNIALS.

C. Grahami. 3-5. Crimson. New Mexico. 1871. Syn., *Cirsium Grahami*.
— *mexicanus*. 4. White. September. Mexico. 1837.

HARDY HERBACEOUS PERENNIALS.

C. acutis. 1. Purple. July. Britain. Syn., *Cirsium acule* and *Gmelini*.
— *altissimus*. 6. Purple. August. N. Amer. 1726. Syn., *Carduus altissimus* and *Cirsium altissimum*.
— *ambiguus*. 2. Purple. July. Mont Cenis. 1820. Syn., *Cirsium ambiguum*.
— *angulatus*. 2. Purple. July. Switzerland. 1819. Syn., *Cirsium angulatum*.
— *arachnoideus*. 2. Purple. July. Tauria. 1818. Syn., *Cirsium arachnoideum*.
— *Barbieri*. Syn., *Carduus Barbieri*.
— *Bertolii*. 3. Yellow. July. Italy. 1820.
— *bœticus*. 3. Yellow. July. Spain. 1824.
— *carniolicus*. See *C. rivularis*.
— *ciliatus*. 3. Purple. August. Siberia. 1787. Syn., *Cirsium ciliatum*.
— *desertorum*. 2. Purple. July. Siberia. 1824. Syn., *Cirsium desertorum*.
— *echinatus*. 1. Purple. August. Barbary. 1817. Syn., *Cirsium echinatum*.
— *echinocephalus*. 2. Purple. July. Caucasus. 1826. Syn., *Cirsium echinocephalum*.
— *elatius*. See *C. polyanthemus*.
— *fimbriatus*. 4. Purple. July. Caucasus. 1816. Syn., *Cirsium fimbriatum*.
— *Forsteri*. See *C. palustris*.
— *glutinosis*. 2. Pale yellow. July. South Europe. 1816. Syn., *Cirsium glutinosum*.
— *Gmelini*. See *C. acutis*.
— *Hallerii*. 4. Purple. July. South Europe. 1816. Syn., *Cirsium Hallerii*.
— *helenioides*. 6. Purple. July. Siberia. 1804. Syn., *Cirsium helenioides*.
— *heterophyllum*. 2. Purple. July. Britain. Syn., *Cirsium heterophyllum*.
— *laniflorus*. 2. Purple. July. Tauria. 1819. Syn., *Cirsium laniflorum*.
— *monspessulanus*. 2. Purple. June. Montpelier. 1596. Syn., *Cirsium monspessulanum*.
— *munus*. 3. Purple. July. Caucasus. 1816. Syn., *Cirsium munus*.
— *muticus*. 2. Purple. July. N. Amer. 1820. Syn., *Cirsium muticum*.
— *nudiflorus*. 2. Purple. August. Switzerland. 1817. Syn., *Cirsium nudiflorum*.
— *ochroleucus*. 2. Pale yellow. July. Switzerland. 1801. Syn., *Cirsium ochroleucum*.
— *oleraceus*. 3. Pale yellow. July. Europe. 1570. Syn., *Cirsium oleraceum*.
— *orygale*. 6. Purple. July. 1823. Syn., *Cirsium orygale*.
— *paludosus*. 3. Purple. July. Switzerland. 1819. Syn., *Cirsium paludosum*.
— *palustris*. 3. Crimson. July. Britain. Syn., *Cirsium Forsteri*.
— *pannonicus*. 3. Purple. August. Siberia. 1752. Syn., *Carduus pannonicus*, *C. serratuloides*, *Cirsium serratuloides*, and *Serratula pannonica*.
— *parviflorus*. 2. Purple. July. South of Europe. 1781. Syn., *Carduus parviflorus*.
— *polyanthemus*. 6. Purple. August. 1823. Syn., *Carduus polyanthemus* and *Cirsium polyanthemum*.
— *rhizocephalus*. Pale yellow. Caucasus. 1836.
— *rigens*. 2. Yellow. July. Switzerland. 1775. Syn., *Cirsium rigens*.
— *rivularis*. 3. White. July. Hungary. 1804. Syn., *Cirsium rivulare*.
— *rufescens*. 3. White. July. Pyrenees. 1816. Syn., *Cirsium rufescens*.
— *Salisburgensis*. 3. Purple. July. Europe. 1816. Syn., *Cirsium Salisburgense*.
— *semidecurrans*. Syn., *Carduus paniculatus*.
— *serrulatus*. 4. Purple. July. Tauria. 1819. Syn., *Cirsium serrulatum*.

- C. spinosissimus*. 3. Pale yellow. July. Switzerland. 1759. Syn., *Cirsium spinosissimum*.
 — *strictus*. 2. Purple. August. Naples. 1819. Syn., *Cirsium strictum*.
 — *syriacus*. 2. Purple. July. Levant. 1771. Syn., *Cirsium syriacum*. Annual.
 — *tuberosus*. 3. Purple. July. England. Syn., *Cirsium tuberosum*.
 — *uliginosus*. 3. Purple. June. Caucasus. 1820. Syn., *Cirsium uliginosum*.

Coal. See **Fuel**.

Coal-ashes. See **Ashes**.

Cobæ'a. (Named after *M. Cobo*, a Spanish botanist. Nat. ord., *Polemoniaceæ*.)

Half-hardy evergreen climbers. Cuttings of firm side shoots, in summer; but best from seeds sown in a hotbed, 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. macrostema*. 20. Green, yellow. October. Guayaquil. 1839. B. M. t. 3780.
 — *penduliflora*. Green. December. Mountains of Caraccas. 1868. B. M. t. 5757.
 — *scandens*. 20. Purple. August. Mexico. 1792. B. M. t. 851.
 — *albo-marginata*. Purple; leaves white-margined. Fl. Ser. t. 1467.
 — *stipularis*. 20. Yellow. October. Mexico. 1839. B. R. 1841, t. 25.

Cobu'rgia. (Named after *Prince Leopold of Saxe-Coburg*, afterwards King of Belgium. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllidææ*.) This is now regarded as a section of *Stenomesson*, from which it differs in its more robust habit.

Handsome half-hardy flowering-bulbs, which delight in strong, rich loam, and will grow on a warm, sunny border, in summer; to be taken up on the approach of frost, and kept dry over the winter. Propagated by offsets.

- C. acuta*. See *Stenomesson incarnatum*, var. *acutum*.
 — *coccinea*. B. M. t. 3865. See *Stenomesson coccineum*.
 — *fulva*. 1. Tawny. S. Amer. 1829. B. M. t. 3221.
 — *humilis*. B. R. 1842, t. 46. See *Stenomesson humile*.
 — *incarnata*. Swt. Fl. Gard. ser. 2, t. 17. See *Stenomesson incarnatum*.
 — *minuta*. 3. Vermilion. April. Peru. 1842.
 — *stylisa*. Orange, red. March. Quito. 1847.
 — *trichroma*. 1. Scarlet, yellow, green. June. Andes. 1837. B. M. t. 3807.
 — *versicolor*. 2. Red, white, green. June. Lima. 1840.

C. chacapoyensis, *fulva*, *laeta*, *langensis*, *splendens*, Ill. Hort. n. s. t. 285, *trichroma*, *variegata*, and *versicolor*, are regarded by Mr. J. G. Baker, who has monographed this order as mere forms of *Stenomesson incarnatum* differing in size and colour of the flowers.

Coccinellæ. 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 aphid. This is much better appreciated on the Continent than in England; for there

the gardeners collect lady-birds, and place them upon rose-trees, etc., infected with aphides.

Coccocypselum. (From *kokkos*, fruit, and *kypsele*, a vase; referring to the form of the berries. Nat. ord., *Rubiaceæ*; Tribe, *Mussaendææ*.)

Stove soft-wooded plants, of a trailing habit. Cuttings and seeds. Loam and fibry peat with a little sand. Cuttings and seeds.

- C. buxifolium*. See *Fernelia buxifolia*.
 — *campanuliflorum*. †. Blue. July. Brazil. 1825. Syns., *Hedyotis campanuliflora*. B. M. t. 2840, and *Lipostoma campanuliflora*.
 — *cordifolium*. White, lilac. Guatemala.
 — *discolor*. Berries blue. 1882.
 — *metallicum*. White; leaves metallic lustre. Guiana. 1866.
 — *repens*. Purple. W. Indies, Belg. Hort. 1860, p. 13.
 — *Tontanea*. White; berries blue and pretty. Guiana.

Coccoloba. Sea-side Grape. (From *kokkos*, a berry, and *lobos*, a lobe; in reference to the fruit. Nat. ord., *Polygonaceæ*; Tribe, *Coccolobææ*.)

Stove evergreen trees. Cuttings of young, firm shoots, in spring or summer, in sand, under a bell-glass, and in bottom-heat. Summer temp., 60° to 80°; winter, 50° to 55°.

- C. acuminata*. 20. White, green. New Grenada. 1820.
 — *coronata*. 15. White, green. Jamaica. 1820. Syn. *C. punctata*.
 — *excoarata*. 80. White, green. W. Ind. 1733.
 — *fagifolia*. 5. Pale green. Caraccas. Jacq. H. Schœnb. t. 352.
 — *flavescens*. 15. White. St. Domingo. 1820.
 — *laurifolia*. 20. White, green. August. Caraccas. 1822. Jacq. H. Schœnb. t. 267.
 — *longifolia*. 30. White, green. W. Ind. 1810.
 — *macrophylla*. B. M. t. 4536. See *C. rugosa*.
 — *microrostachya*. 16. White, green. St. Thomas. W. Ind. 1824.
 — *niuea*. 20. White, green. Jamaica. 1818.
 — *nymphææifolia*. Brazil. 1858.
 — *obovata*. 50. White, green. S. Amer. 1824.
 — *obtusifolia*. 20. White, green. Carthage. 1822.
 — *orbicularis*. 15. White, green. S. Amer. 1825.
 — *platyclada*. See *Muehlenbeckia*.
 — *pube'scens*. White, green. W. Indies. 1690. B. M. t. 3166.
 — *punctata*. See *C. coronata*.
 — *rugosa*. 30. Scarlet. July. S. Amer. Syn., *C. macrophylla*.
 — *tenuifolia*. 30. White, green. Jamaica. 1820.
 — *uvifera*. 60. White, green. W. Indies. 1690. B. M. t. 3130.
 — *virens*. W. Indies. B. R. t. 1816.

Cocculus. (From *coccus*, cochineal-colour; in reference to the scarlet colour of the fruit. Nat. ord., *Menispermææ*.)

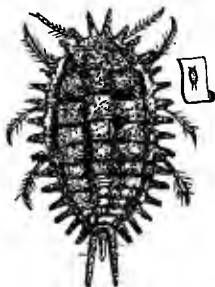
Stove evergreen climbers, from the East Indies, except *C. carolinianus*. The *Cocculus indicus* of the druggists' shops is the berry of *C. Plukenetii* and *suberosus*. Cuttings of half-ripened, small side-shoots, in sandy soil, under a glass; peat and loam, both fibry and sandy. Summer temp., 60° to 68°; winter, 50° to 55°.

- C. carolinianus*. 10. White; berries bright scarlet. June. N. America. 1759. Syn., *Wendlandia populifolia*.

- C. coráifolius*. 20. White, green. 1820. Wight
Icon. tt. 485-6.
— *crispus*. 20. White, green. 1822.
— *incanus*. 10. White, green. 1820.
— *laurifolius*. 10. White, green. 1816.
— *orbiculatus*. 6. Green, yellow. 1790.
— *palmaris*. 10. White, green. 1800. B. M.
tt. 2970-1.
— *Plukenetii*. 10. Green, yellow. 1790.
— *rotundifolius*. 20. White, green. 1820.
— *suberosus*. 20. White, green. 1800.
— *tomentosus*. 10. White, green. 1819.
— *villosus*. 6. Green, yellow. 1800.

Co'ccus. 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.

C. ado'nidum. 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 sedu-



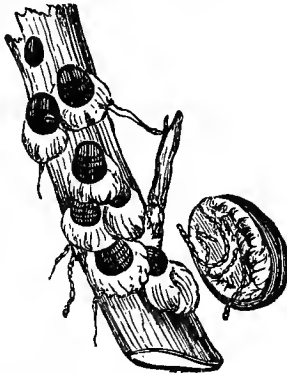
lously with a hard brush, and then with a painter's brush as thoroughly painted over with this mixture:—Soft soap, 2 lbs.; flowers of sulphur, 2 lbs.; tobacco, 1 lb.; and a wine-glass of spirit of tur-

pentine. 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. Our drawing represents a female magnified, and of its natural size. It 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 grapevine, 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*, characterized by the female having a scale inseparable from her body. While young, both sexes are alike; but the male larvæ produces two-winged insects, with two tail threads. The females have no wings; and their dead bodies, beneath which the young are sheltered, appear as in the annexed woodcut.

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 $\frac{1}{2}$ lb. of soft soap, 1 lb. of sulphur, and $\frac{1}{4}$ 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.—*Gard. Chron.*, 1842, p. 840.



C. hesperidum is found in greenhouses, especially on orange trees. It infests leaves as well as stems.

C. brome'lieæ, Pine-apple Scale, infests that fruit, also *Hibi'scus*, *Justi'cia*, etc.

C. testu'do, 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. ne'rii, Oleander Scale, is found in our stoves and greenhouses, chiefly on the Oleanders, Palms, Aloes, and Acacias.

A. ro'sæ, Rose Scale; *A. echinoca'cti*, Cactus Scale; *A. lau'ri*, Sweet-Bay Scale; infest chiefly the plants by the names of which they are distinguished.

A. ostreafo'rmitis, Pear-tree Oyster Scale, is found upon the pear-tree.

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 kind is described on p. 80.

Cochlea'ria. Scurvy-grass. (From *cochlear*, a spoon; in reference to the concave leaves. Nat. ord., *Crucifere*; Tribe, *Alyssineæ*.)

Seeds, divisions, and cuttings, the first in the open border. They are of little ornamental interest. *C. armora'cea* is well known as horse-radish.

- C. acari'lis*. Lilac. April. Portugal. 1845.
 — *armora'cea*. 3. White. May. England. Eng. Bot. ed. 3, t. 130.
 — *groenla'ndica*. See *C. officinalis*, var. *alpina*.
 — *integrifo'lia*. White. May. Siberia. 1822.
 — *officina'lis*. 3. White. May. Britain. Scurvy-grass. Eng. Bot. ed. 3, t. 130.
 — *alpina*. 1. White. May. Scotch mountains. Syn., *C. groenlandica*.
 — *pyrena'ica*. 1. White. April. Pyrenees. 1820. See HORSE-RADISH and SCURVY-GRASS.

Cochlioste'ma. (From *kochlion*, spiral, and *stema*, a stamen. Nat. ord., *Commelinaceæ*.)

Stove perennials, allied to *TRADESCANTIA*. Rich, light loam, with a little peat. Division in the spring. Abundance of seeds may be produced by artificial fertilization; the anthers containing pollen will be found *inside* the large stamen-like organ in the centre of the flower; apply the pollen to the stigmas of other flowers, and fertilization will result. When the seeds are ripe they should be sown at once, in a hotbed.

- C. Jacobia'num*. 1½. Blue; bracts and flower stem pale rose. May. Ecuador. 1867. B. M. t. 5705. Closely allied to *C. odoratissimum*.
 — *odoratissimum*. 1½. Blue; bracts and flower stem pale rose. 1859. Ill. Hort. t. 217.

Cochlospe'rmum. (From *cochlo*, to twist, and *sperma*, seeds. Nat. ord., *Bixineæ*; Tribe, *Bixaeæ*.)

Stove evergreen trees. Cuttings of ripe shoots in April, in sand, in bottom-heat; peat and loam.

- C. gossypium*. 60. Yellow. May. E. Ind. 1824.
 — *hibiscoides*. 60. Yellow. Mexico. 1820. Syn., *C. serratifolium*.

Cockchafer. See *Melolontha*.

Cockscomb. See *Celo'sia*. *Rhinanthus cristaga'lli* and *Erythrina cristaga'lli* are also so called Cockscombs.

Cockspur Thorn. *Crata'geus cristaga'lli*.

Cocoa-nut Fibre Dust. This is one of the most useful helps to the plant-grower, and is of rather recent introduction, owing chiefly to the experiments reported by Mr. Beaton and others in the *Journal of Horticulture*. When bought it will be found a mixture of hair-like fibres and reddish-brown dust, like mahogany saw-dust. It is this dust which is excellent as a general manure; as a soil for ferns; to render tenacious soil more porous, and light soil more retentive of moisture. It is excellent to strike cuttings in, and is a substitute for peat. Ferns thrive in it especially

well. The hair-like fibres do good service instead of moss for putting over the crocks used for pot-drainage, and thus preventing the soil clogging the drainage. As a manure, three bushels may be put upon thirty square yards. It is a very lasting manure, decaying very slowly. Terrestrial orchids thrive in it, and indeed all potted plants. It is now largely used as a plunging material.

Cocoa-nut-tree. *Co'cos.*

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., *Palmeæ*; Tribe, *Cocoinæ*.)

Seeds in hotbed, in spring; rich, loamy soil, somewhat shaded.

C. aculea'ta. See *Acrocomia sclerocarpa.*

— *austral'is.* 50. Paraguay. 1849. Rev. Hort. 1876, p. 156.

— *botryo'phora.* 50. Yellow. Bahia. Mart. Palm. t. 83. Syn., *Syagrus botryophora.*

— *butyra'cea.* New Grenada. 1850.

— *capita'ta.* 12. Brazil.

— *como'sa.* See *Syagrus comosa.*

— *corona'ta.* 60. Brazil. 1836.

— *Da'til.* 30. Argentine. 1839.

— *eriospa'tha.* S. Brazil. Syn., *C. Blumenavi.*

— *flexuo'sa.* 50. Brazil. 1825. Mart. Palm. tt. 64 and 86.

— *fusifo'rnis.* A synonym of *Acrocomia sclerocarpa.*

— *lapi'dea.* Brazil. 1847.

— *mal'di'vica.* See *Lodoicea sechellarum.*

— *Mikania'na.* Brazil. 1853. Syn., *Syagrus Mikania'na.*

— *nuci'fera.* 50. Pale green. E. Indies. Mart. Palm. tt. 62, 75, 88.

— *olera'cea.* 80. Brazil. 1846.

— *petra'ca.* 4. Andes of Bolivia. 1839.

— *plumo'sa.* 50. Pale green. Brazil. 1825. B. M. t. 5180.

— *Romanzoffia'na.* Brazil.

— *schizophyl'la.* 8. Brazil. 1846.

— *Walli'sii.* Brazil. 1870.

— *syagr'us.* 20. Brazil. 1824. Syn., *Syagrus cocoides.*

— *sylvestris.* Hort.

— *Weddellia'na.* 1-4. S. America. Syns., *C. elegantissima*, *Glazovia elegantissima*, and *Leopoldina pulchra.*

Codiæ'um. (From *Codebo*, the Malayan name for *C. variegatum*. Nat. ord., *Euphorbiaceæ*.)

For ornamental foliage, there are few genera that can compare with this; the marvellous variation both in the form and colour of the leaves seems to be without limit. Under the name of CROTON, nurserymen have introduced a large number of forms, and it is under that name, rather than the correct one of CODLÆUM, that they are generally known; the two genera are perfectly distinct, and belong to two different sections of the natural order. All the plants enumerated in the list below, although wonderfully different from each other in general appearance, are, in all probability, merely varieties of two or three species.—Stove evergreen shrubs. Seeds, cuttings, in a bottom-heat of about 80°, and under a bell-glass or small frame;

when growing they require frequent pinching in, to make nice bushy plants of them. Rich sandy loam and a little peat, or leaf-mould.

Besides the forms here enumerated there are numerous garden hybrids, of which that known in gardens as *Croton Baronne James de Rothschild* is one of the handsomest.

C. appendicula'tum. Leaves with a terminal lobe on a thread-like continuation of the midrib. Polynesia. 1875.

— *aucubayo'litum.* Leaves green, with yellow and crimson blotches. Polynesia. 1868.

— *au'reo-lined'tum.* Leaves green, with the margins and a line from the midrib yellow. Fiji. 1878.

— *au'reo-marmora'tum.*

— *au'reo-puncta'tum.*

— *Austinia'num.*

— *Bergma'ni.*

— *Bisma'rcki.* Leaves deep green, with yellow veins and blotches. Polynesia. 1876.

— *Bragae'num.*

— *Broomfi'e'dii.*

— *cauda'tum-to'rtille.*

— *cheiso'ni.* Leaves salmony-orange and crimson. New Guinea. 1879.

— *chryso'phy'llum.* Leaves small, more or less yellow. Polynesia. 1875.

— *contor'tus.*

— *Coop'e'ri.* Leaves with yellow veins and blotches, changing to red. Polynesia. 1874.

— *corni'gerum.* Leaves banded with orange. Polynesia. 1873.

— *cornu'tum.* Polynesia. 1870.

— *cro'e'sus.*

— *Cronsta'dii.*

— *Disrae'tii.* Leaves three-lobed, veins yellow. Polynesia. 1875.

— *Dodgso'næ.* Leaves bright green, with a central golden stripe.

— *ebu'rnetum.* Leaves deep green, midrib and bases of secondary veins creamy-white.

— *e'legans.* India. 1861.

— *elegant'i'ssimum.*

— *e'minens.*

— *Evansia'num.* Leaves olive-green, with yellow veins, changing to bronzy-crimson and scarlet. Polynesia. 1879.

— *excu'rrens.*

— *Ey'rei.*

— *formo'sum.*

— *fusa'tum.* Leaves blotched with yellow. Polynesia.

— *glorio'sum.* Leaves green, marbled with creamy-yellow. New Hebrides. 1878.

— *Goedenov'ghtii.* Leaves clear green, with yellow variegation. Santa Cruz Isles. 1876.

— *gra'nde.* Leaves deep green, midrib and some scattered spots yellow. Polynesia.

— *Hawke'ri.* Leaves whitish, with green tips. Polynesia. 1879.

— *Hookeria'num.* Leaves green, with central yellow band. Erromango. 1869.

— *Hillea'num.* Leaves purplish-green, with red veins. Polynesia. 1868.

— *illu'stre.* Leaves deeply three-lobed, green, spotted with golden-yellow.

— *imperia'le.* Leaves twisted, with yellow margins and blotches, changing to crimson. New Hebrides. 1875.

— *insig'ne.* Leaves green, variegated with yellow and crimson.

— *interru'ptum.* Leaves interrupted, purplish-green. Polynesia. 1868.

— *irregula're.* Leaves green, with yellow blotches. Polynesia. 1868.

— *Joha'nnis.* Leaves green, the centre and margins yellow. Polynesia. 1871.

— *Kingia'num.*

— *la'ctæum.* Leaves veined and blotched with cream colour. Polynesia.

- C. limbatum*. Leaves spotted and margined with yellow. E. Indies. 1873.
- *lined're*.
- *maculatum Kato'ni*. Leaves bright green, with round yellow spots. Polynesia. 1878.
- *magniflum*.
- *maje'sticum*. Young leaves deep green, with yellow venation, changing to olive and crimson. Polynesia. 1876.
- *ma'ximum*. Leaves green, with yellow blotches and veins. Polynesia. 1868.
- *mira'bile*.
- *multi'color*. Leaves contracted at the middle and twisted above, variously coloured. Polynesia. 1871.
- *multifo'rme*.
- *mus'icum*.
- *nuta'bile*. See *C. princeps*.
- *Nev'ille*. Leaves olive-green, barred with yellow. Polynesia. 1880.
- *orna'tum*.
- *ovalifo'lum*. Midrib and veins golden-yellow. Polynesia.
- *pictura'tum*. Leaves blotched with yellow and red. New Hebrides. 1876.
- *pilgr'i'ni*. Leaves pale green, marked with gold, and flushed with pink.
- *pr'i'nceps*. Leaves at first green, blotched with yellow, afterwards bronzy and crimson. New Hebrides. 1878. Syn., *C. mutabile*.
- *recurva'tum*.
- *recurvifo'lum*. Leaves olive-green; veins crimson, bordered with yellow.
- *regi'na*. Leaves olive-green, marked with yellow, orange, and crimson. Polynesia. 1878.
- *Rodeckia'num*.
- *ruber'rimum*.
- *rube'scens*.
- *ru'bro-lined'tum*.
- *se'ptrum*.
- *specta'bile*.
- *spira'le*. Leaves twisted, bronzy-green, with yellow and red variegation. Polynesia. 1873.
- *sple'ndidum*. New Hebrides. 1876.
- *Stewa'rtii*. Leaves olive-green, banded and margined with orange; midrib red. New Guinea. 1880.
- *super'biens*. Leaves green, clouded with yellow, afterwards bronzy-green and coppery with crimson veins. New Guinea. 1878.
- *torqua'tum*. Leaves broken up into chain-like segments, green, with yellow spots changing to red. Polynesia. 1878.
- *tri'color*. Leaves green, with the central part yellow, reddish beneath. Polynesia. 1868.
- *trilo'bium*. Leaves three-lobed, blotched with yellow. Polynesia. 1875.
- *triu'mphans*. Leaves green, the veins bordered with yellow. New Hebrides. 1878.
- *Van Oosté'rzeet*.
- *Ve'i'chii*. Leaves green, with pink margins and veins. Polynesia. 1868.
- *vitta'tum*.
- *volu'tum*. Leaves with golden venation, rolled back at the tip. Polynesia. 1874.
- *Warre'ni*. Leaves long and twisted, mottled with orange and carmine. Polynesia. 1880.
- *Weisma'nni*. Leaves dark green, margins and veins golden yellow. Polynesia. 1868.
- *Wils'o'ni*. Leaves suffused with yellow. New Guinea. 1880.
- *You'ngii*. Leaves dark green, with creamy and rosy variegation. Polynesia. 1873.

Codlin Moth. See *Carpocapsa pomonella*.

Codlins and Cream. *Epilo'bium hirsu'tum*.

Codona'nthe. (From *kodon*, a bell, and *anthos*, flower; the tube of the corolla is bell-shaped. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandrea*.)

Stove trailer. For cultivation, see *GESNERA*.

C. gracilis. White. June. Brazil. 1850. Syn. *Hypocyrtia gracilis*. B. M. t. 4531.

Codono'psis. (From *kodon*, a bell, and *opsis*, like; being the shape of the flowers. Nat. ord., *Campanulaceæ*; Tribe, *Campanuleæ*.)

For cultivation, see *ROELLA*.

C. corda'ta. B. M. t. 5372. See *Campanumæa javanica*.

— *ova'ta*. 1-3. Pale blue. Himalayas. G. C. 1886, p. 468. Syn., *Glossocoma ovata*. Half-hardy herbaceous.

— *rotundifo'lia*. Yellowish green with purple veins. Himalayas. B. M. t. 4942.

— *grandiflo'ra*. Greenish. July. Himalayas. 1857. B. M. t. 5018.

Cœlebo'gyne. (From *cœlebs*, unmarried, and *gyne*, female. Nat. ord., *Euphorbiaceæ*; Tribe, *Crotonæ*.)

Greenhouse shrub. Seeds and cuttings. This most singular plant has, for many years, in Kew Gardens, produced perfect seeds without any source from whence pollen could be derived.

C. ilicifo'lia. 4. Green. Moreton Bay. 1829. Linn. Trans. xviii. t. 36. Syn., *Alchornea ilicifolia*.

Cœlesti'na is now merged into *Ageratum*.

C. agerato'ides and *micra'ntha* are synonyms of *Ageratum cœlestinum*, and *C. cœrula* and *corymbosa* of *A. corymbosum*.

Cœ'lia. (The derivation not explained. Nat. ord., *Orchideæ*; Tribe, *Epidendrea*—*Eriæ*. Allied to *Eria* and *Spathoglottis*.)

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. White. June. Jamaica. 1790 B. R. 1842. t. 36.

— *bella*. 1. White, tipped purple, yellow. Mexico. B. M. t. 6628. Syn., *Bifrenaria bella*.

— *macrosta'chya*. Red. February. Guatemala. 1840. B. M. t. 4712.

Cœlio'psis. (Compounded from *Cœlio*, and *opsis*, resemblance; resembling a *Cœlia*. Nat. ord., *Orchideæ*.)

Stove epiphyte. For cultivation, see *ORCHIDS*

C. hyacintho'sma. White, orange, crimson. Panama. 1871.

Cœlo'gyne. (From *koilos*, hollow, and *gyne*, female; in reference to the female organ, or pistil. Nat. ord., *Orchideæ*; Tribe, *Epidendrea*.)

To cultivate this genus successfully, divide it into two sections.—The first, *C. barba'ta*, cris-

ta'ta, *Cumi'ngii*, *ela'ta*, *fuliginosa*, *ocella'ta*, *speciosa*, and some other new species from Borneo not yet bloomed in this country. The second section, *C. Gardneriana*, *maculata*, *præcox*, and *Wallichiana*.

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. Gardneriana*, 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 *Cœlogyne* on a shelf near the glass, in a cool stove. Whilst growing, freely water—till the leaves are considerably grown moderately, 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. Arthuriana*. British Burmah. 1881.
asperata. 1. Cream-coloured. May. Borneo.
barbata. White, yellow. December. Khasia. 1827.
biflora. White, brown. Moulmein. 1866.
birmanica. Burmah. Syn., *Pleione birmanica*.
brachyptera. Burmah. 1881.
brunnea. A variety of *C. fuscescens*.
chloroptera. Philippine Islands.
confertiflora. White, yellow. India. 1875.
corniculata. Yellow, fragrant. Assam. 1865.
 See ERIA.
corrugata. White, yellow. India. 1866.
coronaria. Yellowish. Khasia. 1837.
corymbosa. White, orange. India. 1876.
heteroglossa. India. 1878.
cristata. White, yellow. Nepaul. 1837.
alba. Pure white. Lind. t. 173.
hololeuca. 1881.
maxima. Large flowered variety. Rchb. t. 6.
Cumi'ngii. 2. Creamy-white, yellow. June. Singapore. 1840.
Dayana. Ochre, dark brown. Borneo.
decora. White. March. India. 1837.
elata. White, yellow. Khasia. 1837.

- C. fimbriata*. 1. White, brown. September. Nepaul.
flaccida. 1. White. January. Nepaul.
flavida. Yellow. April. India. 1838.
Fœstermanni. White, marked with yellowish-brown. Sunda Islands.
fuliginosa. Cream, brown. June. Khasia. 1837.
fuscescens. Greenish yellow.
brunnea. Moulmein. 1865.
Gardneriana. 1. White, yellow. November. Khasia. 1837.
glandulosa. Nilgherries. 1852.
Gowwri. White, yellow, red. Assam. 1869.
graminifolia. 1½. White, brown, yellow. Burmah. 1888. B. M. t. 7006.
Hookeriana. ¾. Rose-purple, white, brown, yellow. May. Sikkim. 1878.
brachygloussa. Pale rose, light yellow spotted with reddish-brown; lip white. Himalayas. 1837.
humilis.
alba. White, orange. 1888.
tricolor. Lip marbled with brown. March. 1880.
intermedia. E. Ind. 1840.
interrupta. White. Khasia. 1837.
laetea. Creamy-white; lip ochre, brown, yellow. Burmah. 1888.
lagenaria. White, light and dark purple, yellow. Khasia. 1856.
lentiginosa. Green, white, yellow. Moulmein. 1872.
longicaulis. White, yellow. Khasia. 1837.
Lo'wit. Buff and brown. Borneo. 1848.
virginæa. Bulbs pale green; lip light sulphur, unspotted. 1837.
Massongiana. Pale yellow, brown. Assam. 1879.
Mayeriana. Green, with blackish marks. 1890.
meadia. White, yellow. Khasia. 1837.
maculata. White, crimson. Khasia. 1837.
mierantha. Brown. Maylay Islands. 1855.
nigræscens. Blackish. March. India. 1838.
nitida. 1. Yellow. E. Ind. 1822.
ocellata. White, yellow. E. Ind. 1822.
Boddartianna. 1882.
maxima. 1879.
ochracea. ¾. White, yellow. April. E. Ind. 1844.
odoratissima. White. India. 1864.
ovalis. White, brown. October.
pandurata. 1½. Green. December. Borneo. 1853.
Pari'skii. Yellow, brown. Moulmein. 1862.
pellata. Yellow, white, brown. Borneo. 1880.
plantaginea. 1½. Green. East Indies. 1852.
præcox. ¾. Rose, white. October. Nepaul. 1845.
tenera. 1883.
prolifera. Yellowish. Khasia. 1837.
psittacina.
Hutt'ni. Green, white, brown. Amboyna.
punctulata. Yellow. October. Nepaul. 1822.
Reichenbachiana. Rosy, white, purple. Moulmein. 1868.
Rhodesia. White, brown. Moluccas. 1867. Fragrant.
rigida. Yellow. Khasia. 1837.
Rossiana. Burmah. 1884.
salmonicolor. Java or Sumatra. 1883.
Sanderiana. 1. White, yellow, three brown stripes. Sunda Islands. 1837.
Schilleriana. ¾. Yellow, blood-red. June. Moulmein. 1858. Syn., *Pleione Schilleriana*.
sparsa. Philippine Islands
speciosa. ¾. Brown, white. September. Java. 1845.

- C. stella'ris*. Green, lip white. Borneo.
 — *sulphu'rea*. Yellowish, white. Java. 1871.
 — *testa'cca*. Brown. May. Singapore. 1842.
 — *tri'fida*. White. Burmah. 1865.
 — *trine'rvia*. White, yellow. February. Singapore.
 — *trisacca'ta*. White. E. Indies. 1851.
 — *undula'ta*. White. Khasia. 1837.
 — *visco'sa*. White, brown. India. 1870.
 — *Wallichia'na*. Rose, white. November. Khasia. 1837.

Coffe'a. Coffee-tree. (From *Coffea*, the name of a province of Narea, in Africa. Nat. ord., *Rubiaceæ*; Tribe, *Ixoreæ*.)

Stove evergreen shrubs. Cuttings of ripe shoots in sand, under a bell-glass, in moist heat; peat and loam. Summer temp., 60° to 85°; winter, 55° to 60°.

- C. ara'bica*. 20. White. September. Yemen. 1696. B. M. t. 1303.
 — *bengale'nsis*. White. Silhet. B. M. t. 4917.
 — *libi'rica*. White. Liberia. 1874.
 — *panicula'ta*. 8. White. Guiana. 1822.
 — *travancore'nsis*. 3-6. White. August. S. India and Ceylon. B. M. t. 6749.

Cogwood-tree. *Lan'rus chloro'xy-lon*.

Co'ix. Job's tears. (Adopted name from Theophrastus. Nat. ord., *Gramineæ*. Allied to Indian Corn.)

Stove perennial grasses. Seeds; divisions; rich, light soil. Summer temp., 60° to 80°; winter, 50° to 55°.

- C. arundina'cea*. 2. July. Mexico. 1818.
 — *la'chryma*. 2. June. E. Ind. 1596. B. M. t. 2479.

Coke. See **Fuel**.

Co'la. (From the native name *Cola* or *Kola*. Nat. ord., *Sterculiaceæ*.)

Stove trees or shrubs. The seeds of *C. acuminata* are known in tropical Africa as the *Cola*, or *Kola* nut; they are esteemed by the natives for their bitter flavour, and are used as a tonic, a portion of a nut being eaten before each meal. The seeds are about as large as a pigeon's egg. Seeds, ripened cuttings in sand, under a hand-glass, and in bottom-heat. Rich light loam, or loam and peat. Summer temp., 70° to 85°; winter, 60° to 70°.

- C. acuminata*. 40. Yellow. January. Tropical Africa. 1868. B. M. t. 5699.

Co'lax. We unite this with **Ly-caste**.

Colbe'rtia. See **Dillenia**.

- C. coromandeliana*. See *Dillenia pentagyna*.

Colchicum. Meadow Saffron. (Named after *Colchis*, its native country, in Asia Minor. Nat. ord., *Liliaceæ*; Tribe, *Colchiceæ*.)

C. autumnale, a gout medicine, is a virulent poison. Hardy herbaceous bulbs. Offsets, planted in common border.

- C. agrippi'num*. $\frac{1}{2}$. Purple. August. South Europe. 1600. Syn., *C. tessellatum*.
 — *atpi'num*. $\frac{1}{2}$. Purple. July. Apennines. 1820. Rehb. Ic. f. 946-8.
 — *arena'rium*. $\frac{1}{2}$. Purple. September. Hungary. 1816. Rehb. Ic. f. 944-5.
 — *autumnale*. 1. Purple. September. Britain.

Common meadow saffron. Réd. Lil. t. 228.

- C. autumnale a'lbum*. $\frac{1}{2}$. White. September. Britain.
 — *a'tro-purpu'reum*. $\frac{1}{2}$. Dark purple. September. Britain.
 — *fo'ltis-variega'tis*. $\frac{1}{2}$. Purple. September. Britain.
 — *flo-re-ple'no*. $\frac{1}{2}$. Purple. September. Britain.
 — *panno'nicum*. Transylvania. Syn., *C. polyanthos*.
 — *purpu'reo-stria'tum*. $\frac{1}{2}$. Purple-striped. September. Britain.
 — *stria'tum-ple'no*. $\frac{1}{2}$. Lilac-striped. September. Britain.
 — *Bivo'na*. Sicilia. Syn., *C. neapolitanum*, var. *frutillaricum*.
 — *byzanti'num*. $\frac{1}{2}$. Purple. September. Levant. 1629. Gff. t. 755. Syns., *C. floribundum* and *C. autumnale*, var. *latifolium*. Réd. Lil. t. 468.
 — *cauca'sicum*. See *Merendera caucasica*, B. M. t. 2690.
 — *chione'nsis*. See *C. variegatum*.
 — *croci'rum*. B. M. t. 2673. A form of *C. autumnale*.
 — *hi'teum*. Yellow. Spring. Himalaya. 1874. B. M. t. 6153.
 — *monta'num*. $\frac{1}{2}$. Purple. August. Mediterranean region. 1819. Rehb. Ic. t. 940-3.
 — *Parkins'o'ni*. White, tessellated with purple. Greek Archipelago. 1874. B. M. t. 6090. Perhaps a form of *C. variegatum*.
 — *pa'rulium*. Pale lilac. Italy and Greece. 1884.
 — *procu'rrens*. Bright lilac. October. Smyrna. 1890. Syn., *Merendera sobolifera*.
 — *Sibtho'rpia*. Tessellated with lilac-purple. October. Armenia. Syn., *C. latifolium*.
 — *speci'o'sum*. $\frac{1}{2}$ to 1. Light purple. Caucasus. 1874. B. M. t. 6078.
 — *tessella'tum*. See *C. agrippinum*.
 — *Troc'o'dii*. White. Autumn. Cyprus. 1887. B. M. t. 6901.
 — *umbro'sum*. $\frac{1}{2}$. Pink. September. Guinea. 1819.
 — *variega'tum*. $\frac{1}{2}$. Purple. September. Greece. 1629. Syn., *C. chionense*.
 — *vers'i'color*. B. R. t. 571. See *Bulbocodium vernum*, var. *versicolor*.

Colde'nia. (Named after *C. Colden*, a North American botanist. Nat. ord., *Boraginæ*; Tribe, *Ehreticeæ*. Allied to the Heliotrope.)

Stove trailing annual. Seeds sown in a hot-bed, in March, and flowers in the greenhouse, in summer. Light, rich soil.

- C. procu'mbens*. 2. White. July. E. Ind. 1699.

Co'lea. (Named after *General Cole*, Governor of the Mauritius. Nat. ord., *Bignoniaceæ*; Tribe, *Jacarandææ*. Allied to the Calabash-tree.)

Stove evergreen shrubs. Cuttings of ripe shoots in sand, under a glass, and in moist bottom-heat; peat and loam, both fibry, and mixed with a little sand and charcoal. Summer temp., 60° to 80°; winter, 48° to 55°.

- C. floribu'nda*. 8. Yellow. August. Madagascar. 1839. B. R. 1841, t. 19.
 — *undula'ta*. Lilac, yellow. Summer. Madagascar. 1870. Gff. t. 669. Syn., *C. Com-mersonii*.

Colebroo'kia. (Named after *H. F. Colebrook*, a botanist. Nat. ord., *Labiataæ*; Tribe, *Satureiææ*. Allied to Mint.)

Greenhouse evergreen shrubs. Cuttings of half-ripe shoots, in April or May; sandy peat and fibry loam. Winter temp., 40° to 45°.

C. oppositifolia. 3. White. Nepaul. 1820. B. C. t. 487.

— *ternifolia*. 3. White. E. Ind. 1823.

Colenso'a. (Named after the *Rev. William Colenso*, a most enthusiastic New Zealand botanist. Nat. ord., *Campanulaceæ*; Tribe, *Lobeliaceæ*.)

Stout herb. Seeds in cool frame.

C. physaloides. 2-3. Pale blue; berry violet. New Zealand. B. M. t. 6864. Syn., *Lobelia physaloides*, Ic. Pl. t. 555.

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., *Rutaceæ*; Tribe, *Diosmeæ*. Allied to *Diosma*.)

Greenhouse evergreen shrubs, from Cape of Good Hope. Cuttings of young shoots, getting firm at the base, in sand, under a bell-glass; peat one part, loam two parts, with sand, to keep it open. Winter temp., 40° to 45°.

C. album. 2. White. June. Cape Town district. 1798.

— *pulchrum*. 6. Rose. May. B. M. t. 3340.

— *tenuifolium*. Synonymous with *C. pulchrum*.

Coleoptera. Beetles.

Colesat, or Coleseed. *Bra'ssica campestris oleifera*.

Coleus. (From *koleos*, a sheath; referring to the way that the bottom of the stamens, or anther-threads, are combined. Nat. ord., *Labiatae*; Tribe, *Ocimoideæ*. Allied to *Plectranthus*.)

Evergreen shrubs. Cuttings in sand, in heat. Loam and peat. Summer temp. for the stove species, 60° to 80°; winter, 50° to 55°; for the other, common greenhouse temperatures.

C. aromaticus. 2. Violet. May. India. 1826.

Stove. B. R. t. 1520. Syn., *C. amboinicus*.

— *barbatum*. 3. Blue. October. Abyssinia. 1806. Stove. Maund Bot. t. 159.

— *Blumei*. 1½. Purple and white. June. Java. B. M. t. 4754.

— *Verschaffeltii*. Hybrid? Ill. Hort. 1861, t. 293. Another variety of this species has been figured in Ill. Hort. 1888, t. 46, under the name of *C. gloire de Dijon*.

— *Colvillei*. See *Plectranthus coleoides*.

— *fruticosus*. 3. Blue. July. Cape of Good Hope. 1774.

— *Gibsoni*. Leaves veined and blotched crimson-purple. New Caledonia. 1866. Flor. Mag. t. 338.

— *inflatum*. Lilac. Ceylon.

— *nigricans*. Indian Archipelago. 1863. Syn., *C. scutellarioides insignis*.

— *Macraei*. 2½. Purple and white. August. Ceylon. 1852. B. M. t. 4690.

— *pictus*. 1½. Leaves variegated with green, yellow, and brown. Duke of York Island. 1877.

— *scutellarioides*. Blue, white. East Indies and North Australia. Syn., *Ocimum scutellarioides*, B. M. 1446. Annual.

— *Tryoni*. Flor. Mag. n. s. t. 34.

— *Veitchei*. Leaves very like *C. Gibsoni*. South Sea Islands. 1867. Flor. Mag. t. 345.

— *Verschaffeltii*. See *C. Blumei*, var. *Verschaffeltii*.

Colewort, or Collett. See **Cabbage**.

Colic-Root. *Aletris farinosa*.

Collabium. (From *collum*, neck, and *labium*, lip; the basal part of the lip encircles the column. Nat. ord., *Orchideæ*; Tribe, *Epidendreae-Dendrobieæ*.)

Stove orchid.

C. simplex. Greenish-yellow, with purple blotches; lip white; column white, with purple base. Borneo. 1881.

Collania. A synonym of **Bomarea**.

Colle'tia. (Named after *M. Collet*, a French botanical writer. Nat. ord., *Rhamnaceæ*; Tribe, *Colletieæ*. Syn., *Retanilla*.)

Stove evergreen shrubs. Cuttings of ripe shoots in sand, under a glass, in spring; sandy loam. Winter temp., 50° to 55°.

C. cruciata. 4. Pale yellow. Chili. 1824. B. M. t. 5033. Syns., *C. bickoniensis* and *ferox*, var. *bickoniensis*, Fl. Ser. t. 1451.

— *e'phedra*. 3. Cream. Chili. 1823. Syn., *Retanilla ephedra*.

— *horrida*. B. M. t. 3644, B. R. t. 1776. See *C. spinosa*.

— *obcordata*. 2. Yellow. Peru. 1822. Syn., *Retanilla obcordata*.

— *serratifolia*. See *Discalea serratifolia*.

— *spino'sa*. 2. Apetal. June. Peru. 1823. Syn., *C. horrida*.

— *ulic'na*. 2. Pale yellow. May. Chili.

Colliflower. See **Cauliflower**.

Collinsia. (Named after *Collins*, a North American naturalist. Nat. ord., *Scrophulariaceæ*; Tribe, *Cheloneæ*.)

Hardy annuals. Seeds in March, in open borders; some in autumn, and slightly protected during winter; or some in a slight hot-bed, in March, and transplanted in patches, in April and May; autumn-sown ones will bloom earliest.

C. bartsefolia. 1. Purple. June. California. B. R. t. 1734, B. M. t. 3488.

— *bicolor*. 2. Purple, white. June. California. 1833.

— *corymbo'sa*. White, blue. Mexico. 1868. Fl. t. 569.

— *grandiflora*. 1. Pink, blue. June. Columbia. 1826. B. R. t. 1107.

— *heterophylla*. 2. Lilac. July. Columbia. 1838. B. M. t. 3695.

— *multicolor*. 1½. Lilac, crimson. May. California. 1852.

— *parviflora*. 1. Purple, blue. June. Columbia. 1826. Trailer. B. R. t. 1082.

— *sparsiflora*. 1. Violet. May. California. 1836.

— *tinctoria*. 1. Pale pink. May. California. 1848.

— *ve'rna*. 1. Purple, blue. June. N. Amer. 1826. B. M. t. 4927.

— *violacea*. White, violet. California. 1871.

Collinsonia. (Named after *P. Collinson*, a great promoter of botany. Nat. ord., *Labiatae*; Tribe, *Satureineæ*. Allied to *Cunila* and *Hyssop*.)

Hardy herbaceous perennials. Division; common soil in moist places.

- C. anisa'ta*. 3. Yellow. October. Carolina. 1806. B. M. t. 1213.
 — *canade'nsis*. 3. Lilac, yellow. September. N. Amer. 1735.
 — *corda'ta*. 3. Lilac, yellow. September. N. Amer. 1734.
 — *ova'ta*. 3. Lilac, yellow. September. N. Amer. 1734.
 — *ova'lis*. Synonymous with *C. canadensis*.
 — *scabri'scula*. 2. Red, yellow. August. East Florida. 1776. Greenhouse.
 — *tubero'sa*. 2. Yellow. August. Carolina. 1806.

Collo'mia. (From *kolla*, glue; referring to the mucus which surrounds the seeds. Nat. ord., *Polemoniaceæ*. Allied to *Gilia*.)

- Hardy annuals. The best is *C. coccine'a*. Seeds in open border; spring or autumn.
C. Cavanille'sii. B. M. t. 3468. See *Gilia glomeriflora*.
 — *coccine'a*. Scarlet. July. Chili. 1832. B. R. t. 1622. Syn., *C. lateritia*, Swt. Fl. Gard. ser. 2, t. 206.
 — *grandiflora*. 2. Pink. July. Columbia. 1826.
 — *gillioi'des*. 1. Pink. August. California. 1833.
 — *glutino'sa*. Red. September. California. 1833.
 — *gracilis*. $\frac{1}{2}$. Rose. June. N. Amer. 1827.
 — *heterophylla*. B. M. t. 2895. See *Navarretia heterophylla*.
 — *lateritia*. See *C. coccine'a*.
 — *linearis*. 1. Red. June. N. Amer. 1826. B. M. t. 2893.

Coloca'sia. (From *kolokasia*, the Greek for the root of an Egyptian plant. Nat. ord., *Aroideæ*; Tribe, *Colocasieæ*. 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. antiquorum*. 2. Green. June. Levant and India. 1551. Tuberous-rooted. Greenhouse. Wight Ic. t. 786.
 — *esculenta*. 2. Green, purple. June. S. Amer. 1739.
 — *euchlo'ra*. Leaves green with violet margins; petiole tinged violet.
 — *Devansaya'na*. Leaves dark green, paler beneath, veined purple. Papua. 1886. Ill Hort. 1886, t. 601.
 — *indica*. Cochinchina. Gfl. 1889, p. 67.
 — *neo-guinee'nsis*. Leaves white-blotched. New Guinea. 1880. Ill Hort. t. 380.
 — *nymphæe'folia*. 4. White. E. Indies. 1800.
 — *odora'ta*. 3. Green, yellow. May. Peru. 1810. B. M. t. 3935. Syn., *Caladium odorum*, B. R. t. 641. This is now referred to *Alocasia odora*.

Colocy'nth. *Cucumis colocy'nthus*.

Cologa'nia. (Named after *M. Cologan*, who hospitably entertained naturalists visiting Teneriffe. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Clitoria*.)

Stove evergreen twiners, 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. angustifolia*. 3. Violet. Native country unknown. 1827.

- C. bilo'ba*. 20. Purple. Mexico. 1827. Syn., *Glycine bilo'ba*, B. R. t. 1418.
 — *Broussonetii*. 3. Violet. Mexico. 1827. Syn., *Clitoria Broussonetii*.
 — *pulche'ria*. 3. Rose. September. Mexico. 1837. Maund. Bot. t. 110.

Colorado Beetle. *Doryo'phora decemlinea'ta*.

Colpoon-tree. *Elæode'ndron*.

Colquhou'nia. (Named after Sir R. Colquhoun. Nat. ord., *Labiatae*; Tribe, *Stachydeæ*.)

Half-hardy evergreen shrubs. Cuttings under hand-lights in summer. Light loam and a little peat.

- C. coccine'a*. 5. Red, yellow. September. Nepal. B. M. t. 4514. Syn., *C. tomentosa*, Rev. Hort. 1873, p. 131.
 — *vestita*. 5. Kumaon. Flowers smaller than in *C. coccine'a*, of which it is perhaps only a woolly variety.

Colt's-foot. *Tussila'go*.

Colubri'na. (From *coluber*, a snake; in reference to the twisted stamens. Nat. ord., *Rhamnaceæ*; Tribe, *Rhamneæ*. Allied to *Ceanothus*.)

Stove evergreen shrubs; cuttings of young shoots in sand, under a bell-glass; peat and loam. Summer temp., 60° to 80°; winter, 50° to 55°.

- C. asiatica*. 12. Pale yellow. July. Ceylon. 1891. Bedd. Fl. Sylv. t. 107.
 — *cubensis*. 5. Crimson. Cuba. 1820.
 — *ferruginosa*. 20. Green. July. Bahama. 1762.
 — *reclinata*. 5. Green. August. Jamaica. 1758.
 — *triflora*. Pale yellow. Mexico. 1826.

Columbine. *Aquile'gia*.

Columbo-root. Root of *Co'cculus palma'tus*.

Columellia. (Named in honour of L. J. M. Columella, who flourished forty-two years after Christ. Nat. ord., *Columelliaceæ*.)

This, the only genus in the order, is represented by only two known species. Only the one here enumerated has yet been introduced; it is a small evergreen greenhouse shrub, and requires the same treatment as *AGAPETES* or *THIBAUIDA*.

- C. oblonga*. Yellow. Ecuador. 1875. B. M. t. 6183.

Colu'mnea. (Named after *Fabius Columna*, an Italian nobleman. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*. 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. June. New Grenada. 1851. Paxt. Fl. Gard. I. p. 95.
 — *auranco'tens*. $\frac{1}{2}$. Orange, red. September. Columbia. 1843. B. M. t. 4294. Syn., *C. pilosa*, Fl. Ser. t. 233.
 — *repens*. Yellow, reddish. February. St. Martha. 1845.
 — *rotundifolia*. Trinidad. Syn., *C. scandens* of B. M. t. 1614, but not elsewhere.

- C. Schiedia'na*. ½. Orange. June. Mexico. 1840.
 — *scandens*. 6. Scarlet. August. W. Ind. 1759. B. M. t. 5118, but not t. 1614, which is *C. rotundifolia*.

SHRUBS.

- C. crassifolia*. 1. Rose. October. 1837. B. M. t. 4330.
 — *erythrophœa*. 2. Red. November. Mexico. 1858. Rev. Hort. 1867, p. 170.
 — *hirsuta*. 2. Pale purple. September. Jamaica. 1780. B. M. t. 3081.
 — *hispida*. Scarlet. September. Jamaica. 1824.
 — *Kalbreryeria'na*. Yellow. Leaves pale green with yellow patches; under surface blood-red. January. New Grenada. 1882. B. M. t. 6633.
 — *rutilans*. 2. Purple. September. Jamaica. 1823.
 — *splendens*. See *Nematanthus longipes* (B. M. t. 4018), to which *C. grandiflora* and *C. longipedunculata* also belong.
 — *trifoliata*. 3. Blue. September. 1823.
 — *zebrina*. Pale yellow. Brazil. 1843.

Colu'ria. (From *kolouros*, deprived of a tail; in reference to the seeds. Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*. Allied to *Geum* and *Potentilla*.)

Hardy herbaceous perennial. Divisions; peat and loam.

- C. geoides*. 1. Yellow. April. Siberia. Syns., *Dryas geoides* and *Geum Lazmanni*.
 — *potentilloides*. 1. Orange. June. Siberia. 1780.

Colu'tea. Bladder-senna. (From *koloutea*, a name adopted from Theophrastus. Nat. ord., *Leguminosæ*; Tribe, *Galegææ*. 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. arboreascens*. 10. Yellow. July. France. 1548. B. M. t. 81. Syn., *C. nepalensis*.
 — *crucifolia*. 4. Scarlet. June. Levant. 1710. Syn., *C. orientalis*.
 — *frutescens*. B. M. t. 181. See *Sutherlandia frutescens*.
 — *galegifolia*. B. M. t. 792. See *Swainsonia galegifolia*.
 — *halæppica*. 6. Yellow. June. Levant. 1752. Syn., *C. Pocockii*.
 — *media*. 10. Orange. July. Wats. Dendr. t. 140.
 — *nepalensis*. B. M. t. 2622. See *C. arboreascens*.
 — *perennans*. Jacq. Vind. III. t. 3. See *Lesseria perennans*.
 — *Pocockii*. See *C. halæppica*.

Colv'illea. (Named after Sir Charles Colville, Governor of Mauritius. Nat. ord., *Leguminosæ*; Tribe, *Eucasalpineæ*. Allied to *Cæsalpinia*.)

Stove evergreen tree. Cuttings in sand, under a bell-glass, and in bottom-heat; seeds when procurable. Summer temp., 60° to 80°; winter, 45° to 55°.

- C. racemosa*. 45. Scarlet. April. Madagascar. B. M. t. 3225-6.

Colysis membrana'cea. See **Poly-podium** (*Phymatodes membranaceum*).

Comac'l'nium. (From *kome*, hair, and *kline*, a couch; referring to the hairy receptacle. Nat. ord., *Compositæ*;

Tribe, *Helenoideæ*. Referred to **Dys-sodia** in the Genera Plantarum.)

Half-hardy perennial, resembling an African marigold with the flowers of a scarlet zinnia.

- C. aurantiacum*. 3. Scarlet. September. Guatemala. 1852. Fl. Ser. t. 756. Syn., *Clomenocoma montana*.

Comaro'psis. See **Waldsteinia**.

Comarosta'phylis. (From *koma-ros*, the Arbutus, and *staphyle*, a grape; referring to the clusters of fruit. Nat. ord., *Ericaceæ*; Tribe, *Arbutææ*. Allied to *Arctostaphylos*.)

Pretty bushes from the alpine regions of Central America, bearing succulent fruit, which is eatable. Seeds; cuttings under a hand-light, at 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. arbutoides*. 6. White. May. Guatemala. 1842. B. R. 1843, t. 30.
 — *formosa*. White. Ill. Hort. 1858, t. 162. Syn., *Andromeda formosa*.
 — *nitida*. White, pink. May. Mexico. 1841. Syn., *Arctostaphylos nitida*, B. M. t. 3904.
 — *polifolia*. Crimson. May. Mexico. 1840. Syn., *Arctostaphylos polifolia*.

Comarou'ma. (Derivation unexplained. Nat. ord., *Leguminosæ*; Tribe, *Dalbergiææ*.)

Stove shrub.

- C. odorata*. Reddish. French Guiana. Rev. Hort. 1873, p. 232.

Co'marum. See **Potentilla**.

Comb're'tum. (An ancient name adopted from Pliny. Nat. ord., *Combretaceæ*. Syn., *Poirvœa*.)

Stove evergreen climbers, except two shrubs. Cuttings of young shoots, or rather stiffish side-shoots, taken off with a heel, in sand, under a bell-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. barbatum*. 10. White. Madagascar. 1820. Syn., *Poirvœa barbata*.
 — *coccineum*. 20. Scarlet. September. Madagascar. 1818. Syn., *Poirvœa coccinea*.
 — *comosum*. 20. Scarlet. Sierra Leone. 1822. B. R. t. 1165. Syn., *Poirvœa comosa* and *intermedia*.
 — *decandrum*. White. Carthage. Syns., *Poirvœa alternifolia* and *decandra*.
 — *elegans*. 15. Scarlet. May. Brazil. 1820.
 — *farinosum*. 10. Orange, red. May. Mexico. 1825.
 — *formosum*. Yellow, red. March. Brazil. 1824.
 — *grandiflorum*. 5. Scarlet. May. Sierra Leone. 1824. Shrub. B. M. t. 2944, B. R. t. 1681. Syns., *C. Afzeli* and *Poirvœa Afzeli*.
 — *intermedium*. 15. Scarlet. April. Sierra Leone. 1823. Syn., *Poirvœa intermedia*.
 — *latifolium*. Scarlet. May. E. Ind. 1844. Syn., *Poirvœa macrophylla*.
 — *laevum*. Pale yellow. W. Indies.
 — *micranthum*. Red. Sierra Leone.
 — *micrope'talum*. Green, orange. Brazil. 1867. B. M. t. 5617.
 — *nanum*. 2. White. Nepal. 1825. Shrub.

- C. paniculatum*. 50. Scarlet. September. Guinea. 1824.
 — *pilosum*. E. Indies. Syn., *Poiræa pilosa*.
 — *pincea* num. Purple, red. May. Sierra Leone. 1845.
 — *purpureum*. 20. Scarlet. September. Madagascar. 1818. B. M. t. 2102. Syns., *C. coccineum*, Gf. t. 1263, and *Poiræa coccinea*.
 — *racemosum*. 12. White. May. Benin. 1826.
 — *secundum*. 10. Yellow-striped. May. Trinidad. 1818.
 — *Wrightia* num. 10. India. 1845.

Comespe'rma. (From *come*, hair, and *sperma*, a seed; in reference to the seeds being enveloped with hairs. Nat. ord., *Polygalaceæ*. 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. cordifolium*. 2. Purple. June. 1822.
 — *cordifolium*. A synonym of *C. ericinum*.
 — *ericinum*. 3. Purple. June. 1822.
 — *gracile*. See *C. volubile*.
 — *virgatum*. Purple. May. 1826.
 — *volutum*. 3. Blue. April. 1834. A twiner. Syn., *C. gracile*, Paxt. Mag. v. p. 145.

Comfrey. *Symphytum officinale*.

Commelin'a. Spiderwort. (Named after J. and G. Commelin, Dutch botanists. Nat. ord., *Commelinaceæ*; Tribe, *Commelinaceæ*.)

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 temperate Australia, etc., 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. communis*. 2. Purple, blue. June. N. Amer. 1732. Hardy.
 — *cucullata*. Blue. July. French Guiana. 1835. Greenhouse.

HERBACEOUS PERENNIALS.

- C. caripensis*. See *C. virginica*.
 — *caelestis*. Blue. June. 1813. Stove. Syn.,
 — *tuberosa*, Rêd. Lil. t. 108.
 — *alba*. 3. White. June.
 — *deficiens*. Two plants are cultivated under this name, one of which is the same as *C. nudiflora*. Fl. Ser. t. 1824.
 — *glabra*, of gardens, is synonymous with *C. fasciculata*.
 — *elliptica*. Blue. Mexico. Syns., *C. hirsuta*, *C. orchidioides* and *C. scapigera*.
 — *erecta*. 1. Blue. August. Virginia. 1732. Hardy.
 — *fasciculata*. 1. Blue. July. Lima. 1817. Hardy. Syn., *C. glabra*. Ref. Bot. t. 166.

- C. gracilis*. 1. Blue. July. Lima. - 1830. Greenhouse. *C. gracilis* of B. M. t. 3047, not of Ruiz and Pavon, is *C. fasciculata*.
 — *graminifolia stricta*. See *Tinantia fugax*.
 — *hirtella*. 1. Blue. June. N. Amer. 1820. Hardy.
 — *hispidula*. Deep blue. Peru. 1845. Syn., *C. Schaubertii*.
 — *prostrata*, of gardens, is a synonym of *C. bengalensis*.
 — *scabra*. 1. Purple, brown. July. Mexico. 1852.
 — *tuberosa*. 1. Blue. June. Mexico. 1732. Stove. Andr. Rep. t. 399. Syn., *C. undulata*, B. C. t. 1553.

HARDY EVERGREEN TRAILERS.

- C. caroliniana*. A. synonym of *C. nudiflora*.
 — *virginica*. 1. Blue. June. Virginia. 1779. Syn., *C. caripensis* and *C. deficiens* of B. M. t. 2644.

GREENHOUSE EVERGREEN TRAILERS.

- C. africana*. 1. Blue. July. Cape of Good Hope. 1759. B. M. t. 1431.
 — *angustifolia*. 1. Blue. June. Carolina. 1827. Half-hardy.
 — *cyanea*. 1. Blue. July. N. Holland. 1820.

STOVE EVERGREEN TRAILERS.

- C. bengalensis*. 3. Blue. June. Bengal. 1794. Wight Ic. t. 2065. Syn., *C. mollis*.
 — *cayenne* nsis. 1. Blue. June. Guiana. 1823.
 — *communis*. Blue. June. China. 1813. Syn., *C. polygama*
 — *deficiens* of B. M. t. 2644 is a form of *C. virginica*.
 — *dianthifolia*. 1. Blue. July. 1816. Twiner.
 — *draba*. 1. Blue. June. 1813.
 — *longicaulis*. Jacq. Ic. t. 294. See *C. nudiflora*.
 — *mollis*. Jacq. Ic. t. 293. See *C. bengalensis*.
 — *nudiflora*. 3-6. Blue. August. Brazil, 1806. Syns., *C. deficiens* of Fl. Ser. t. 1824, and *C. longicaulis*.
 — *obliqua*. 1. Blue. June. India. Syn., *C. polypathia*, Wight Ic. t. 2066. 1820.
 — *paullia*. 1. Blue. June. Mexico. 1820.
 — *parviflora*. 1. Blue. June. 1824.
 — *zanoniana*. See *Campelia zanoniana*.

Commersonia. (After *Philibert Commerson*, who died 1727. Nat. ord., *Sterculiaceæ*; Tribe, *Buettneriaceæ*.)

Stove shrubs. Rich sandy loam. Cuttings under a hand-glass in a brisk heat; seeds.

- C. dasyphylla*, Andr. Rep. t. 603. See *Rulingia pannosa*.
 — *platyphylla*. White. June. Moluccas. 1816. B. M. t. 1813. Syn., *C. echinata*, Andr. Rep. t. 519.

Comocla'dia. Maiden Plum. (From *come*, hair, and *kladus*, a branch; in reference to the dense, silky covering on the young branches. Nat. ord., *Anacardiaceæ*. Allied to *Pistacia*.)

Stove evergreen trees. For cultivation, see BARRINGTONIA.

- C. dentata*. 30. Red. July. Cuba and St. Domingo. 1790.
 — *ilicifolia*. 15. Red. St. Kitts and Antigua. 1789.
 — *integrifolia*. 15. Red. Jamaica. 1778.

Compare'ttia. (Named after *Comparetti*, an Italian botanist. Nat. ord., *Orchidaceæ*; Tribe, *Vandee-Oncidieæ*. Allied to *Ionopsis* and *Trichocentrum*.)

Stove orchids. Divisions and offsets; fibry peat, sphagnum, and broken pots herds. 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. coccinea*. 1. Scarlet. August. Brazil. 1838. B. R. t. 68.
 — *cryptocera*. Pink; lip crimson. 1851.
 — *falcata*. ½. Rose. May. Mexico. 1836. B. M. t. 4980. Syn., *C. rosea*.
 — *macroplectron*. White, rose-red. Columbia. 1879.
 — *rosea*. See *C. falcata*.
 — *speciosa*. Ochre, orange. Ecuador. 1878.

Compost is a mixture of manures, or of soils 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, peat, 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 inclosure concealed from sight, but in the vicinity of the hotbeds, hot-houses, and other similar structures, for the convenience of moving the pots to it in the potting season, conveyance of manures, etc. All the soils should be fully exposed. The manures being liable to lose much of their fertile components in drainage, would be best kept in tanks; and if these are covered, all the better.

Comptonia. See **Myrica**.

Cona'ndron. (From *konos*, a cone, and *aner*, a male; the appendages to the anthers are united in a cone around

the style. Nat. ord.; *Gesneraceæ*; Tribe, *Cyrtandrea*. Allied to *Ramondia*.)

A pretty herbaceous perennial, requiring the same treatment as *RAMONDIA*.

C. ramondioides. ½. White, or pinkish. Summer. Japan. 1879. B. M. t. 6484.

Cona'anthera. (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*; Tribe, *Conanthereæ*. Allied to *Cumingia* and *Cyanella*.)

Pretty little half-hardy bulbs, very scarce, being difficult to preserve, like others of this Chilean 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. bifolia*. 1. Blue. April. 1823. B. M. t. 2496. Syn., *C. Simsii*.
 — *campanulata*, B. R. t. 1193. See *Cumingia campanulata*.

Concrete Walks. From personal inspection we can say these are the best we ever saw. Directions for making them are as follows:—A layer of stones, brick-bats, shells, or clinkers, six inches deep, to form a dry bottom; a layer of chalk or lime, in the proportion of one to ten of the stones or other foundation, and well rolled and watered to the thickness of three inches, with a rise of two inches in the centre; over this half an inch of gravel and lime, or fine chalk; water and roll well again; add one-eighth of an inch of the best coloured gravel; and again roll until quite solid. Have the walk two inches wider on each side than you desire, as this checks the turf and weeds from encroaching, and prevents the rain-water getting to the foundation of the walk.

Conda'lia. (Named after *Condal*, a Spanish botanist. Nat. ord., *Rhamnaceæ*; Tribe, *Zizyphææ*. Allied to *Zizyphus*, or Christ's Thorn.)

Half-hardy evergreen. Cuttings of half-ripe shoots; common soil. Wants a little protection in winter.

- C. microphylla*. 2. Green. Chili. 1824.

Condami'nea. (Nat. ord., *Rubiaceæ*; Tribe, *Cinchoneæ*.)

Stove evergreen tree. Cuttings of ripe wood in sand, under a bell-glass.

- C. tinctoria*. 30. Red. September. Trinidad. 1820. Syn., *Macronemium tinctorium*.

Condor Vine. *Gonolobus Condura'ngo*.

Coniferæ, 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 Vitæ.

Coniogra'mma java'nica is a synonym of *Gymnogramma javanica*.

Coni'um. Hemlock. (From *konao*, to whirl round; in reference to the giddiness caused by eating the leaves. Nat. ord., *Umbelliferae*; Tribe, *Aminnee*. Allied to *Arracacha*.)

Division of the roots, and sowing the seeds in spring. Common soil.

- C. Arracacha*. See *Arracacia esculenta*.
 — *croaticum*. 6. White. July. Hungary. 1818. Hardy herbaceous perennial.
 — *maculatum*. 5. White. June. Britain. Hardy biennial. Common Hemlock. Eng. Bot. ed. 3, t. 629.
 — *moschatum*. A synonym of *Arracacia esculenta*.

Con'narus. (From *connarus*, name of a tree; adopted from the Greek of Athenæus. Nat. ord., *Connaraceae*; Tribe, *Connaree*. Syn., *Omphalobium*.)

Stove evergreen shrubs. Cuttings of firm shoots in April, in sand, under a bell-glass, and in bottom-heat. Summer temp., 60° to 80°; winter, 50° to 55°.

- C. africanus*. 8. Guinea. 1822. Syn., *Omphalobium africanum*.
 — *monocarpus*. 8. Ceylon, Syns., *C. asiaticus* and *Omphalobium indicum*.
 — *nitidus*. 8. White. Silhet. 1824.
 — *paniculatus*. 8. White. Chittagong. 1824.
 — *pubescens*. 6. White. Guiana. 1822.

Conocarpus. 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., *Combretaceae*; Tribe, *Combretae*. Allied to *Terminalia*.)

Stove evergreen shrubs. Treatment similar to *Connarus*.

- C. acutifolius*. 10. Pale yellow. S. Amer. 1824.
 — *erectus*. 10. White. Jamaica. 1752.
 — *procumbens*. 1. Pale yellow. Cuba. 1730.
 — *racemosus*. See *Laguncularia racemosa*.

Conocli'nium. See *Eupatorium*.

Conospe'rmum. (From *konos*, a cone, and *sperma*, a seed; the fruit, or carpels, growing close together, and forming a cone. Nat. ord., *Proteaceae*; Tribe, *Conospermeae*.)

Greenhouse evergreen shrubs, from Australia. Cuttings in sand, under a glass, either in spring or autumn; sandy peat. Summer temp., 55° to 75°; winter, 35° to 45°.

- C. acerosum*. 3-4. W. Australia.
 — *acinafolium*. 3. White. June. 1824.
 — *ceruleum*. Blue. W. Australia. 1830.
 — *capitatum*. 3. Blue. July. W. Australia. 1824.
 — *densiflorum*. Undershrub. W. Australia.
 — *ellipticum*. 3. White. July. New South Wales. 1822.
 — *ericifolium*. White. 1820. B. M. t. 2850.
 — *glumaceum*. 3-4. W. Australia.
 — *Hugelii*. Undershrub. W. Australia.
 — *incurvum*. Swan River.
 — *longifolium*. 4. White. July. New South Wales. 1824.

C. stœchadis. W. Australia. Syn., *C. sclerophyllum*.

- *taxifolium*. 3. White. July. Queensland and Tasmania. 1824. B. M. t. 2724.
 — *tenuifolium*. 3. White. July. New South Wales. 1824.
 — *triplinervium*. W. Australia. 1830.
 — *undulatum*. A variety with undulate leaves. W. Australia.

Conoste'gia. (From *konos*, a cone, and *stega*, a covering; alluding to the lobes of the calyx clasping the angles of the ovary. Nat. ord., *Melastomaceae*; Tribe, *Miconieae*. Allied to *Apectrum*.)

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. Barbisiana*. 20. White. May. Jamaica. 1825.
 — *procera*. 12. White. June. Jamaica. 1822.
 — *semicrenata*. See *Miconia semicrenata*.

Conoste'phium. (From *konos*, a cone, and *stephanos*, a crown; referring to the disposition of the flowers. Nat. ord., *Epacridaceae*. 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. pendulum*. $\frac{1}{2}$ to $1\frac{1}{2}$. Red. April. Swan River.

Conostylis. (From *konos*, a cone, and *stylos*, a style; the style, or female organ, grows in the shape of a cone at the bottom. Nat. ord., *Hemodoraceae*; Tribe, *Conostyleae*. Allied to *Anigozanthos*.)

Greenhouse herbaceous perennials, from West Australia. Divisions; sandy loam. Summer temp., 55° to 75°; winter, 40° to 45°.

- C. aculeata*. 1. 1820. B. M. t. 2989.
 — *americana*. See *Lophiola aurea*.
 — *aurea*. Yellow.
 — *dealba*. Swan River.
 — *serrulata*. 1824.
 — *setigera*. 1825. Fl. Ser. t. 259.
 — *setosa*. Yellow. September. 1843.

Conothamnus eriocar'pus. See *Calothamnus sanguineus*.

Conradia. (Named after *Conrad Gesner*, a botanist of Zurich. Nat. ord., *Gesneraceae*; Tribe, *Gesnereae*. 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. calycosa*. Ic. Pl. tt. 689-690. See *Pentarrhaphia calycosa*.
 — *floribunda*. Deep reddish-scarlet. October. S. Amer. 1843. Paxt. Mag., vol. 15, p. 99.
 — *longiflora*. $1\frac{1}{2}$. June. Jamaica. 1823.
 — *scabra*. 2. Scarlet. July. Jamaica. 1820.

Conservative Walls. See *Walls*.

Conservatory is often used synonymously with *Greenhouse*, and then it denotes a structure suitable 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, etc., 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. 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. 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.

With the single exception of planting out, the treatment of the conservatory

is similar to that of the greenhouse. Keeping this in mind, good drainage should be secured; and the general soil should consist of two parts fibry loam and one of fibry peat, with pieces of sandstone, broken bricks, and charcoal intermixed, to keep it open. The peculiar requirements of each plant, as respects soil and manure, can be attended to in planting. Where the object is merely to preserve the plants during the winter, the general treatment will be similar to that of a cold greenhouse. Where the ideas of comfort, alike for the plants and the visitors, are to be maintained, and flowering plants are to be introduced liberally in winter, the general temperature should not be lower than 50°, and should range from that to 60°, allowing 5° or 10° more for sunshine. In such circumstances, the *Camellia* and the *Orange* will bloom during most of the winter; and *Acacias*, *Eugenias*, etc., will bloom early in spring. The greatest possible quantity of air must be given in summer; but in winter it must be very limited in frosty and dull, foggy weather, it being better, in either circumstances, to keep the house rather close, in preference to using large fires. Protecting by covering in severe weather will be of importance. 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. Water may be given liberally during summer, both at bottom and overhead; but in winter the plants will want little if duly attended to in the autumn; yet what is given should be rather warmer than the atmosphere of the house. In planting, it will often be necessary to make little brick pits for particular plants, to prevent them occupying too much space.

Contrajé'eva Root. *Dorste'nia contrajé'eva*.

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., *Liliaceæ*; Tribe, *Convallariæ*.)

Hardy herbaceous perennials. Divisions; common soil, shady situation.

C. bifolia. B. M. t. 510. See *Maianthemum bifolium*.

— *japo'nica*. See *Flueggea japonica*.

— *leptophylla*. S. White. May. N. America.

1800. Syn., *Polygonatum macrophyllum*.

— *maja'lis*. 1. White. May. Britain. Eng. Bot. ed. 3, t. 1514.

- C. maja'lis* *de-re-pleno*. 1. White. May.
 — *proli'ficans*. White, tinged pink. 1887.
 Garden variety. Gf. t. 1292.
 — *ru'bra*. 1. Flesh. May.
 — *oppositifo'lia*. B. M. t. 3529. See *Polygonatum*
oppositifolium.
 — *Polygona'tum*. See *Polygonatum officinale*.
 — *racemo'sa*. B. M. t. 899. See *Smilacina*.
 — *stella'ta*. B. M. t. 1043. See *Smilacina*.
 — *verticilla'ta*. See *Polygonatum verticillatum*.

Convolvulus. Bindweed. (From *convolvere*, to entwine; in reference to their twining habit. Nat. ord., *Convolvulaceæ*.)

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 Indian Jalap and Scammony plants. Cuttings, divisions, and seeds of perennials, and seeds of annuals; peat and loam for the greenhouse and stove species, and common soil for the hardy. Seeds of hardy species, sown in open border, in March or April, or in hotbed for those which need protection.

HARDY ANNUALS.

- C. arve'nsis*. 2. Pink, white. June. Britain.
 Trailer. Eng. Bot. ed. 3, t. 923.
 — *elonga'tus*. 1. White. July. Canaries. 1815.
 Twiner. B. R. t. 498.
 — *Forska'lii*. Blue. June. Egypt. 1837.
 — *pentapetalol'des*. 1. Light blue. July. Ma-
 jorca. 1789. Trailer. Sibth. Fl. Gr. t. 197.
 — *si'culus*. 2. Light blue. July. South Europe.
 1640. Trailer. Sibth. Fl. Gr. t. 196.
 — *Soldane'lla*. Prostrate. Pink. July. Sea-
 shores of Britain.
 — *stri'ctus*. Rose. June. Egypt. 1822.
 — *tri'color*. 3. Striped. July. South Europe.
 1629. B. M. t. 27.
 — *abysio'rus*. 1. White. July. South
 Europe. 1629.
 — *vitta'tus*. Fl. Ser. t. 298.
 — *undula'tus*. White, red. June. South
 Europe. 1816.

TENDER ANNUALS.

- C. bi'color*. 6. White, purple. July. Isle of
 France. 1818. Stove. B. M. t. 2205.
 — *erube'scens*. 6. Pink. July. N. S. Wales.
 1803. Greenhouse biennial. B. M. t. 1067.
 — *evolutol'des*. 15. Red. July. South Europe.
 1820. Greenhouse.
 — *genicula'tus*. Red. July. Australia. 1826.
 Greenhouse climber.
 — *hi'rtus*. 3. Blue. July. E. Indies. 1804. Stove
 trailer.
 — *macroca'rrus*. 10. Purple. July. S. America.
 1752. Stove twiner.
 — *quinguefo'lius*. 6. White. July. W. Indies.
 1807. Stove climber.

GREENHOUSE EVERGREENS.

- C. alceifo'lius*. Yellow, purple. June. Cape of
 Good Hope. 1823. Herbaceous.
 — *bryoniafo'lius*. 3. Pink. July. China. 1802.
 Deciduous twiner. B. M. t. 943.
 — *canarie'nsis*. 20. Pink. June. Canaries. 1690.
 Twiner. B. M. t. 1228.
 — *can'e'scens*. 1. Blue. Bogota. 1846. Twiner.
 — *Cneo'rum*. 3. Pink. June. Levant. 1640.
 Shrub. B. M. t. 459.
 — *crena'tus*. See *C. Hermanniae*.
 — *Fa'lica*. White, tinged pink. May. S. Africa.
 Jacq. H. Schoenb. t. 198.
 — *farina'sus*. 6. Pink. May. Madeira. 1777.
 Twiner. B. R. t. 1323.
 — *fo'ridus*. 2. Pink. August. Canaries. 1799.
 Trailer. Jacq. Ic. t. 34.
 — *Hermanniae*. 5. White. August. Peru. 1799.
 Twiner. Syn., *C. crenatus*, Jacq. Ic. t. 315.

- C. lana'tus*. White. May. Levant. 1829. Climber.
 Sibth. Fl. Gr. t. 202.
 — *linea'ris*. 2. Pink. June. South Europe. 1770.
 Shrub. B. M. t. 289.
 — *maurita'nicus*. Blue. N. Africa. Borders in
 summer, and greenhouse baskets.
 — *pannifo'lius*. 15. Blue. August. Canaries.
 1805. Twiner. B. R. t. 222.
 — *saxa'tilis*. 1. White. South Europe. 1796.
 Trailer.
 — *scopa'rius*. 2. White. August. Canaries. 1738.
 Trailer. B. R. 1841, t. 43.
 — *suffruticosus*. 3. Pink. July. Madeira. 1788.
 Twiner. B. R. t. 133.
 — *tenu'ssimus*. Lilac. July. Levant. Herba-
 ceous climber. Sibth. Fl. Gr. t. 195.
 — *tilia'ceus*. 3. Purple. July. Brazil. 1820.
 Twiner.

STOVE EVERGREENS.

- C. albive'nus*. 6. Pale pink. June. Algoa. 1823.
 Climber. B. R. t. 1116.
 — *arbo're'scens*. 10. Mexico. 1818. Shrub.
 — *califo'rnicus*. White, canary-yellow. Cali-
 fornia. 1888.
 — *chryso'rhi'zus*. See *Ipomœa batatas*.
 — *cilia'tus*. 6. Pink. July. Cayenne. 1810.
 Twiner.
 — *glab'er*. 12. White. May. Cayenne. 1806.
 Twiner.
 — *glaucofo'lius*. Purple. June. Mexico.
 — *guiane'nsis*. 10. White. July. Guiana. 1823.
 Twiner.
 — *ma'ximus*. 20. Pink. July. Ceylon. 1799.
 Twiner.
 — *ocella'tus*. 14. White, purple. July. S. Africa.
 1844. Herbaceous climber. B. M. t. 4065.
 — *ochra'ceus*. 6. Yellow. July. Guinea. 1825.
 Twiner. B. M. t. 1060.
 — *penta'nthus*. B. M. t. 2151. See *Jacquemontia*
violacea.
 — *re'ptans*. 1. Purple. July. E. Indies. 1806.
 — *Roxbu'rgii*. White. July. E. Indies. 1826.
 Climber.
 — *scrobicula'tus*. 2. Pale red. S. America. 1825.
 Trailer. B. R. t. 1076.
 — *verticilla'tus*. 5. Blue. August. W. Indies.
 1819. Twiner.

HARDY OR HALF-HARDY DECIDUOUS.

- C. althæo'ides*. 2. Pink. June. Levant. 1597.
 Twiner. B. M. t. 359.
 — *bicuspidat'us*. 4. Purple. June. Davuria.
 1818. Twiner.
 — *bonarie'nsis*. 3. White. July. Chili. 1817.
 Twiner.
 — *canta'bricus*. 1. Pink. June. South Europe.
 1640. Trailer.
 — *chine'nsis*. 6. Purple. July. China. 1817.
 Twiner. B. R. t. 322.
 — *co'rsicus*. 1. Pink. June. Corsica. 1824.
 Twiner.
 — *ebractea'tus*. 1. White. July. 1819. Trailer.
 — *emargina'tus*. 2. Purple. July. 1817. Twiner.
 — *Gera'rds*. 1. Pink. July. South Europe.
 Trailer.
 — *holoser'iceus*. Pale yellow. June. Tauria.
 1824.
 — *interme'dius*. Pale rose. June. South Europe.
 1825.
 — *ita'licus*. Rose. May. South Europe. 1844.
 Climber. B. R. 1847, t. 12.
 — *lanuginosus*. 6. White. July. Levant. 1818.
 Climber.
 — *linea'tus*. 1. Purple. June. South Europe.
 1770. Sibth. Fl. Gr. t. 199.
 — *Malco'lmii*. White. July. Persia. 1824.
 Climber.
 — *pe'rsius*. White. June. Persia. 1823.
 — *platycar'pus*. Lilac. August. Mexico. 1827.
 Half-hardy.
 — *salvifo'lius*. 1. Pink. July. Palestine. 1825.
 Trailer.

- C. Scamno'nia*. White, purple. July. Levant. 1726. Twiner. Swt. Fl. Gard. II. t. 173.
 — *Sibth'ropii*. 1. White. July. France. 1823. Trailer.
 — *terre'stris*. White. July. Altai. 1828.

EXCLUDED SPECIES.

- C. ca'ndicans*, B. M. t. 1603. See *Ipomœa pandurata*.
 — *dahu'ricus*, B. M. t. 2609. See *Calystegia dahurica*.
 — *diss'e'tus*. See *Ipomœa sinuata*.
 — *involuta'rus*, B. R. t. 318. See *Hewittia bicolor*.
 — *ni'l*, B. M. t. 188. See *Ipomœa hederacea*.
 — *purpu'reus*, B. M. t. 113. See *Ipomœa purpurea*.
 — *Turpe'thum*, B. M. t. 2093. See *Ipomœa Turpethum*.

Cony'za. (From *chonos*, imperfect. Nat. ord., *Compositæ*; Tribe, *Asteroidæ*.)

- C. ambigua* is an annual herb; *C. chilensis* a biennial; both are hardy. Seeds. Garden-soil.
 — *ægypti'aca*. Syns., *Erigeron ægyptiacum*, and *E. Gonani*. Jacq. H. Vind. vol. 3, t. 79.
 — *ambi'gua*. 1. Purple. July. S. America. Syn., *Erigeron kni'folius*.
 — *chile'nsis*. 2½. Yellow. September. Chili. 1816. Syn., *Erigeron chilensis*.

Coo'kia puncta'ta. See *Clausena Wampi*.

Cooper'ia. (Named after Mr. Cooper, gardener at Wentworth House, in Yorkshire, for many years. Nat. ord., *Amaryllidæ*; Tribe, *Amaryllææ*. Allied to *Zephyranthus*.)

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*. 1. White, green. Mexico. 1835. B. M. t. 3482.
 — *Drummo'ndii*. 1. White, red. Mexico. 1835. B. R. t. 1835.
 — *peduncula'ta*. White, orange. July. Texas. 1835. B. M. t. 3727.

Copaifera. (From *copaiba*, the Brazilian name for its balsamic juice, the balsam of capivi, and *fero*, to bear. Nat. ord., *Leguminosæ*; Tribe, *Cynometrææ*. 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. guiane'nsis*. 30. White. Guiana. 1826.
 — *officina'lis*. 20. White. S. America and W. Indies. 1774.

Coperni'cia. (Named after Copernicus, the astronomer. Nat. ord., *Palmææ*; Tribe, *Coryphææ*.)

Stove palms.

- C. ceri'fera*. Brazil. Wax palm. There are also the following species: *ho'spita*, *macroglœa*, *maritima*, *Pu'mos*, *tecto'rum*, and *Wrightii*.

Copio'phora cornu'ta is an insect, which occasionally attacks Azaleas.

Copro'sma. (From *kopros*, dung, and *osme*, a smell; plants fetid. Nat. ord., *Rubiaceæ*; Tribe, *Anthospermeæ*.) Greenhouse shrub. For cultivation, see GARDENIA.

- C. Baueria'na*. New Zealand. 1866.
 — *— pictura'ta*. Leaves with central variegation. New Zealand. 1876. Syn., *C. Stockii*.
 — *— variega'ta*. Leaves with marginal variegation. 1866.
 — *lu'cida*. Greenish. March.

Co'ptis. (From *kopto*, to cut; in reference to the division of the leaves. Nat. ord., *Ranunculaceæ*; Tribe, *Helleboreæ*. Allied to *Helleborus*.)

The roots of this plant are used in the United States medicinally, under the name of Gold Thread. Hardy herbaceous perennials; division of the roots and seeds; sandy, peaty soil; require the protection of a cold pit in winter.

- C. asplenifo'lia*. 1. White. April. N. America, and Japan.
 — *occidenta'lis*. ½. White. May. N. America.
 — *orienta'lis*. ¼. White. May. Japan.
 — *trifo'lia*. ½. Brown. May. N. America. 1782. B. C. t. 173. Syn., *Helleborus trifoliatus*.

Corbula'ria, a genus of *Amaryllidææ* founded by Salisbury, is now regarded as a section of **Narcissus** (which see), characterized by having a large funnel-shaped or cylindrical corona, as long as the lanceolate perianth segments, and long, declinate stamens. There are many varieties of the typical species, *Narcissus Bulbocodium*, B. M. t. 88.

Co'rchorus. (From *koreo*, to purge, and *kore*, the pupil; alluding to a supposed medicinal quality of *C. oltorius*. Nat. ord., *Tiliacææ*; Tribe, *Tiliacæ*.)

Stove annuals. Sow in March. Soil, light loam. Jute is produced by *C. capsularis*.

- C. capsula'ris*. 6. Yellow. June. E. Indies. 1725.
 — *japo'nicus*. B. M. t. 1296. See *Kerria japonica*.
 — *oltio'rius*. 6. Yellow. June. E. Indies. 1640. B. M. t. 2810.

Co'rdia. (Named after E. Cordius, a German botanist of the sixteenth century. Nat. ord., *Boraginææ*; Tribe, *Cordiææ*.)

Stove evergreen trees and shrubs. Cuttings in sand under a hand-glass in heat. Loam and peat. Summer temp., 60° to 80°; winter, 55° to 60°.

- C. deca'ndra*. 3. White. Chili. 1875. A very handsome shrub. B. M. t. 6279.
 — *gerasea'nthus*. 30. White. May. W. Indies. 1789. Spanish elm.
 — *glabra*. White. Autumn. Brazil. 1868.
 — *grandifo'ra*. White. August. S. America. B. M. t. 1491.
 — *Gre'gii Palme'ri*. 5-10. White. North Mexico. 1889. G. and F. 1889, vol. 2, p. 233.
 — *ipomœae'no'ra*. 20. White. Brazil.
 — *la'vis*. Red. September. Caraccas. Jacq. H. Schoenb. t. 40.
 — *Myxa*. 15. E. Indies. 1640

C. patagonula. See *Patagonula americana*.
 — *speciosa*. 30. Scarlet. June. W. Indies. 1728.
 Syn., *C. sebestena*.
 — *superba*. White. September. Brazil.

Cordylinae. Club Palm. (From *kordyle*, a club. Nat. ord., *Liliaceae*; Tribe, *Asparageae*. Allied to *Dracena*.)

Stove or greenhouse evergreen palm-like plants. Suckers; peat and loam; or light, sandy loam and vegetable mould. Summer temp., 60° to 80°; winter, 50° to 55°.

C. australis. 10. Blue, white. New Zealand. 1823.

— *variegata*. Leaves variegated with yellow. Seedling variety. 1881.

— *Banksii*. White. New Zealand. 1860. Gfl. 1864, p. 444.

— *cannoxifolia*. White. Australia. 1820.

— *Haageana*. White. Australia. 1871.

— *congesta*. 10. Pale blue. March. N. Holland. 1822.

— *hemichrysa*. 2. Isle of Bourbon. 1823.

— *indivisa*. 10. Blue. New Zealand. Ill. Hort. 1860, p. 264.

— *Dallieriana*. Leaves striped with yellow. Seedling variety. Ill. Hort. vol. 37, t. 114.

— *Doucetiana*. Leaves edged and striped with white. 1888.

— *lentiginosa*. New Zealand. 1871.

— *lineata*. New Zealand.

— *nohilis*. Japan. 1852. Syn., *Calodracon nobilis*.

— *Rumphii*. B. M. t. 4279.

— *Sieboldii*. Green. Java.

— *stricta*. 10. Blue. March. New Zealand. 1820.

— *Thomsonii*. Leaves green, edged with magenta. Flor. Mag. t. 441.

— *Veitchii*. New Zealand.

The following are all cultivated as species of DRACÆNA, but properly belong to the genus CORDYLINA, and are probably but varieties of a very few species. Scarcely anything is known of their flowers.

C. albicans. Leaves white-variegated. Polynesia. 1869.

— *alborosea*. Leaves deep green, edged with rose; young ones whitish. Polynesia. 1874.

— *amabilis*. Leaves green, variegated with pink and white. Polynesia. 1871.

— *amboynensis*. Leaves bronzy, margined with red. Amboyna. 1876.

— *angustata*. Leaves narrow, purple beneath. Polynesia. 1869.

— *auro-ra*. Polynesia. 1878.

— *Balmoriana*. Leaves bronzy, with white and rosy stripes. Polynesia. 1875.

— *Baptistii*. Leaves margined and striped with pink and yellow. Polynesia. 1873.

— *bellula*. Leaves small, purplish, margined with red. Polynesia. 1874.

— *Casamovea*. Leaves bronzy, with crimson margins. New Hebrides. 1875.

— *chelsonii*. Leaves blackish-green, variegated with crimson. Polynesia. 1870.

— *compacta*. Leaves dull olive-green, streaked with rose. Samoa. 1873.

— *Dennisonii*. Leaves bronzy. Polynesia. 1871.

— *densicoma*. White. New Caledonia. 1875.

— *Duffii*. Leaves bronzy, striped with crimson. Polynesia. 1874.

— *excellsa*. Leaves reddish-brown, with red bands. Polynesia. 1869.

— *formosa*. Leaves bronzy, with red margins. Polynesia. 1872.

— *Fraserii*. Leaves blackish purple, glaucous, base margined with rose. Polynesia. 1873.

— *gemma*. Leaves waved, bronzy, with crimson edges. Polynesia. 1875.

C. gloriosa. Leaves metallic green, striped with bronzy-orange. Polynesia. 1872.

— *granatis*. Leaves deep and bright green, bordered with white and edged with rose. Samoa. 1874.

— *Guilfoylei*. Australia. 1868.

— *Hendersoni*. Leaves marbled with white and pink. Polynesia. 1874.

— *imperialis*. Leaves variegated with white and rosy. Polynesia. 1872.

— *inscripta*. Leaves streaked with dull purple and rose. Polynesia? 1873.

— *jaspidea*. Leaves variegated with white, yellowish, and pink. Polynesia. 1875.

— *Levangeerii*. Leaves marked with creamy-white and pink. Polynesia. 1875.

— *Lindeni*. Leaves banded with pale yellowish. S. Brazil. 1880.

— *lutescens-striata*. Madagascar. 1872.

— *Mackerreri*. 2. Leaves carmine and olive-green. Australia. 1877.

— *magnifica*. Leaves bronzy, with pinkish bloom, red margined. Polynesia. 1869.

— *metallica*. Leaves coppery when young, changing to bronzy-purple. Polynesia.

— *mirabilis*. Leaves variegated with white and rose. 1880.

— *Mooreaana*. Leaves bronzy-red, with red mid-rib and stalk. Polynesia. 1868.

— *nigro-striata*. Leaves obliquely-striped with brown. Solomon Isles. 1874.

— *ornata*. Leaves bronzy-green, margined with pink. Polynesia. 1873.

— *picata*. Leaves variegated with various shades of rose. Viti Levu. 1874.

— *porphyrophylla*. Leaves deep bronzy-green. Polynesia. 1870.

— *princeps*. Leaves bronzy, with rosy variegation. Polynesia. 1872.

— *pulchella*. Leaves deep bronzy-green, with wine-red margins. Polynesia. 1870.

— *Reali*. Leaves dark green, striped and edged with rose. Polynesia. 1874.

— *reza*. Leaves bronzy, with dark-red variegation. Polynesia. 1875.

— *Robinsoniana*. Leaves yellowish-white, crimson, and green. Solomon Isles. 1877.

— *rosea*. Leaves bronzy, with creamy and pink variegation. Polynesia. 1872.

— *Rothiana*. Leaves clear green, transparently reticulate-tessellate. Cormorin Isles.

— *rubeilla*. Young leaves variegated with bluish-rose. Polynesia. 1872.

— *rubra*. 10. Leaves reddish. New Holland. Gfl. 1864, 447.

— *spectabilis*. Polynesia. 1869.

— *splendens*. Leaves dark bronzy. Polynesia. 1871.

— *suleata*. Leaves dark green, grooved on the surface. Polynesia. 1872.

— *triumphans*. Leaves dark purplish. Polynesia. 1875.

— *Troubetzkoi*. Leaves bright green, edged and splashed with white. Melanesian Islands. 1875.

— *Wisemanii*. Leaves bronzy, margins red, young growth white. Polynesia. 1871.

— *Youngii*. Leaves coppery, striped with dark red. Polynesia. 1872.

There are also numerous garden varieties.

Coreopsis. (From *koris*, a bug, and *opsis*, like; referring to the appearance of the seeds. Nat. ord., *Compositae*; Tribe, *Helianthoideae*. Syn., *Chrysostemma*.)

Hardy annuals (marked A, or perennials P), 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 in the autumn and spring. Light, sandy soil.

- C. alata*. See *Verbesina occidentalis*.
 — *alba*. 6. White. June. Jamaica. 1699. A synonym of *Bidens pilosa*.
 — *alternifolia*. Jacq. H. Vind. t. 110. Is *Actinomeris squarrosa*.
 — *angustifolia*. 2. Yellow. July. N. Amer. 1778. P.
 — *aristosa*. 2-3. Yellow. September. United States. 1869. B. M. t. 6462. A.
 — *artemisiaefolia*. Jacq. Ic. t. 595. See *Cosmos sulphurea*.
 — *Atkinsoniana*. B. R. t. 1376. See *Calliopsis Atkinsoniana*. A.
 — *arguta*. 2. Yellow. August. Carolina.
 — *aurica*. 3. Yellow. August. N. Amer. 1785. B. R. t. 1228. A.
 — *auriculata*. 6. Yellow. July. Virginia. 1699. P.
 — *bicolor*. 2. Yellow. June. Arkansas. 1822. A.
 — *chrysantha*. 2. Yellow. August. W. Indies. 1752. P.
 — *coronata*. 2. Yellow. brown. July. Mexico. 1835. B. M. t. 3400. A.
 — *crassifolia*. See *C. lanceolata*, var. *villosa*.
 — *delphinifolia*. 3. Yellow. August. N. America. 1759. Syn., *C. verticillata*, B. M. t. 156. P.
 — *dichotoma*. See *C. gladiata*.
 — *diversifolia*. B. M. t. 3474. See *C. Drummondii*.
 — *Drummondii*. 2. Crimson. July. Carolina. 1833. Swt. Fl. Gard. ser. 2, t. 315. A. Syn., *C. diversifolia*.
 — *ferulifolia*. See *Bidens coreopsidis*.
 — *filifolia*. 2. Yellow. August. Texas. 1835. B. M. t. 3505. Syn., *Thelesperma filifolium*. A.
 — *gladiata*. 1. Yellow. September. N. America. 1827. Syn., *C. dichotoma*. P.
 — *grandiflora*. 3. Yellow. August. N. America. 1826. P.
 — *heterophylla*. See *Echinacea heterophylla*.
 — *incisa*. 6. Yellow. October. W. Indies. B. R. t. 7. P.
 — *integrifolia*. 3. Yellow. July. Carolina. P.
 — *lanceolata*. 3. Yellow. August. Carolina. 1724. B. M. t. 2451. P.
 — *villosa*. 3. Yellow. September. Carolina. 1786. Syn., *C. crassifolia*.
 — *latifolia*. 3. Yellow. August. Carolina. 1786. P.
 — *longipes*. 2. Yellow. April. Texas. 1835. B. M. t. 3586. P.
 — *maritima*. 3. Yellow. California. 1873. B. M. t. 6241. Syn., *Leptosyne maritima*. A.
 — *nudata*. 2-4. Purple-rose, yellow. S. United States. 1879. B. M. t. 6419. P.
 — *palmeta*. 3. Yellow. June. Louisiana. 1823. Syn., *C. praeox*. A.
 — *parviflora*. Jacq. H. Schoenb. t. 374. See *Cosmos parviflora*.
 — *praeox*. Rev. Hort. ser. 2, iv. p. 265. See *C. palmata*.
 — *procera*. See *Actinomeris procera*.
 — *reptans*. 6. Yellow. July. W. Indies. 1792. P.
 — *rosea*. 2. Red. July. North Casana. 1778. P.
 — *senifolia*. 4. Yellow. September. N. America. 1812. B. M. t. 3484. P.
 — *Stilmanii*. Yellow. California. 1873. Syn., *Leptosyne Stilmannii*. A.
 — *tenuifolia*. 2. Yellow. N. America. 1780. P.
 — *tinctoria*. B. M. t. 2512. See *Calliopsis tinctoria*.
 — *trichosperma*. 3. Yellow. August. United States. 1818.
 — *tripteris*. 6. Yellow. August. N. America. 1837. Syn., *Chrysostemma tripteris*, B. M. t. 3583. P.
 — *verticillata*. 2. Yellow. August. N. America. P. B. M. t. 156 is *C. delphinifolia*.

Corethrogyne. (From *korethron*, a broom, and *gyne*, a female; styles brushlike. Nat. ord., *Compositae*; Tribe, *Asteroidae*. Allied to *Aster*.)

Hardy perennial herb, clothed with a white woolly tomentum. Treatment the same as for *ASTER*.

C. spathulata. 1. Pink. California. 1873.

Corethrostylis. See **Lasiopetalum**.

Coriandrum. Coriander. (From *koris*, a bug; referring to the smell of the leaves. Nat. ord., *Umbelliferae*; Tribe, *Caucalimae*.)

A hardy annual; seeds sown in March; common soil.

C. sativum. 2. White. June. England. Eng. Bot. ed. 3, t. 632.

Coriaria. (From *corium*, a hide; in reference to the crustaceous covering of the fruit. Nat. ord., *Coriariaceae*. Dr. Lindley says, "It is very difficult to say what is the affinity of this plant.")

Ornamental hardy or half-hardy shrubs. Suckers and cuttings in sand, under a bell-glass.

C. myrtifolia. 6. Green. June. South Europe. 1629.

— *nepalensis*. 10. Brown. May. Nepal. Paxt. Fl. Gard. ii. p. 87, fig. 180.

— *sarmentosa*. 3. Green. June. New Zealand. 1823.

— *thymifolia*. New Grenada. 1889.

Coris. (A name adopted from *Dioscorides*. Nat. ord., *Primulaceae*; Tribe, *Corideae*. Allied to *Lubinia*.)

A pretty, hardy perennial. Increased by seeds, in March; sand and peat. Interesting little plant for a warm spot on a rockery.

C. monspeliensis. 1. Lilac. June. South Europe. 1640. B. M. t. 2131.

Cork-tree. *Quercus phellos*.

Cork Wood. *Anonua palustris*.

Cornelian Cherry. *Cornus mas-cula*.

Corn Flag. *Gladiolus*.

Cornish Moneywort. *Sibthorppia europaea*.

Corn Salad, or Lamb's Lettuce (*Valeriana olitoria*), 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. Threesowings 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., *Cornaceæ*.)

Hardy deciduous trees, shrubs, etc., except where otherwise specified. Propagated by seeds, layers, or cuttings, and root divisions; common soil and moist situation.

- C. alba*. 10. White. July. Siberia. 1741.
 — *rossica*. 8. White. July. Siberia. 1820.
 — *sibirica*. 10. White. August. Siberia. 1824.
 — *alternifolia*. 15. White. July. N. Amer. 1760.
 — *canadensis*. 1. Yellow. July. Canada. 1774. Herbaceous perennial. B. M. t. 880.
 — *capitata*. 10. White. August. Nepaul. 1825. Syn., *Benthamia fragifera*. B. M. t. 4641. It is doubtful whether this 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.
 — *circinata*. 6. White. July. N. Amer. 1784.
 — *florida*. 15. White. April. N. Amer. 1731. B. M. t. 526.
 — *floribunda*. Flowers tinged with bright red. N. America. 1889.
 — *grandis*. Green. Mexico. 1838. Half-hardy evergreen.
 — *japonica*. 8. Yellowish-red. Spring. Japan. 1847. Syn., *Benthamia japonica*.
 — *macrophylla*. White. July. Nepaul. 1827.
 — *ma's*. Yellow. February. Austria. 1596. Syn., *C. mascula*, B. M. t. 2675. Cornel. *au'rea elegantissima*. Leaves reddish, marked with creamy-white. 1877.
 — *fructu cæ'rae colorato*. 20. Yellow. February.
 — *variegata*. 8. Yellow. June. Austria. 1596.
 — *oblonga*. 15. Purple. Nepaul. 1818.
 — *paniculata*. 6. White. June. N. America. 1758.
 — *sanguinea*. 8. White. June. Britain. Eng. Bot. ed. 3, t. 635.
 — *foliis aureomarginatis grandifolia*. Leaves very large, variegated with gold. A sport. 1889.
 — *variegata*. 8. White. June. Britain.
 — *foliis variegatis*. 10. White. June. Britain.
 — *sericea*. 5. White. August. N. Amer. 1683.
 — *asperifolia*. 8. White. Carolina. Syn., *C. asperifolia*.

- C. sericea oblongifolia*. 8. White. August. Syn., *C. oblongifolia*.
 — *sibirica*. See *C. tatarica*.
 — *stolonifera*. 4-10. White. May. N. America. 1741. Red Osier Dogwood.
 — *striata*. 10. White. June. N. Amer. 1758.
 — *asperifolia*. 10. White.
 — *sempervirens*. 10. White. June.
 — *variegata*. 10. White. June. N. Amer. 1758.
 — *suecica*. 1. White. April. Britain. Herbaceous perennial. Eng. Bot. ed. 3, t. 634.
 — *tatarica*. 8. White. July. Siberia. 1824. Syn., *C. sibirica*.
 — *Gonchauti*. Leaves variegated. 1888.
 — *thelictis*. 18. White. June. Mongolia. 1871.

Cornu'tia. (Named after *Cornutus*, a French physician. Nat. ord., *Verbenaceæ*; Tribe, *Viticeæ*. Allied to *Callicarpa*.)

Stove evergreen shrubs. Loam and peat; cuttings in bottom-heat, under glass, in February or March.

- C. punctata*. Blue. W. Indies and Tropical America. B. M. t. 2611. Syn., *Hosta cœrulea*, Jacq. H. Schœnb. t. 114.
 — *pyramidalis*. 6. Blue. July. Mexico. 1733.

Coro'kia. (From *Korokia*, the native name. Nat. ord., *Cornaceæ*.)

Ornamental half-hardy evergreen shrubs; cuttings in sand under a bell-glass; layers in autumn.

- C. buddleoides*. 10. Yellow. New Zealand. 1870. Ic. Pl. t. 424.
 — *Cotoneaster*. 10. Yellow. New Zealand. 1876.

Coroni'lla. (From *corona*, a crown or garland; in reference to the disposition of the flowers. Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*.)

The juice of *C. varia* 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, ETC.

- C. cappadocica*. See *C. iberica*.
 — *cretica*. 1. Striped. June. Candia. 1731. Annual.
 — *emeroides*. Yellow. May to June. S. Europe. Sibth. Fl. Gr. t. 710.
 — *emerus*. 3. Red, yellow. April. France. 1596. Deciduous shrubs. B. M. t. 445; G. C. 1881, vol. 16, p. 105.
 — *coronata*. 2. Yellow. June. South Europe. 1776. Syn., *C. montana* of B. M. t. 907.
 — *globosa*. 1. White. September. Crete. 1800. Deciduous creeper.
 — *iberica*. 1. Yellow. July. Iberia. 1822. Deciduous trailer. B. M. t. 2646. Syn., *C. cappadocica*.
 — *ju'ncea*. 3. Yellow. June. France. 1656. Evergreen shrub. B. R. t. 822.
 — *squamata*. 1. White. June. Crete. 1820.
 — *varia*. 1. Pink. September. Europe. 1597. Deciduous creeper. B. M. t. 258.

GREENHOUSE EVERGREENS, ETC.

- C. arge'ntea*. 2. Yellow. May. Crete. 1864.
 — *glauca*. 2. Yellow. July. France. 1722. B. M. t. 13.
 — *variegata*. 4. Yellow. August. Gardens. B. M. t. 2179.

- C. minima*. 1. Yellow. July. South Europe. 1658. Syn., *C. vaginalis*.
 — *montana*. See *C. coronata* of B. M. t. 907, but not of De Candolle.
 — *pentaphylla*. 2. Yellow. June. Algiers. 1709.
 — *stipularis*. 2. Yellow. August. South Europe. 1596. Syn., *C. valentina*, B. M. t. 185.
 — *vagina lis*. See *C. minima*.
 — *viminalis*. 3. Yellow. August. Mogador. 1798.

Corre'a. (Named after *Correa*, a Portuguese botanist. Nat. ord., *Rutaceæ*; Tribe, *Boroniæ*.)

The settlers in Australia employed the leaves of *Correas*, particularly those of *C. alba*, for tea. Greenhouse evergreen shrubs. Cuttings of half-ripened shoots in sand, under a bell-glass, in bottom-heat, in spring. The finer sorts are also grafted on the commoner ones, such as *C. alba*. *C. speciosa* will scarcely strike at all; three parts sandy peat and one of turfy loam.

- C. alba*. 6. White. June. 1793. Andr. Rep. t. 18. Syn., *C. cotinifolia*.
 — *bicolor*. Crimson, tipped with white. 1840. A hybrid, probably between *C. pulchella* and *alba*. Paxt. Mag. ix. p. 267.
 — *cardinalis*. 3. Scarlet. March. B. M. t. 4912.
 — *ferruginea*. See *C. Laurenciana*.
 — *Harrisii*. Crimson. Hybrid. Paxt. Mag. vii. p. 79.
 — *Laurenciana*. 3. Green, white. April. 1836. Syn., *C. ferruginea*, Maud Bot. 3, t. 124.
 — *longiflora*. Pale rose. December. Hybrid. 1839. Paxt. Mag. vii. p. 195.
 — *pulchella*. 5. Scarlet. June. 1824. Maud Bot. 4, t. 152. Probably a form of *C. speciosa*.
 — *rufo*. 6. White. June. 1821.
 — *speciosa*. 3. Scarlet. June. 1806. B. M. t. 1746.
 — *virens*. 6. Green. July. 1800. B. R. t. 3. Syn., *C. viridiflora*, Andr. Rep. t. 436.

Cortu'sa. Bear's-ear Sanicle. (Named after *Cortusus*, an Italian botanist. Nat. ord., *Primulacæ*; Tribe, *Primulacæ*.)

Hardy perennials. *C. pubens* requires protection from excessive damp in winter; root division, seeds; loam and peat.

- C. Matthioli*. 1. Red. April. Swiss Alps. 1596. B. M. t. 987.
 — *grandiflora*. Red. Thian Shan. 1879.
 — *pubens*. 4. Magenta-purple. May. Transylvania. 1878.

Coryanthes. Helmet-flower. (From *korys*, a helmet, and *anthos*, a flower; in reference to the shape of the lip, or labellum. Nat. ord., *Orchideæ*; Tribe, *Vandæ-Stanhopeæ*.)

Stove orchids. Division; in pots well-drained; fibrous peat, chopped sphagnum, and small broken potsherds.

- C. Bungei*. Green, white, spotted red, orange. Venezuela. 1890. Lind. t. 244.
 — *elegantium*. Rio Negro. 1868. Often erroneously called *elegantissima*. Syn., *C. macrantha*, G. C. 1882, vol. 17, p. 593, f. 93.
 — *Fieldi*. Yellow, brown. May. S. Amer. 1845.
 — *lentiginosa*. Yellow. May. Guiana. 1837.

- C. macrantha*. 1. Brown, yellow. June. Caraccas. B. R. t. 1841.
 — *maculata*. 1. Yellow-spotted. June. Demerara. 1829. B. M. t. 3102.
 — *Albertina*. Yellow, spotted with crimson, white.
 — *Parkei*. 1. Yellow, purple. June. Demerara. 1839.
 — *punctata*. Yellow spotted with red. Warn. Orch. Alb. t. 98. Syn., *C. punctata*. B. R. t. 1793.
 — *macrostachya*. Orange, yellow, brown. Mexico. 1843.
 — *speciosa*. 1½. Yellow, green. May. Brazil. 1826. Paxt. Fl. Gard. iii. p. 106, f. 234. Syn., *Gongora speciosa*, B. M. t. 2755.
 — *alba*. 1½. White. June. Demerara. 1840.
 — *Summeriana*. 1½. Chocolate-brown. July. Brazil. 1854.

Corycium. (From *korys*, a helmet; referring to the shape of the flower. Nat. ord., *Orchideæ*; Tribe, *Ophrydeæ-Coryciæ*.)

One of those genera of terrestrial orchids from the Cape of Good Hope which no British gardener has yet succeeded in cultivating with success for any length of time.

- C. crispum*. 1. Yellow. July. 1825.
 — *orobanchoides*. 1. Yellow. July. 1825. B. R. 1838, t. 45.

Corydalis. (From *korydalos*, a lark, the spur of the flower resembling that of the lark. Nat. ord., *Papavera-cæ*; Tribe, *Fumariæ*.)

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. acaris*. 1. Pale yellow. July. Hungary. 1825.
 — *aurea*. 1. Yellow. June. N. Amer. 1812. Biennial. B. R. t. 66. Syn., *Fumaria aurea*.
 — *breviflora*. 2. Pale yellow. June. Kamtschatka. 1824.
 — *capnoides*. 2. White. July. South Europe. 1596. Biennials.
 — *claviculata*. 6. White, yellow. June. Britain. Climber. Syn., *Fumaria claviculata*.
 — *glauca*. 2. Yellow, purple. July. N. Amer. 1683. Syn., *Fumaria glauca*, B. M. t. 179.
 — *impatiens*. 1. Yellow. May. Siberia. 1823.
 — *stricta*. 1. Yellow. June. Siberia. 1827. Biennials.
 — *uralensis*. 1. Pale yellow. August. Kamtschatka. 1824. Biennials.

HERBACEOUS.

- C. flavula*. 4. Yellow. June. Russia. 1838.
 — *lutea*. 2. Yellow. July. England.
 — *paonifolia*. 2. Purple. February. Siberia. 1820.
 — *sibirica*. 1. Yellow. July. Siberia. 1810.

TUBEROUS-ROOTED.

- C. angustifolia*. 1. Purple. February. Iberia. 1819.
 — *bractea*. 1. Pale yellow. February. Siberia. 1829. B. M. t. 3242.
 — *bicalcarata*. 1. Pink. June.
 — *bulbosus*. See *C. solida*.
 — *caucasica*. 1. Purple. February. Caucasus. 1823.

- C. ca'va*. 1. Purple. February. Europe. 1596. Syn., *C. tuberosa*.
 — *albifo'ra*. 1. White. February. Europe. 1596. B. M. t. 2340.
 — *fabace'a*. 3. Purple. February. Germany. 1815. Syn., *Fumaria fabacea*, Fl. Dan. t. 1394.
 — *Gebler'i*. May. Altai. 1827.
 — *Kolpakowskya'na*. $\frac{3}{4}$. Pink, purple. April. Turkestan. 1879. Gf. t. 945.
 — *Ledebouria'na*. $\frac{3}{4}$. Pink, with a darker blotch. May. Altai. 1879.
 — *longifo'ra*. $\frac{3}{4}$. Pale rose. April. Altai. 1832. B. M. t. 2230.
 — *Marschallia'na*. 1. Purple. February. Tauria. 1824. Gf. t. 501.
 — *no'bilis*. 1. Lilac, yellow. May. Siberia. 1783. B. R. t. 395. Syn., *Fumaria nobilis*, B. M. t. 1953.
 — *paniculo'ra*. 1. Purple. February. Siberia. 1819.
 — *so'vida*. 1. Pink. February. Britain. Eng. Bot. ed. 3, t. 68. Syn., *C. bulbosa* and *Fumaria solida*.
 — *Gortschako'wi*. 1. Yellow. Turkestan. Gf. t. 1183.
 — *pa'vida*. $\frac{1}{2}$. Yellow. March. China and Japan. 1884. B. M. t. 6826. Syn., *C. aurea*, vars. *pallida* and *speciosa*.
 — *Semend'wi*. $\frac{1}{2}$. Golden yellow. April. Turkestan.
 — *Sewerz'wi*. 1. Golden yellow. W. Turkestan. 1883. Gf. t. 1077.
 — *specio'sa*. Yellow, brown. Manchuria. 1860.
 — *tubero'sa a'lba*. White. Europe. Syn., *C. cava*, var. *alba*.

EXCLUDED SPECIES.

- C. canadensis* and *tenuifo'ra*. See *Dicentra*.
 — *fungo'sa*. See *Adlumia cirrhosa*.

Corylo'psis. (From *korylos*, a hazel tree, and *opsis*, like; nut-like. Nat. ord., *Hamamelidaceae*.)

For cultivation, see HAMAMELIS.

- C. himalaya'na*. 20. Pale primrose. February. E. Himalayas. 1879. B. M. t. 6779. Shrub or small tree.
 — *spica'ta*. Yellow. February. Japan. 1864. Hardy fragrant shrub. B. M. t. 5458.

Co'rylus. Nut-tree. (From *korys*, a hood, or helmet; in reference to the calyx covering the nut. Nat. ord., *Cupuliferae*; Tribe, *Coryleae*.)

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*. 10. April. N. America. 1798. Syn., *C. humilis*.
 — *Avella'na*. 10. February. Britain. Common hazel or filbert.
 — *a'lba*. 10. February. Spain.
 — *au'ra*. Leaves yellow. 1879.
 — *barcelone'nsis*. 8. February. Spain.
 — *cri'spa*. 8. February.
 — *glomera'ta*. 8. February.
 — *gra'natis*. 8. February. S. Italy.
 — *heterophylla*. 20. Yellow, red. February. Dahuria. 1829.
 — *Lambe'rtii*. 10. February.
 — *ova'ta*. 8. February.
 — *pe'ndula*. Branches hanging down like the weeping-willow. 1870.
 — *pu'mila*. 6. February.
 — *purpu'ra*. 10. February.
 — *ru'bra*. 10. February.
 — *te'nuis*. 10. February.

- C. Avella'na tubulo'sa*. See *C. tubulosa*.
 — *tubulo'sa a'lba*. 10. February.
 — *variegata*. 8. February.
 — *colu'rna*. 10. February. Constantinople. 1665. Wats. Dendr. t. 99. Syn., *C. arborescens* of some gardens.
 — *heterophylla*. E. Asia. 1880.
 — *hu'milis*. See *C. americana*.
 — *rostra'ta*. 5. February. Mountains of the United States. 1745.
 — *tubulo'sa*. 10. February. South of Europe. 1759.

Corylus or Filbert Culture.

The following are the most esteemed kinds:—*White Filbert*; well known. *Red*; similar, but having a red skin. *Prolific cob*; a very large nut. *Cosford*; fine flavour, thin shell, great bearer. *Prolific dwarf*; well adapted for small gardens. *Gordon's thin-shelled*; a good nut. *Frizzled*; similar to the other filberts, husk more ornamental. *Spanish*; nuts large, round or ohlong. *Grandis*; nuts round, very hard.

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 hybridizer. Bearing, as it does, male and female blossoms separately, every opportunity exists for depriving any given kind of its catkins betimes.

Soil.—Any ordinary soil, if pretty good, will answer, provided it is not stagnant. A free, upland, light loam, however, is what they prefer. We have, nevertheless, known them succeed very well in a moorish-looking soil, and on well-drained peats, which had become sound through the application of marl or clay.

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 con-

fuse 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 sprays. 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 pollen 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.

Insects.—See **Curculio nucum** and **Aphis coryli**.

Corymb. An arrangement of flowers, in which the flower-stalks 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'la. (From *koryne*, a club; referring to the shape of the style. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. Allied to *Clianthus*.)

Stove evergreen shrub. Cuttings in sand under a glass, and in bottom-heat; peat and loam.

C. polyantha. 5. Purple. W. Ind. 1824.

Corynium Bejeri'ncki. A fungus causing *gumming* in fruit-trees.

Corynocarpus. (From *koryne*, a club, and *caryos*, a fruit; referring to the form of the fleshy seed. Nat. ord., *Anacardiaceæ*. Allied to *Theophrasta*.)

Greenhouse evergreen tree; readily increased by layers in light, rich soil.

C. laevigatus. 20. White. New Zealand. 1823.

B. M. t. 4379.

— *au'reo-marginatus*. Golden-yellow. New Zealand.

Corynophallus. (From *koryne*, a club, and *phallos*, a mace; alluding to the club-shaped appendix to the spadix. Nat. ord., *Araceæ*. Allied to *Amorphophallus*, with which it is united by *Bentham* and *Hooker*.)

Stove tuberous perennials, sometimes having an enormous spathe. For cultivation, see *ANCHOMANES*.

C. leone'nsis. 2. Spathe purple. Tropical Africa. 1873. Syn., *C. Afzelii* and *Amorphophallus leonensis*. Fl. Ser. t. 161.

— *elegans*. Stem green, leaf segments narrow. 1873.

— *latifolia*. Stem green, leaf segments broad. 1873.

— *spectabilis*. Stem puce-coloured, with dark streaks. 1873.

Corynostylis. (From *koryne*, a club, and *stylos*, a column; the style is club-shaped. Nat. ord., *Violaceæ*. Syn., *Calyptrion*.)

Pretty climbing stove perennials. Seeds, or cuttings of the young wood in sand, in bottom-heat and under a hand-glass.

C. albiflora. See *C. hybanthus*.

— *Auble'tii*. White. Guiana. 1823. Fl. Ser. t. 2213.

— *hybanthus*. White. Para. 1870. B. M. t. 5960. Syn., *C. albiflora*. Fl. and Pom. 1872, p. 9.

Corypha. Fan Palm. (From *koryphe*, the summit; in reference to the leaves growing in tufts on the top of this palm. Nat. ord., *Palmeæ*; Tribe, *Corypheæ*.)

Stove palms, except where otherwise mentioned; soil, rich, sandy loam; increased by seeds.

- C. australis*. See *Livistona australis*.
 — *de'cora*. Queensland.
 — *du'lcis*. Mexico. 1863.
 — *ela'ta*. 70. Bengal. 1825.
 — *geba'nga*. 60. Java. 1847.
 — *glauce'scens*. 100. E. Indies. 1820. *Sabal?*
 — *glauco'phylla*. Bourbon. 1826.
 — *mi'nor*. Jacq. Vind. iii. t. 8. See *Sabal*
Adamsi.
 — *palme'tto*. See *Chamærops palmetto*.
 — *Pu'mos*. See *Copernicia Pumos*.
 — *sylve'stris*. 50. Moluccas. 1825. Syn., *C.*
Utan.
 — *Talie'ra*. 100. E. Indies. 1823. Syn., *Taliera*
bengalensis.
 — *tecto'rum*. See *Copernicia tectorum*.
 — *umbraculifera* of Linnæus. 100. E. Indies.
 1742. Ill. Hort. 1862, p. 347. *C. um-*
braculifera of Jacquin is a species of
Sabal.
 — *U'tan*. See *C. sylvestris*.

Corysa'nthes. (From *korys*, a helmet, and *anthos*, a flower; flowers helmet-shaped. Nat. ord., *Orchidææ*; Tribe, *Neotticæ-Diurideæ*. Allied to *Pterostylis*.)

- Greenhouse terrestrial orchids of small size. Light sandy loam.
C. limbo'ta. Purple, white. Java. 1863. B. M. t. 5357.
 — *pi'cta*. Purple, yellow. Java. 1867. Syn., *Calcearia picta*.

Cosbæ'a. (Probably complimentary. Nat. ord., *Schizandraceæ*.)
 Greenhouse creeper.

- C. cocci'nea*. Green, scarlet. S. China. Ill. Hort. 1855, p. 71. Syns., *Kadsura chinensis* of Hance, and *Schizandra Hanceana*.

Cosi'nium. (From *koskinon*, a sieve; alluding to the curious structure of the wood. Nat. ord., *Menispermaceæ*; Tribe, *Tinosporeæ*.)

Stove climber. Cuttings of young growth, during summer, under a hand-glass. Light loam and peat. The wood of this plant is used medicinally in Ceylon.

- C. fenestra'tum*. Brown. Ceylon. 1852. B. M. t. 4658.

Cosma'nthus. (From *kosmos*, beautiful, and *anthos*, a flower. Nat. ord., *Hydrophyllaceæ*; Tribe, *Phaceliææ*. Allied to *Phacelia*.)

- Hardy annuals. Seeds; sandy soil.
C. fimbria'tus. 3. Pale flesh. June. N. America. Syn., *Phacelia fimbriata*.
 — *grandifo'rus*. 5. Purple. California. B. M. t. 5029.

Cosme'lia. (From *kosmeo*, to adorn. Nat. ord., *Epacridaceæ*.)

- Greenhouse evergreen shrub. Cuttings in summer months; sandy peat and sand.
C. ru'bra. Red. Australia. 1825. Fl. Ser. t. 1175.

Cosmibue'na. (Named in honour of *Cosma Bueno*, a Spanish physician, who wrote on the natural history of Peru. Nat. ord., *Rubiaceæ*; Tribe, *Cinchoneæ*.)

Handsome stove evergreen trees (shrubs under

cultivation). Seeds, cuttings of ripe wood in sand, under a hand-glass, and in bottom-heat. Turfy loam and sandy peat.

- C. obtusifolia latifolia*. 20. White. Columbia. 1876. B. M. t. 6259. Syn., *Casacaria grandifolia*.

Cosmi'dium. See *Thelesperma*.

Co'smos. (From *kosmos*, beautiful; in reference to the ornamental flowers. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. 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*. 3. Lilac. September. Mexico. 1835. Hardy tuber. B. M. t. 5227.
 — *scabioso'des*. 4. Scarlet. September. Mexico. Greenhouse tuber. B. R. 1833, t. 15.

ANNUALS.

- C. atosanguineus*. 3. Deep purple-blood-colour. Mexico. 1861.
 — *biginna'tus*. 3. Purple. July. Mexico. 1799.
 — *albifo'rus*. White. 1890.
 — *parvifo'rus*. Small-flowered. 1882.
 — *chrysanthemo'des*. 2. Yellow. July. S. Amer. 1826. Syn., *C. chrysanthemifolius*.
 — *crithmifo'lius*. 2. Yellow. September. Mexico. 1826.
 — *hybridus* 7. White, or pale rose. Mexico. 1888.
 — *lu'teus*. 2. Yellow. October. Mexico. 1811.
 — *parvifo'rus*. 2. White. July. Mexico. 1800. Hardy. Syn., *Coreopsis parviflora*, Jacq. H. Schœnb. t. 374.
 — *sulphu'reus*. 2. Yellow. July. Mexico. 1799. Hardy. Syn., *Coreopsis artemisiæfolia*, Jacq. Ic. t. 595.
 — *tene'lius*. 2. Yellow. October. Mexico. 1824.
 — *tenuifo'lius*. 2. Purple. September. Mexico. 1836. Hardy.

Cossi'gnia. (Named after *Cossigny*, a French naturalist. Nat. ord., *Sapindaceæ*. 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*. 10. Mauritius. 1824.

Co'ssus ligni'perda. 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 1,000 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.

Costate. Ribbed.

Costmary, or Alecost. *Tanacetum bassamita*.

Costus. (An ancient name, adopted from Pliny. Nat. ord., *Scitamineæ*; Tribe, *Zingiberæ*.)

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 *Cardopatium*. The *Costus* of Cashmere, employed to protect bales of shawls from moths, is the root of *Aukla'ndia costus*. Stove herbaceous perennials of easy growth, and readily increased by root division; sandy loam, with a little peat.

C. A'fer. 2. White. June. Sierra Leone. 1822. B. R. t. 683.

— *albe'scens*. Central America. 1868.

— *arab'icus*. See *C. speciosus*.

— *cine'reus*. Central America. 1868.

— *com'osus*. 4. Yellow Caraccas. Jacq. Ic. t. 202.

— *cyll'ndricus*. 5. Yellow. Trinidad. A variety from Martinique has bluish flowers.

— *di'scolor*. 4. White. June. Maran, Brazil. 1823.

— *e'legans*. See *C. Malortieanus*.

— *igneus*. Bright orange. Bahia. 1884. III.

Hort. n. s. t. 511.

— *lan'a'tus*. 3. May. S. America. 1820.

— *lu'cidus*. Central America. 1868.

— *macula'tus*. 2. White. July. Sierra Leone. 1822.

— *Malortieanus*. Yellow, orange. Costa Rica. 1862. B. M. t. 5394. Syn., *C. elegans*.

— *mosa'icus*. Leaves dark green, tessellated with silvery-grey. Congo.

— *nepale'nsis*. 3. White. July. E. Ind. 1799. Gfl. t. 381.

— *pic'tus*. 2. Yellow, purple. July. Mexico. 1822. B. R. t. 1594.

— *Piso'nis*. 3. Crimson. June. Maran, Brazil. 1823. B. R. t. 899. Syns. *C. spiralis* and *Alpinia spiralis*.

— *specio'sus*. 3. White. August. E. Ind. 1799. Syn., *C. arabicus*.

— *angustifo'lius* of B. R. t. 665 is probably a form of *C. nepalensis*.

— *spica'tus*. 1. Yellow. June. W. Ind. 1793.

— *spira'tis*. See *C. Pisonis*.

— *Verschaffeltia'nis*. 3. Yellowish. St. Catherine's, Brazil. III. Hort. t. 177.

— *villosi'ssimus*. 6. Yellow. November. St. Vincent. 1822.

Cotoneaster. (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., *Rosaceæ*; Tribe, *Pomeæ*.)

Hardy upright or trailing shrubs, or small trees, easily increased by layers or seed. Common soil.

C. acuminata. 4. Pink. April. Nepal. 1820. Syn., *Mespilus acuminata*, B. C. t. 919.

— *affinis*. 4. Pink. April. Nepal. 1820.

— *bacillaris*. Nepal. 1841.

— *buzio'flia*. 3. White. April. Nepal. 1824. Ref. Bot. t. 52.

— *marginata*. 3. White. April. Saharunpore. 1835.

— *congesta*. White. N. India. 1868. Ref. Bot. t. 51.

— *denticulata*. 6. White. Mexico. 1826. Syn., *Nägelia denticulata*.

— *emarginata*. White. April. Nepal.

— *Fontane'sii*. White; berries bright-red. 1884.

— *frigida*. 10. White, green. April. Nepal. 1824. B. R. t. 1229.

— *himala'ica*. White. Himalayas. 1876.

— *Hookeri*.

— *horizonta'lis*. Rosy. China. 1879. Rev. Hort. 1885, p. 136.

— *laxiflora*. 4. Pink. April. 1826.

— *uniflora*. 3. White. May. Nepal.

— *microphylla*. 4. White. April. Nepal. 1825. B. R. t. 1114.

- C. multiflora*. 4. White. May. Altai. 1837.
 — *nummularia*. 19. White, green. April. Nepaul. 1824. Syn., *C. elliptica*.
 — *prostrata*. White. N. India. 1868. Ref. Bot. t. 53.
 — *rotundifolia*. 3. White. April. Nepaul. 1820. Syns., *C. Uva-ursi*, and *C. microphylla*, var. *Uva-ursi*, B. R. t. 1187.
 — *Roylei*. White. North India. 1845.
 — *sikkimensis*. White; fruit coral-red. Sikkim. 1890.
 — *Simo'nsii*. Khasia. 1868. Ref. Bot. t. 55.
 — *thymifolia*. 1. White. April. Nepaul. 1852. G. C. 1882, vol. 18, p. 681.
 — *tomentosa*. 4. Pink. April. 1759.
 — *vulgaris*. 4. Pink. April. Europe. 1656. Eng. Bot. ed. 3, t. 477. The Great Orme's Head is the only British locality of this plant. Syn., *Mespilus Cotoneaster*.
 — *depressa*. White. April. Europe.
 — *erythrocarpa*. 4. White. April. Europe.
 — *melanocarpa*. 8. White. April. Europe.

Cotton. *Gossypium*.

Cotton Thistle. *Onopordon*.

Cotula quinqueloba. See *Lidbeckia lobata*.

Cotyledon. Navelwort. (A name adopted from Pliny. Nat. ord., *Crasulaceae*. Allied to *Sedum*.) See also **Echeveria**.

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 South Africa, except where otherwise mentioned; sandy loam, with a little old mortar mixed with it, and plenty of drainage; cuttings at any season.

HARDY.

- C. erecta*. Yellow. England. Syn., *Umbilicus erectus*.
 — *glaber*. Yellowish, purplish. Turkestan. 1880. Gfl. t. 1019, f. 1. Syn., *Umbilicus glaber*.
 — *hispanica*. $\frac{1}{2}$. Red. June. Spain. 1796. Syn., *Pistorinia hispanica*.
 — *malacophylla*. 1. Pale yellow. June. Dahuria. 1815.
 — *platyphylla*. $\frac{1}{2}$. White. Altai. 1880. Syn., *Umbilicus platyphyllus*.
 — *serrata*. Purple. June. Siberia. 1732. Syn., *Umbilicus serratus*.
 — *spinosa*. $\frac{1}{2}$. White. June. Siberia. 1793. Syn., *Umbilicus spinosus*.
 — *turkestanica*. $\frac{1}{2}$. White, purple. Turkestan. 1880. Syn., *Umbilicus turkestanicus*.
 — *Umbilicus*. Yellow. June. Sicily. 1828. Syn., *Umbilicus horizontalis*.

GREENHOUSE EVERGREENS.

- C. adunca*. 2-4. Yellow, pink. Mexico. Syn., *Pachyphytum roseum*.
 — *agavoides*. Orange. Mexico. Syn., *Echeveria agavoides*.
 — *altirans*. 1. July. 1816.
 — *atropurpurea*. Coral-red. Mexico. 1869. Syn., *Echeveria atropurpurea*.
 — *cacalioides*. 1. Yellow. May. 1818.
 — *cæspitosa*. 1. Yellow. July. California. 1796. Syn., *Echeveria cæspitosa*.
 — *californica*. $\frac{1}{2}$. Pale yellow. California. 1855. Syn., *Echeveria californica*.
 — *canaliculata*. 2. Red. April. Mexico. 1846.
 — *carnicolor*. $\frac{1}{2}$. Coral-red. Mexico. 1869. Syn., *Echeveria carnicolor*.
 — *clavifolia*. 1. Purple. September. 1824.
 — *coccinea*. 2. Scarlet. October. Mexico. 1816. Syn., *Echeveria coccinea*.

- C. Cooperi*. $\frac{1}{2}$. Pink. S. Africa. 1860
 — *Corderoyi*. 1 $\frac{1}{2}$. Red, yellow. Mexico? 1874. Syn., *Echeveria Corderoyi*.
 — *coriscans*. 1. Orange. June. 1818. B. M. t. 2601.
 — *crassifolia*. 2. 1824.
 — *cristata*. 1. Variegated. September. 1818.
 — *cuneata*. 1. May. 1818.
 — *cuneiformis*. 1. 1823.
 — *curviflora*. 2. Orange. October. 1818. B. M. t. 2044.
 — *cymosa*. 1. Yellow. Mexico. 1869.
 — *decipiens*. $\frac{1}{2}$. White. Peru. 1868.
 — *decussata*. 2. Scarlet. August. 1819. B. R. t. 915.
 — *dichotoma*. 1. June. 1818.
 — *edulis*. Pale green. August. California. 1883.
 — *elata*. 2. June. 1816.
 — *fascicularis*. 1. Red. July. 1759.
 — *fulgens*. 1. Coral-red, yellow. Mexico. Syn., *Echeveria fulgens*.
 — *gibbiflora*. 2. Yellow. Pink. September. Mexico. 1826. Syn., *Echeveria gibbiflora*, B. R. t. 1247.
 — *metallica*. Mexico. Syn., *Echeveria metallica*.
 — *glauca*. $\frac{1}{2}$. Scarlet, yellow. Mexico. Syn., *Echeveria glauca*.
 — *globularifolia*. White, red. Syria. 1869.
 — *gracilis*. 1. July. 1800.
 — *hemisphaerica*. 1. White, purple. June. 1731.
 — *interjecta*. $\frac{1}{2}$. July. 1824.
 — *jasmyniflora*. 1. White, purple. July. 1818.
 — *lanceifolia*. $\frac{1}{2}$. Yellow. 1879.
 — *Lievenii*. $\frac{1}{2}$. Red. May. Altai. 1832. Syn., *Umbilicus Lievenii*.
 — *linguifolia*. 1. Yellowish. Mexico. Syn., *Pachyphytum lingua*.
 — *maculata*. 1. White, purple. June. 1818.
 — *mammillaris*. 1. White, purple. June. 1818.
 — *nodulosa*. $\frac{1}{2}$. Yellow, red. Mexico.
 — *nodosa*. $\frac{1}{2}$. Yellow, red. Mexico.
 — *oblonga*. 2. Red. August. 1690.
 — *orbiculata*. 2. Red. July. 1798. B. M. t. 321.
 — *ovata*. 2. Red. August. 1789. B. C. t. 1392.
 — *Pachyphytum*. 1. Red. Mexico. Syn., *Pachyphytum bracteosum*.
 — *papillaris*. 2. Red. June. 1822. B. R. t. 915.
 — *Peacockii*. 1. Orange-red. July. New Mexico. 1874. Syn., *Echeveria Desmetiana*, *E. Peacockii*, and *E. peruviana*.
 — *Pestalozzei*. Pink. Cilicia. 1877.
 — *pubescens*. Coral-red, yellow. Mexico. Syn., *Echeveria pubescens*.
 — *pumila*. $\frac{1}{2}$. Yellow, red. Mexico. Syn., *Echeveria pumila*.
 — *quitesis*. $\frac{1}{2}$. Scarlet. August. Quito. 1851.
 — *ramosa*. 1. June. 1748.
 — *ramosissima*. 1. May. 1816.
 — *retusa*. 1 $\frac{1}{2}$. Yellow. Mexico. 1846.
 — *floribunda*. 1 $\frac{1}{2}$. Orange-red. Mexico. 1874.
 — *rhombifolia*. 1. June. 1823.
 — *rosacea*. Mexico? 1873.
 — *rotundifolia*. 1. June. 1826.
 — *Salzmanii*. Yellow, dotted red. July. N. Africa. 1868.
 — *Sempervium*. $\frac{1}{2}$. Caucasus. 1836.
 — *spuria*. 1. July. 1731.
 — *stolonifera*. Scarlet, yellow. Mexico. Syn., *Echeveria stolonifera*.
 — *teretifolia*. 1 $\frac{1}{2}$. Yellow. July. S. Africa. 1862.
 — *tricuspidata*. 1. July. 1823.
 — *triflora*. 1. Pink, white. June. 1821.
 — *tuberculosa*. 1. Orange. July. 1820.
 — *undulata*. 1. June. 1818.
 — *ungulata*. 2. May. Purple. 1818.

C. veluti'na. 2-3. Yellow, red. S. Africa. 1858.

— *viridis*. 2. 1824.

C. (Echeve'ria) cine'rea, *cya'nea*, *dealba'ta*, *grac'ilima*, *crista'ta*, *herba'cea*, *murona'ta*, *glau'ca*, *pachyphyto'i'des*, *pulche'rlla*, *rotundi'folia*, *sca'phylla*, *Schidecke'rii*, and *viola'cea* are garden hybrids.

Couch Grass. (*Triticum repens*.)

A weed, the creeping underground stems of which render it very difficult to be destroyed: constantly and carefully forking it out of the soil when ever seen, and burning it, is the most effectual remedy.

Coulte'ria. (Named after Dr. Coulter. Nat. ord., *Leguminosæ*; Tribe, *Eucesa'lpineæ*. Allied to *Poincinia*.)

Stove evergreen shrubs. Peat and loam; seeds.

C. horrida. 15. Orange. Cartbagena. 1824.

Syn., *Cæsalpinia horrida*.

— *mexica'na*. 12. Yellow. E. Ind. 1820.

Syn., *Cæsalpinia vesicaria*.

— *tincto'ria*. 12. Orange. Cartbagena. 1822.

Syns., *Cæsalpinia pectinata* and *C. tinctoria*.

Course'tia. (Named after Courset, a botanist. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. Allied to *Robinia*.)

Stove evergreens. Cuttings of firm young shoots, in spring or beginning of summer, in sand, under a bell-glass, and in a mild bottom-heat; loam and peat, well drained.

C. tomento'sa. Yellow. June. Peru. 1824.

— *virga'ta*. Yellow. June. Trinidad. 1820.

Cousi'nia. (Named after Cousin, a French botanist. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*. Allied to *Carduus*.)

Hardy plants. Annuals and biennials, by seeds at the end of March, in the garden-border; perennials, by division in autumn or spring.

C. cardui'formis. Purple. July. Iberia. 1804.

— *cynaro'i'des*. Whit. Caucasus. Biennial.

— *Hohen'a'keri*. Yellow. July. Caucasus. 1836.

— *hy'stria*. Purple. June. Russia. 1838.

— *macroc'phala*. Pale yellow. Caucasus. 1823.

Biennial.

— *tene'lla*. Purple. Armenia. 1837. Annual.

— *wolge'nsis*. Purple. Wolga. 1804.

Coussa'poa dealba'ta See Ficus.

Couta'rea. (From *Coutari*, its name in Guiana. Nat. ord., *Rubiaceæ*; Tribe, *Cinchoneæ*. Allied to *Cinchona*.)

The *Cinchona* bark of French Guiana is the produce of this fine tree. Stove evergreen. Sandy peat and loam; cuttings in heat, under glass, in spring months.

C. Scherffia'na. White. Columbia. III. Hort. 1878, p. 321.

— *specio'sa*. 12. Purple. Guiana. 1803.

Coutou'bea. (From *Goutoubi*, its name in Guiana. Nat. ord., *Gentianeaceæ*; Tribe, *Chironieæ*. 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. 3. White. July. Brazil. 1824.

Annual.

— *spica'ta*. 2. White. July. Tropical S. America. 1823. Biennial.

— *verticilla'ta*. See *Encostema litorale*.

Cove'llia. See Ficus.

Cowa'nia. (Named after Mr. Cowan. Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*. Allied to *Geum*.)

Greenhouse evergreen shrub. Sandy peat and loam; propagated by cuttings under glass, in heat, but not easily.

C. plica'ta. 2. Red. June. Mexico. Swt. Fl. Gard. ser. 2, t. 400.

Cowberry. *Vaccinium vitis-idaea*.

Cowdie Pine. *Dammara australis*.

Cow-dung. See Dung.

Cow-grass. *Trifolium me'dium*.

Cow-herb. *Saponaria vacca'ria*.

Cow-itch. *Mucuna urens*.

Cow-itch cherry. *Malpighia urens*.

Cow-parsnip. *Heracle'um*.

Cowslip. (*Pri'mula ve'ris*.) 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 much the same as that of the *Auricula*.

Cow-tree. *Brosim'um*.

Crab or Wild Apple. *Py'rus acer'ba*.

Cra'mbe: Sea-kale. (The Greek name for Sea-kale. Nat. ord., *Cruciferae*; Tribe, *Cakileæ*.)

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 perennials, of easy growth in rich garden-soil; root division, or seeds sown in March.

C. cordi'folia. 6. White. May. Caucasus. 1822.

— *ju'ncea*. 2. White. May. Iberia. 1828.

— *mari'tima*. 1½. White. May. Britain.

Eng. Bot. ed. 3, t. 80.

— *orienta'lis*. White. Jacq. Ic. t. 128.

— *tata'rica*. 3. White. June. Siberia. 1754.

Jacq. Ic. t. 129.

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, which is the best mode. *Seeds* sown towards the end of March, or beginning of April, in a well-manured and deeply-trenched soil, and lined out into four-foot beds, and

with two-foot alleys between. Sow the seeds in patches two feet distant from patch to patch. The patches should be made by drawing a circular drill about eight inches in diameter, and two inches deep. Place therein about eight seeds, at equal distances round; and, when the seedlings are up and well established, they should be thinned out, leaving from three to four plants in each patch, at equal distances, to form the crop. If the plantation be made from *one year-old plants*, then three plants should be planted triangularly in each patch, the patches, as before directed, two feet distant from each other. If the plantation is made with pieces or *slips* of crowns, which will do nearly as well, plant in the same way; and the best times are the end of March or beginning of April. Should the weather be dry, watering will be required. With good attention to earth-stirring during the summer months, the plants will be sufficiently strong to force the following season, and may remain to cut from for many years.

In sowing for *transplanting*, the drills should be at least two feet from drill to drill, and two inches deep, and seeds about five inches apart in the drill, and the seedlings attended to as before during the summer.

To force Sea-kale.—Some prefer taking up plants either one year or more old, and placing the roses carefully on a gentle hotbed made up for the purpose, or carefully planting them in pots or boxes, to be placed in other warm structures, of course, in either case, to be kept in the dark; but we prefer, in all cases, to force this vegetable in the open ground, by inverting pots over the crowns, and covering over them dung or leaves. If dung is employed it should be well worked, as for other forcing purposes; but the best materials for covering the crowns and pots are leaves, which we yearly collect in a corner for the purpose; no turning over is requisite. A dry, calm day should always be chosen for covering up; and the whole of the work should be done at the same time, first placing the pots all ready to suit each crown; then with the lime-bag give each crown a good dusting over with quick-lime, which will destroy all worms and slugs; put on the pots immediately, and the warm leaves over them. The pots should be covered with the driest parts first. When leaves are used, these should be covered over with some long, littery material, to prevent their being blown about by winds. The

whole covering should be from a foot to a foot and a half thick every way round the pots, and put together snug and tight. We always make our first covering (to be ready to cut kale by Christmas day) during the first fortnight in November. Of course the weather has something to do with the covering required. The heat had better be too low than too high; the best temperatures are from 50° to 60°, and should never exceed 65°. We at all times use a few coal-ashes, just enough to cover the crowns. When we cut the kale, this prevents the slugs, etc., eating into the crowns. This remains until cutting ceases, and the materials and pots are cleared away; then the whole is carefully forked over, and the ashes spread about with the hand, and all is made tidy for the summer growth. See **Sea-kale**.

Cranberry. *Oxycoccus palustris*.

Crane's-bill. *Geranium*.

Crane Fly. *Tipula oleracea*.

Craniolaria. (From *cranium*, a skull; the ripe fruit is said to resemble a skull. Nat. ord., *Pedalinea*.)

Handsome greenhouse annual. For cultivation, see MARTYNNIA.

C. annua. Sulphur, dotted white. July. S. America. 1733. Syn., *Martynia Craniolaria*.

Craspedia. (From *kraspedon*, a fringe; form of the pappus. Nat. ord., *Compositae*; Tribe, *Inuloideae*.)

Half-hardy annual. See ANNUALS for cultivation.

C. Richea. 1. Yellow. Swan River. 1881. B. M. t. 5271. Syn., *C. glauca*, B. R. t. 1908.

— *macrocephala*. 1½. Pale yellow. Australia. B. M. t. 3415.

Cra'ssula. (From the diminutive of *crassus*, thick, or succulent; in reference to their leaves, etc. Nat. ord., *Crassulaceae*. Syn., *Turgosia*.)

Greenhouse plants from South Africa, except where otherwise mentioned.

ANNUALS.

C. diffusa. ½. Pink. June. 1774.

— *expansa*. ½. White. June. 1774. Syn., *Dasystemon calycinum*. This has been erroneously said to come from Australia.

— *glabra*. ½. White. August. 1774.

— *glomerata*. ½. White. September. 1774.

— *Magnolia*. ½. White. June. South Europe. 1800.

— *moschata*. ½. White. September. N. S. Wales. 1794.

— *pulchella*. ½. Red. May. 1810.

— *retrofracta*. ½. Yellow. June. 1788.

— *rubens*. ½. Pink. May. Italy. 1759.

— *subulata*. ½. June. 1800.

— *verticillaris*. ½. Pink. July. South Europe. 1788.

BIENNIALS.

- C. aloides*. White. July. 1774.
 — *capitellata*. White. July. 1774. B. C.
 t. 1029.
 — *centauroides*. $\frac{1}{2}$. Pink. May. 1774. B. M.
 t. 1765.
 — *corymbulosa*. 1. White. November. 1818.
 — *lineolata*. $\frac{1}{2}$. Yellow. July. 1774.
 — *linguifolia*. $\frac{1}{2}$. White. August. 1803.
 — *obovata*. White. June. 1818.
 — *perisulata*. 1. White. October. 1824.
 — *sparsa*. $\frac{1}{2}$. White. 1774.
 — *tomentosa*. White. April. 1818.
 — *liverrita*. White. March. 1818. B. R.
 t. 1344.

EVERGREENS AND HERBACEOUS.

- C. acutifolia*. $\frac{1}{2}$. White. July. Greece. 1795.
 — *albiflora*. $\frac{1}{2}$. White. June. 1800. B. M.
 t. 2391. Syn., *Rochea albiflora*.
 — *alpestris*. $\frac{1}{2}$. White. S. Africa. 1878.
 — *arborescens*. 3. Pink. May. 1730.
 — *bibracteata*. $\frac{1}{2}$. White. August. 1823.
 — *maejor*. $\frac{1}{2}$. White. August. 1823.
 — *biconvexa*. $\frac{1}{2}$. White. August. 1800.
 — *biplanata*. 1. White. September. 1823.
 — *Bolvusii*. One-sixth. White. Summer. S.
 Africa. 1875.
 — *bullulata*. 1. Yellow. August. 1800.
 — *canescens*. $\frac{1}{2}$. White. July. 1800. Syn.,
Globulea canescens.
 — *clivata*. $\frac{1}{2}$. Yellow. July. 1732.
 — *meadia*. $\frac{1}{2}$. Yellow. July. 1818.
 — *menor*. $\frac{1}{2}$. Yellow. July. 1818.
 — *coccinea*. Red. B. M. t. 435.
 — *coccinea*. $\frac{1}{2}$. Scarlet. July. 1823.
 — *columbaris*. $\frac{1}{2}$. White. 1789.
 — *concinna*. $\frac{1}{2}$. White. July. 1818.
 — *Cooperi*. 2. White. S. Africa. 1862.
 — *cordata*. $\frac{1}{2}$. Pink. July. 1774. Jacq. H.
 Schenb. t. 431.
 — *Cotyledon*. 1. White. 1800. Herbaceous.
 B. M. t. 384.
 — *cultrata*. 1. White. July. 1732. B. M.
 t. 1940. Syn., *Globulea cultrata*.
 — *dejeana*. 1. White. July. 1820.
 — *ericoides*. $\frac{1}{2}$. White. September. 1820.
 — *falcata*. Yellow, red. S. Africa. 1785.
 B. M. t. 2035. Syns., *C. obliqua*, Andr.
 Rep. t. 414, and *Rochea falcata*.
 — *filicaulis*. $\frac{1}{2}$. White. August. 1820.
 — *fruticulosa*. White.
 — *globiflora*. 1. White. March. 1809. Syn.,
Septas capensis, var. *globiflora*, B. M.
 t. 1472.
 — *gracilis*. Bright red. 1884. Dwarf.
 — *imbricata*. 1. White. June. 1760.
 — *impressa*. $\frac{1}{2}$. Pink. S. Africa. 1809. Syn.,
C. Schmidtii, Gf. t. 1225.
 — *jasminea*. White, tipped crimson. June. S.
 Africa. B. M. t. 2178.
 — *laetea*. $\frac{1}{2}$. White. September. 1774. B.
 M. t. 1771.
 — *marginalis*. 2. Pale yellow. July. 1774.
 Jacq. H. Schenb. t. 471.
 — *monticola*. 1. Pink. 1882.
 — *nudicaulis*. $\frac{1}{2}$. White. July. 1732. Syn.,
Globulea nudicaulis.
 — *obliqua*. Andr. Rep. t. 414. See *C. falcata*.
 — *obtusicaulis*. $\frac{1}{2}$. 1812.
 — *obvallata*. $\frac{1}{2}$. White. July. 1795. Syn.,
Globulea obvallata.
 — *odoratissima*. White. June. S. Africa. Jacq.
 H. Schenb. t. 434.
 — *orbicularis*. $\frac{1}{2}$. Pink. August. 1731. Her-
 baceous.
 — *pauciflora*. 3. White. S. Africa. 1879.
 — *pellucida*. 1. Pink. August. 1732.
 — *perfoliata*. 2. Yellow. August. S. Africa.
 Jacq. H. Schenb. t. 432.
 — *perfoliata*. 1. Pink. September. 1785.
 — *perfoliata*. 4. Scarlet. July. 1700. Andr.
 Rep. t. 656. Syn., *Rochea perfoliata*.

- C. profusa*. This is the same as *C. marginalis*.
 — *punctata*. 1. White. June. 1759.
 — *quadrifida*. Pinkish-white. Summer. S.
 Africa. 1872.
 — *ramosa*. 2. Pink. July. 1774.
 — *ramuliflora*. 1. White. June. 1822.
 — *recurva*. 1. Crimson. Zululand. 1890.
 — *revolvens*. 1. White. August. 1820.
 — *rhomboides*. $\frac{1}{2}$. Flesh-coloured. Transvaal.
 1886.
 — *rosularis*. $\frac{1}{2}$. White. July. 1819. Herbaceous.
 — *rotundifolia*. 1. White. August. 1820.
 — *Saxifraga*. $\frac{1}{2}$. Pinkish. June. S. Africa.
 1873.
 — *scaevola*. $\frac{1}{2}$. Pale yellow. June. 1730.
 — *scabra*. $\frac{1}{2}$. White. 1810.
 — *Schmidtii*. Gf. t. 1225. See *C. impressa*.
 — *Septas*. 1. White. August. 1774. Syn.,
Septas capensis.
 — *spathulata*. $\frac{1}{2}$. White. August. 1774.
 — *squamulosa*. $\frac{1}{2}$. White. July. 1817.
 — *sulcata*. $\frac{1}{2}$. White. August. 1813. Syn.,
Globulea sulcata.
 — *telephoides*. 1. White. July. 1818.
 — *tetragona*. 2. White. August. 1711.
 — *torquata*. 1. Greenish. S. Africa.
 — *umbellata*. 1. Pinkish. Jacq. Ic. t. 352.
 — *versicolor*. Pink, white. S. Africa. B. M.
 t. 2356.

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 take off a few of the top leaves, 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. coccinea*, 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 successive ones growing on at the same time; and, as soon as the plants have 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.

Every morsel of the old shoots cut off in August will make *cuttings*; but the best cuttings are obtained from the top ends of young, vigorous shoots; they will root either in heat or cold, at any time. Abundance of air, strong sunlight, and plenty of water during their two months of active growth; but little during the rest of the summer and autumn, and scarcely any in winter, are the leading principles in their culture.

Cratægus. The Hawthorn. (From *kratos*, strength; in reference to the strength and hardness of the wood. Nat. ord., *Rosaceæ*; Tribe, *Pomeæ*.)

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 particularized. 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. alpi'na*. 20. May. Italy.
- *apijfo'lia*. 15. May. N. Amer. 1812.
- *mi'nor*. May.
- *Aro'nta*. 15. May. South Europe. 1810.
- Berries yellow. B. R. t. 1897.
- *grandifl'o'ra*. 15. May. 1840.
- *Azaro'lus*. 15. May. South Europe. 1640.
- Berries red. Andr. Rep. t. 579.
- *carpa'tica*. 20. May. Carpathian Mountains.
- *cocci'nea*. 20. May. N. Amer. 1683. B. M. t. 3482.
- *corelli'na*. 15. May. France.
- *corda'ta*. B. R. t. 1151.
- *glandulo'sa*. 20. May. N. Amer. 1759.
- Berries red. Syn., *C. glandulosa*, B. C. t. 1012.
- *indenta'ta*. 12. May. N. Amer.
- *macra'ntha*. 20. May. N. Amer. 1819.
- Berries yellowish-red.
- *ma'xima*. 20. May. N. Amer.
- *mi'nor*. 20. May. N. Amer.
- *neapolita'na*. May. Naples.
- *subvillo'sa*. 1832.
- *succule'nta*. Germany.
- *corda'ta*. 20. May. N. Amer. 1738. Berries bright red. B. R. t. 1151.
- *crenula'ta*. 10. May. Nepaul. 1820. B. R. 1844, t. 52.
- *crus-ga'lli*. 20. May. N. Amer. 1691. Berries dark red.
- *linea'ris*. 20. May. N. Amer.
- *na'na*. 4. May. N. Amer.
- *pyracanthifo'lia*. 20. May. N. Amer.
- *salicifo'lia*. 20. May. N. Amer.
- *sple'ndens*. 20. May. N. Amer.
- *Dougla'sii*. 15. May. N. Amer. 1830. Berries purple. B. R. t. 1810.

- C. elliptica*. 20. May. N. Amer. 1765.
- fissa. 15. May. 1810.
- flabella'ta. 15. May. South Europe.
- fla'va. 20. May. N. Amer. 1724. B. R. t. 1939.
- loba'ta. 15. June. B. R. t. 1932.
- florenti'na. 15. May. 1800.
- flo'rida. 20. May. N. Amer.
- gla'bra. 15. May. N. Amer. 1818. B. M. t. 2105.
- grignonie'nsis. Fruit yellowish-green or lemon tinged with red. 1890.
- heterophyl'la. 20. May. N. Amer. 1816. Berries red. B. R. t. 1161 and t. 1847.
- latifo'lia. 20. May. N. Amer. 1820.
- leucophlo'ea. Fruit scarlet. E. United States. 1882.
- Lo'yi. 10. North China. 1844.
- lu'cida. 20. May. N. Amer.
- marocca'na. 15. May. Barbary. 1822. B. R. t. 1855.
- melanoca'rpa. 15. May. Tauria. 1820.
- mexica'na. 15. May. Mexico. 1823. B. R. t. 1910.
- Carri'ri. Seedling form. 1882. G. C. 1888, iv. p. 736.
- mono'gyna. 15. May. Siberia.
- ni'gra. 20. May. Hungary. 1819. B. C. t. 1023.
- odorati'ssima. 15. May. Crimea. Berries bright red. B. R. t. 1885.
- orienta'lis. 15. May. South Europe. 1810. Berries dark red. B. R. t. 1852.
- sangui'nea. 15. May. Crimea. 1810.
- ovalifo'lia. 20. May. N. Amer. 1810.
- oxyaca'ntha. 15. May. Britain. Common Hawthorn.
- ape'tala. 15. May.
- auranti'aca. May.
- au'rea. 15. May.
- capita'ta. 15. May.
- Celsia'na. 15. May.
- erioca'rpa. 15. White. May. Britain.
- filicifo'lia. Leaves deeply cut. Prussia. 1874.
- flexuo'sa. 15. White. May.
- fo'lis argenteis. 15. White. May.
- fo'lis au'reis. 15. White. May.
- fo'lis tricoloribus. Leaves variegated with red, carmine, and rose. Garden variety. 1886.
- ho'rrida. Garden variety. 1861.
- lacinia'ta. 12. White. May. Sicily. 1816.
- leucoca'rpa. 15. White. May. Britain.
- ma'jor. 15. White. May.
- mu'tiplex. 15. White. May.
- obtusa'ta. 15. White. May. France. 1822.
- Oliveria'na. 20. White. May. Asia Minor. 1820. Berries black. B. R. t. 1933.
- ple'na. 15. White. May.
- pra'cox. 15. White. May.
- pterifo'lia. 15. White. May.
- puni'cea. 15. Scarlet. May. B. C. t. 1363.
- puni'cea fo're-ple'no. 15. Dark red. May.
- quercifo'lia. White. June. Hamburgh. 1834.
- regi'nae. 30. White. May. Scotland. Queen Mary's Thorn.
- ro'sea supe'rba. 15. Crimson. May.
- semperfo'rens. Garden variety. 1866.
- sibi'rica. 15. White. May. Siberia.
- transylva'nica. 15. White. May. Transylvania.
- oxyacanthoi'des. 15. White. May. France. 1822. B. R. t. 1128.
- parvifo'lia. 15. May. N. Amer. 1704.
- flo'rida. 6. White. May. N. Amer.
- grossulariaefo'lia. 6. White. May.
- C. penta'gyna*. 15. White. May. Hungary. 1820.
- pinnatt'ida.
- ma'jor. White. N. China. 1886.
- Poiridia'na. 20. White. May. Hungary. 1810.
- Priestia'na. White. May. 1810.
- prunello'lia. 20. White. May.
- prunifo'lia. 20. White. May. N. Amer. 1818. Berries dark red. B. R. t. 1868.
- puncta'ta. 15. White. N. Amer. 1746. Berries red.
- au'rea. 30. White. May. N. Amer. 1724.
- brevispi'na. White. May. N. Amer.
- ni'gra. White. May. N. Amer.
- ni'gra stri'cta. White. May. N. Amer.
- ru'bra. 20. White. May. N. Amer.
- ru'bra stri'cta. 20. White. May. N. Amer.
- purp'rea. 15. White. May. 1822.
- alta'ica. 15. White. May. Altaic Mountains.
- pyraca'ntha. 10. White. May. South Europe. 1629.
- orenula'ta. 10. White. May. Nepal. 1820.
- fru'ctu' a'ubo. 10. White. May. 1841.
- pyri'fo'lia. 15. White. June. N. Amer. 1763. Berries yellowish-red. B. R. t. 1877.
- sangui'nea. 15. May. Siberia. 1810.
- spathula'ta. 15. May. N. Amer. 1805. B. C. t. 1261.
- spinoso'ssima. 15. May. Europe. B. C. t. 1100.
- stipula'ris. Pink. May. Quito. 1843.
- tanacetifo'lia. 15. May. Greece. 1789. Berries yellow. B. R. t. 1884.
- gla'bra. 15. May. Germany. 1816.
- tau'rica. 15. May. Taurica. 1800.
- toment'o'sa. Branches pale grey. United States. 1888.
- virgin'ica. 5. May. Virginia. 1812. Berries green.
- vi'ridis. 15. May. Carolina. 1810.
- Crata'va**. Garlic Pear. (Named after *Crataevus*, a Greek botanist. Nat. ord., *Capparidaceae*. 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. Andr. Rep. III. p. 176, and *C. fra'grans*, B. M. t. 596. See *Richiaea fragrans*.
- gyna'ndra. 12. White. Jamaica. 1789.
- Rozbu'rgii. 15. White. E. Ind. 1822.
- ta'pia. 30. White. W. Ind. 1752.
- tapioi'des. 20. White. S. Amer. 1820.
- Crawfu'rdia**. (In honour of *Sir John Crawford*, governor of Singapore. Nat. ord., *Gentianaceae*; Tribe, *Swerticeae*.)
 Showy greenhouse or half hardy herbaceous twiners. They are allied to the *Gentians*, and may be as hardy as the Indian species of *Gentians*. For culture, see *GENTIAN*.
C. fascicula'ta. 4. Blue. August. Himalaya. 1855. B. M. t. 4838.
- lu'teo-vi'ridis. White and green. Sikkim. B. M. 6539.
- specio'sa. 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 displeasing to the eye. They are also handsome objects in pots suspended from the roof of an appropriate structure, and some, as *Gaultheria procumbens*, are ornamental round the margin of ponds, or as an edging to walks and beds.

Cre'pis barba'ta, B. M. t. 35, and *C. macrorrhiza*, B. M. t. 2988. See **Tolpis**.

Cresce'ntia. The Calabash-tree. (Named after *Crescenti*, an old author. Nat. ord., *Crescentiacee*.)

The flowers of the Calabash-tree (*C. Cujete*) are intermediate between Gesneriworts and Bigoniads, 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. acuminata*. 20. Green, white. Cuba. 1822.
- *ala'ta*. Purple. Nicaragua. 1866.
- *cucurbiti'na*. 10. White. Jamaica. 1733.
- *Cujete*. 20. White. Jamaica. 1690. B. M. t. 3430.
- *macrophy'lla*. 7. Yellow. S. Mexico. B. M. t. 4822.
- *ni'gripes*. Yellowish-green. Rev. Hort. 1882, p. 464, f. 99.
- *regali's*. Mexico. 1859.

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**.

Cress Rocket. *Vella*.

Crinode'ndron. See **Tricuspidaria**.

Cri'num. (From *krinon*, the Greek name for lily. Nat. ord., *Amaryllidacee*; Tribe, *Amaryllidee*.)

A large number of plants formerly included under this name are now referred to other genera, as mentioned below. The perianth-tube is always long. Bulbous stove, greenhouse, and hardy plants of great beauty; rich loam, peat and sand; readily increased by offsets and many by seeds. The species of this genus hybridize readily. *C. longiflorum*, *C. Moorei*, and *C. Pove'lii* are perfectly hardy in England if planted six or eight inches deep. *C. longiflorum* 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.

- C. algoe'nse*. See *C. lineare*.
- *ama'bile*. 5. Purple. July. E. Ind. 1810. Syn., *C. superbum*.
- *america'num*. 2. White. July. S. Amer. 1752. B. M. t. 1034.
- *amoe'num*. 2. White. Eastern Himalayas. 1810.
- — *la've*. 2. White. E. Ind. 1819.
- — *angustifolium*. 2. White. E. Ind. 1819.
- *angustifolium*. 2. White. June. N. Australia. 1824. Syn., *C. arenarium*, B. M. t. 2355.
- — *bla'ndum*. 2. Filaments whitish. N. Australia. 1821. B. M. t. 2536.

- C. angustifolium confertum*. 2. White. June. N. Australia. 1822. B. M. t. 2522.
- *ano'matum*. A variety of *C. asiaticum*.
- *agua'ticum*. See *C. campanulatum*.
- *arena'rum*. See *C. angustifolium*.
- *asia'ticum*. 2. White. July. Tropical Asia. 1732. B. M. t. 1073.
- — *ano'matum*. 1. White. July. China. 1822. Syn., *C. plicatum*, B. M. t. 2908.
- — *canicula'tum*. 1883.
- — *declina'tum*. 2. White. May. Silhet. 1818. B. M. t. 2231.
- — *pro'cerum*. 3. White. July. Pegu. 1820. B. M. t. 2684.
- *augu'stum*. 1. Pink. July. Mauritius. 1818. B. M. t. 2397. Syn., *C. amabile*, var. *augustum*, B. R. t. 679.
- *australi'sicum*. A synonym of *C. angustifolium*.
- *austra'le*. See *C. pedunculatum*.
- *Batfouri's*. 1. Pure white. Autumn. Socotra. 1880. B. M. t. 6570.
- *bla'ndum*. See *C. angustifolium*, var. *blandum*.
- *brachya'ndrum*. 2. Greenish. N. Australia. 1820.
- *brachyne'ma*. 1. Pure white. May. Bombay. B. M. t. 5937.
- *bractea'tum*. 1. Pure white. July. Mauritius. 1810. B. R. t. 179.
- — *purpura'scens*. 1. White, tinted with rose. W. Africa. 1879.
- *Broussonetii*. Red. Lil. t. 62. See *C. yuccaefolium*.
- *campanula'tum*. 3-4. Rose-red. Cape Colony. 1817. Syn., *C. aquaticum*, B. M. t. 2352.
- *canalicula'tum*. See *C. pedunculatum*.
- *cape'nse*. See *C. longiflorum*.
- *Careya'num*. 2. White, tinged with red. November. Mauritius. 1821. B. M. t. 2466. Syn., *C. ornatum*, var. *Careya'num*.
- *caribe'um*. 1. White. Jamaica. 1831.
- *caudi'ceum*. A variety of *C. amœnum* from Ceylon.
- *Cole'nsoi*. See *C. Moorei*.
- *Comme'lyni*. 2-3. White. July. Guiana. 1793. Jacq. H. Schenb. t. 202. Syn., *C. Commetinianum* and *C. Lindleyanum*.
- *confertum*. See *C. angustifolium*, var. *confertum*.
- *corantya'num*. A synonym of *C. erubescens*.
- *crassifolium*. See *C. variabile*.
- *cras'sipes*. 1. White, red. July. Native country unknown. 1887.
- *crue'ntum*. 3-4. Bright pink. July. Mexico. 1810. B. R. t. 171.
- — *Loddigesia'num*. Flowers tipped dark purple.
- *deolina'tum*. See *C. asiaticum*, var. *declinatum*.
- *deflexum*. 2. White. October. India. 1810. B. C. t. 362.
- — *ensifolium*. Flowers tinged red outside. B. M. t. 2301.
- *di'stichum*. 2. White, purple. June. Sierra Leone. 1774. Syn., *Amaryllis ornata*, B. M. t. 1253.
- *e'legans*. See *C. pratense*, var. *elegans*.
- *erube'scens*. 2. Whitish, claret-purple. July. Tropical America. 1734. Jacq. H. Schenb. t. 494. B. M. t. 1232. Syn., *C. corantyanum* and *C. Gordonianum*.
- — *berbice'nse*. 2. White. July. Berbice. 1819.
- — *glabrum al'dum*. White. June. S. Amer. 1820.
- — *glabrum ru'brum*. Red, white. June. Maranhan. 1824.
- — *ma'jus*. 3. Red, white. July. S. Amer. 1789.
- — *mi'nus*. 1½. Red, white. July. S. Amer. 1789.

- C. octoflorum*. White. June. Spanish Main. 1820.
- *rubrilimbium*. Red. June. S. Amer.
- *viridifolium*. 3. White. July. Demerara. 1819.
- *exaltatum*. See *C. pedunculatum*.
- *falcatum*, Jacq. Vind. iii. t. 60. See *Ammocharis falcata*.
- *flaccidum*. 2. White. July. Southern Australia. 1819. B. M. t. 2133. Syn., *Amaryllis australasica*, B. E. t. 426.
- *Forbesii* num. 1. White, banded red. October. Delagoa Bay. 1824. B. M. t. 6545. *Brunsvigia magnifica*, III. Hort. n. s. t. 552, is probably identical with this plant.
- *giganteum*. 3. White. July. Central and W. Trop. Africa. 1792. Andr. Rep. t. 169. Syns., *C. vanillodorum*, III. Hort. n. s. t. 617, *Amaryllis gigantea*, A. ornata, B. M. t. 923, and A. candida.
- *Gordonia* num. See *C. erubescens*.
- *Govenia* num. A garden hybrid.
- *graciliflorum*. 2. White. Venezuela. 1844.
- *Herbertia* num. See *C. strictum* and *C. zeylanicum*.
- *Hildebrandtii*. 2. Pure white. September. Johanna Island. 1875. B. M. t. 6709. There is also a many-flowered variety, see III. Hort. n. s. t. 615.
- *humile*. 1. White. October. Tropical Asia. 1822. B. M. t. 2636.
- *insigne*. A variety of *C. latifolium*.
- *Kirkii*. 1½. White, red. September. Zanzibar. 1879. B. M. t. 6512. *Brunsvigia Massaiana*, III. Hort. 1887, t. 55, is probably the same.
- *Kunthia* num. 1½. White, striped red. Wien. Gart. Zeit. 1890, p. 358.
- *Laetitia*. 1. Pink. E. Trop. Africa. 1881.
- *latifolium*. 2. Pink. July. Tropical Asia. B. E. t. 1297. Syn., *C. ornatum*, var. *latifolium*. Varieties of this have been named *C. moluccanum*, B. M. t. 2293, *C. speciosum*, B. E. t. 2217, and *Amaryllis insignis*, B. E. t. 579.
- *leucophyllum*. 2. Pale pink. August. Damara-land. 1881. B. M. t. 6783.
- *lineare*. 2. White, reddish. Cape Colony. 1779. Syns., *C. revolutum*, and var. *gracillior*, B. M. t. 623, *C. algoense*, and *Amaryllis revoluta*, B. M. t. 915.
- *Loddigesia* num. See *C. cruentum*, var. *Loddigesianum*.
- *longiflorum*. 4-5. White, reddish. Jamaica. 1818. Syn., *Amaryllis longifolia*, var. *longiflora*.
- *longifolium*. 2-3. Reddish. Summer. Cape Colony. 1752. Hardy. Syns., *C. capensis* and *C. riparium*, *Amaryllis longifolia*, B. M. t. 661, and A. *capensis*.
- *Fariniana* num. 3-4. White, pink. Kalahari Desert. 1887.
- *longistylum*. See *C. latifolium*.
- *Mackenziei*. See *C. Moorei*.
- *Maco-wani*. 2-3. Pink. January. Natal. 1878. B. M. t. 6381.
- *Makoya* num. Rev. Hort. 1877, p. 417, f. 75. See *C. Moorei*.
- *Massiana*. See *C. Kirkii*.
- *mauritia* num. 4. Pink. March. Mauritius. 1812. B. C. t. 650.
- *moluccanum*, B. M. t. 2292. See *C. latifolium*.
- *Moorei*. 1½. Rose. Spring or autumn. S. Africa. 1874. B. M. t. 6113. Syns., *C. Colensoi*, *Mackenziei*, *Makoyanum*, and *natalense*.
- *Schmidtii*. Pure white. Gf. t. 1072.
- *natalense*. See *C. Moorei*.
- *obliquum*. See *Cyrtanthus obliquus*.
- *ornatum*. 3. White, tinted with rose. Summer. 1821. See also *C. Sanderianum*.
- C. ornatum rubrovittatum*. White, crimson. Brazil. 1876.
- *pedunculatum*. 3-4. Greenish. Summer. E. Australia. 1790. B. E. t. 52. Syns., *C. australe*, *canaliculatum*, *exaltatum*, and *taitense*, Red. Lil. t. 408.
- *petiolatum spectabile*. See *C. giganteum*.
- *podophyllum*. 1. Pure white. November. Old Calabar. 1879. B. M. t. 6483.
- *Powellii*. 3-4. Reddish. July. 1877. There are two hybrids of this, viz. — *album* and *intermedium*. 1888.
- *pratense*. 2. White. June. Plains of India. 1810.
- *elegans*. 4. White. September. Pegu. B. M. t. 2592.
- *purpurascens*. 1. White, tinged red. June. Guinea. 1877. B. M. t. 6525.
- *quiteense*. See *Phædranassa chloracea*.
- *reductum*. A variety of *C. zeylanicum*.
- *revolutum*. See *C. Commelyni* and *C. lineare*.
- *riparium*. See *C. longifolium*.
- *Sanderiana* num. 2. White, red. Sierra Leone. 1877. Syn., *C. ornatum*.
- *scaberimum*. See *C. scabrum*.
- *scabrum*. 4. Pink. May. Tropical Africa. 1810. B. M. t. 2180. Syn., *C. scaberimum*.
- *Schimperii*. White. 1889. Gf. t. 1309.
- *Schmidtii*. Gf. t. 1072. A variety of *C. Moorei*.
- *speciosum*, B. M. t. 2217, is *C. latifolium*; of Linnæus is *Fallota purpurea*.
- *spirale*. Andr. Rep. t. 92. See *Carpolyza spiralis*.
- *Stracheyi*. 2. White. Kumaon. 1881.
- *strictum*. 1. White. September. Ceylon? 1824. B. M. t. 2635.
- *sumatranum*. 3. White. July. Sumatra. 1801. B. E. t. 1049.
- *superbum*. See *C. amabile*.
- *taitense*. See *C. pedunculatum*.
- *tenuellum* of Linnæus is *Hessea filifolia*; of Jacq. Ic. t. 363 is *Carpolyza spiralis*.
- *undulatum*. 1½. White. November. North. Brazil. 1827. Hook. Exot. Fl. t. 200.
- *uniflorum*. 1. Pure white. N. Australia. 1879.
- *urceolatum*. See *Urceolina pendula*.
- *vanillodorum*. III. Hort. 1887, t. 617. See *C. giganteum*.
- *variabile*. 2. Flushed with red. Cape Colony. Syns., *C. crassifolium*, *C. variabile*, var. *roseum*, B. E. 1844, t. 9, *Amaryllis revoluta*, var. *robustior*, B. E. t. 615, and A. *variabilis*, Jacq. H. Schœnb. t. 429.
- *Verschaffeltianum*. Leaves variegated with white stripes, 1877.
- *Wallichiana* num. See *C. zeylanicum*.
- *yucciflorum*. 1½. White, banded red. Sierra Leone, 1740. Syns., *C. Broussonetii*, B. M. t. 2121, *C. yuccooides*, *Amaryllis Broussonetii*, Red. Lil. t. 62, A. *ornata*, and A. *spectabilis*, Andr. Rep. t. 390.
- *yuccooides*. See *C. yucciflorum*.
- *zeylanicum*. 3. Purple, bright red. July. Tropical Asia and Africa. 1697. Syns., *C. Herbertianum*, *C. ornatum*, vars. *Herbertianum* and *zeylanicum*, *C. Wallichianum*, *Amaryllis ornata*, B. M. t. 1171 and A. *zeylanica*.

Crioceris asparagi. The Asparagus Beetle in some years is very destructive to Asparagus beds, severely injuring the plants by feeding on the leaves, buds, and shoots, and thereby weakening the next year's crop. The eggs are deposited on the stems and leaves (so called, but which in reality

are not true leaves, but slender modified branches which botanists call *cladodia*). The larvæ when full fed are nearly cylindrical, and fleshy, of a dirty olive-green or slate colour, with shining black legs and head. It is during the larval stage that the mischief to the Asparagus is done, as the perfect beetle does not appear to feed on the plant. When the larvæ are mature, they descend into the earth, where they form a cocoon in which they change to the pupa state; after about three weeks the perfect beetle emerges. It is about a quarter of an inch long; the eyes and antennæ are black; the thorax reddish, with two black dots in the middle; the elytra are ochreous, with a stripe along the suture, a spot on each shoulder, a transverse bar across their middle and another near the apex, all of a deep green colour; the legs are reddish, and the under parts metallic blue-green; the whole insect is very shining. The best plan to reduce their numbers, and so lessen the amount of damage they may cause, is to spread white cloths under the plants and shake them vigorously; the larvæ and beetles will fall upon the cloths, and may then be destroyed. This process should be repeated after an interval of about two weeks. The old Asparagus stems should also be burnt in autumn, in order to destroy any eggs that may be upon them.

Crista'ria. (From *crista*, a crest; the form of the seed-vessel. Nat. ord., *Malvaceæ*; Tribe, *Malvæ*. Allied to *Sida*.)

A very neat little hardy herbaceous perennial. Peat; cuttings during the summer months.

C. coccinea. †. Scarlet. August. Missouri. 1811. B. M. t. 1673.

Cri'th'mum. Samphire. (From *krithe*, barley; resemblance of the seeds to barley. Nat. ord., *Umbelliferae*; Tribe, *Seselineæ*. Allied to *Seseli*.)

Samphire (*C. maritimum*) is excellent in pickles. Garden-soil. Seeds; divisions.

C. latifolium. 1½. Yellow. July. Canaries. 1780. Greenhouse evergreen. Syn., *Astydamia canariensis*.

— *maritimum*. 1. White. August. Britain. Hardy herbaceous. Eng. Bot. ed. 3, t. 606.

Cult'ure. — *Cri'th'mum maritimum*, though a native of the sea-shore, 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 it about twice a week with water con-

taining about one ounce of Tidman's sea salt per gallon.

Cro'cking is putting a piece of pot-asher over the hole at the bottom of a flower-pot, previously to adding the drainage, etc.

Cro'cus. (A name adapted from Theophrastus. Nat. ord., *Iridææ*.)

Hardy autumn, and spring flowers. The saffron of commerce consists of the dried stigmas of *C. sativus*. The Sicilian saffron is from those of *C. longiflorus*.

C. æ'tivus. Pale lilac, throat yellow. Spring. Asia Minor. B. M. t. 6852, f. B.

— *alata'vicius*. White, yellow, purple. Spring. Ala. Taurus Mts. 1877.

— *ochroleu'cus*. Dull yellow, white. 1877.

— *porphy'reus*. Bright claret purple, white. 1878.

— *annula'tus*. B. M. t. 3868. See *C. biflorus*.

— *anceyre'nsis*. Orange, purple. Spring. Asia Minor.

— *astu'ricus*. Purple. Autumn. Asturia. 1842.

— *au'reus*. Orange. Spring. Greece, etc. B. M. t. 2986, and t. 2655. B. R. 1843, t. 21. Syns., *C. lagenæ'florus*, B. M. t. 2685, *C. mæstacus*, B. M. t. 1111.

— *a'thus*. White.

— *fla'vus*. Pale yellow. Greece.

— *hæ'micus*. Yellowish. Mt. Hæmus.

— *la'cteus*. Cream. Greece. 1629.

— *la'cteus penicilla'tus*. Pale cream pencilled.

— *lute'scens*. Pale yellow.

— *pa'llidus*. Pale sulphur.

— *sulphu'reus*. Sulphur. South Europe. 1629.

— *syri'acus*. Yellow. Syria.

— *triline'us*. Yellow, blue.

— *Bala'nææ*. Orange, bronze feathered. Spring. Smyrna.

— *banda'ticus*. Rieh purple, blotched. Spring. Transylvania, etc. B. M. t. 6197.

— *biflo'rus*. Lilac to white. Spring. Georgia. Tuscany. B. M. t. 854. Syn., *C. annulatus*, B. M. t. 3868.

— *Ada'mii*. Purplish. Caucasus.

— *a'thus*. White. Opshchina.

— *cærule'scens*. Bluish. Naples.

— *estria'tus*. Lilac. Florence.

— *græ'cus*. Yellowish. Greece.

— *Leichtli'nii*. Cream, lavender. Smyrna. 1890.

— *nubi'genus*. White. Mount Gargarius. 1845.

— *Pestalo'zææ*. White. Constantinople.

— *purpura'scens*. Purple. Dalmatia.

— *puzi'llus*. White, bluish. Naples. Syn., *C. pusillus*, B. R. t. 1987.

— *tau'ricus*. Bluish. Odessa.

— *Weldé'ni*. White, purple. Dalmatia.

— *Billio'tii*. Rich purple. Spring. Stauros. 1880.

— *Boissie'ri*. White, spring. Sicilia. 1853.

— *Bo'ryi*. White. Autumn. Morea, etc. B. R. 1845, misc. 3.

— *marathon'seus*. White. Marathon.

— *byzanti'nus*. See *C. iridiflorus*.

— *Cambessedè'sii*. Lilac, purple. Autumn. Majorca. B. R. 1845, t. 37, f. 4.

— *cancelle'tus*. Purple, yellow. Autumn. Mount Taurus. B. R. 1847, t. 16. B. M. t. 3864.

— *cili'cticus*. Violet, purple. Mount Taurus. Syn., *C. damascenus*.

— *mazzia'ricus*. White, yellow. Santa Maura.

— *ca'nadidus*. White, purple. Spring. Troad. 1856.

- C. carpeta* *mus.* Lilac, bluish white. Spring. Central Spain.
- *ca'spius.* White, yellow. Autumn. Caspian Sea. 1838.
- *chrysa'nthus.* Orange-yellow. Spring. Greece, etc. B. R. 1847, t. 4.
- — *a'tridus.* White. Bithynian Olympus.
- — *caerule'scens.* Bluish lilac. Bithynian Olympus.
- — *fu'sco-linea'tus.* Orange, reddish brown. Smyrna.
- — *fu'sco-tine'tus.* Orange, brown. Smyrna.
- *Clu'sii.* Purple. Autumn. Spain, etc. B. R. 1845, t. 47.
- *co'rsicus.* Bright lilac, buff. Spring. Corsica. 1882.
- *Cre'vet.* White, dark chocolate. Spring. Syra. 1874. B. M. t. 6168.
- *cy'prius.* Bright lilac. Spring. Cyprus.
- *dalma'ticus.* Lilac, purple. Spring. Dalmatia.
- *damasc'e'nus.* See *C. cancellatus*, var. *cilicicus*.
- *Danjo'r'dice.* Sulphur yellow. Grey. Spring. Anti Taurus. 1879.
- *etrus'cus.* Lilac, cream. Spring. Tuscan Maremma. 1876.
- *Fleische'ri.* White, purple. Spring. Smyrna. 1875.
- *Gaillardo'tii.* Pale lilac. Spring. Syria.
- *garga'ricus.* Bright orange. Spring. Western Bithynia.
- *granate'nais.* Purple, white. Autumn. Asia Minor.
- *hadria'ticus.* White, purple. Autumn. Ionian Islands, etc. B. R. 1847, t. 16, f. 7-9.
- — *chrysobelo'nicus.* White, yellow. Santa Maura.
- — *Saundersia'nus.* White, rich purple. Albania.
- *hermo'neus.* Purple, white. Autumn. Mount Hermon.
- *hyema'lis.* White, with purple lines. Spring. Southern Palestine.
- *Impera'ti.* Buff, purple featherings. Spring. Italy. 1830. B. R. t. 1993. There are several garden varieties of *C. Imperati*.
- *insula'ris.* B. R. 1843, t. 21. See *C. minimus*.
- *iridi'florus.* Purple, lilac. Autumn. Transylvania. 1847. Syn., *C. byzantinus*, B. R. 1847, t. 4.
- *karducho'rum.* Vinous-lilac. Autumn. Kurdistan. 1859.
- *Korolko'vii.* Orange, brown. Spring. Central Asia. 1830.
- *lagenae'storus.* See *C. aureus*.
- *laeviga'tus.* White to lilac, purple. Autumn. Cyclades. 1838.
- *lazi'cus.* Bright orange. Spring. Lazitan. 1866.
- *longi'florus.* Lilac, purple. Autumn. Italy, etc. 1810. Syn., *C. odorus*.
- *maest'acus.* See *C. aureus*.
- *Maly'i.* White. Spring. Dalmatia. 1872.
- *me'dius.* Bright purple. Autumn. Riviera. B. R. 1845, t. 87, and 1843, t. 21.
- *mi'nimus.* Rich violet, buff. Spring. Corsica. 1805. Syn., *C. insularis*.
- *montenegri'nus.* Creamy white. Spring. Montenegro. 1881.
- *nevade'nsis.* Purplish. Spring. Sierra Nevada. 1861.
- *nudi'florus.* Rich bluish-purple. Autumn. South Europe. 1798. Syn., *C. pyrenaeus*.
- *ochroleu'cus.* Creamy white, yellow. Autumn. Northern Palestine. 1862. B. M. t. 5297.
- *o'dorus.* See *C. longi'florus*.
- *Olivie'ri.* Bright orange. Spring. Greece. 1831. B. R. 1847, t. 4.
- *Orpha'nidis.* See *C. Tournefortii*.
- *parviflorus.* Lilac. Spring. Taurus. 1877.
- *C. pulche'rillus.* Bright bluish-lilac. Autumn. Greece, etc. 1670. B. R. 1843, misc. p. 28.
- *pusi'florus.* See *C. biflorus*.
- *pyrenae'us.* See *C. nudiflorus*.
- *reticula'tus.* White, deep lilac, purple. Spring. South Europe, etc. 1808. B. C. t. 1822. Syn., *C. variegatus*.
- *Salzma'nii.* Purple, lilac feathered. Autumn. Spain. 1831. B. R. 1847, t. 4.
- *sati'vus.* Bright lilac, suffused purple. Autumn. Cultivated. 1753. Red. Lil. t. 173.
- *Cartwrightia'nus.* White, purple. Greece. Cyclades.
- — *cashmeria'nus.* Purplish. Cashmere.
- — *Elve'sii.* Bright purple, lilac. Smyrna.
- — *Hausskne'chtii.* Purple. Kurdistan.
- — *Orsi'ni.* Purple, lilac. Italy.
- *Palla'sii.* Lilac. Crimea. Italy, etc.
- *Scharo'jami.* Bright orange. Autumn. N.W. Caucasus. 1869.
- *sero'tinus.* Bright lilac, purple. Autumn. Spain. 1806. Salisb. Parad. t. 20.
- *Siebe'ri.* Bright lilac. Spring. Greece. Crete, etc. 1831. B. M. t. 1043.
- — *versi'color.* White, and purple featherings. Crete. Cyclades.
- *specio'sus.* Lilac, feathered purple. Autumn. Tauria, Hungary, etc. 1808.
- *stella'ris.* Orange, purple. Spring. Garden hybrid.
- *suave'olens.* Buff, purple. Spring. Italy. 1833. B. M. t. 3864.
- *Susia'nus.* Orange, feathered deep brown. Spring. Crimea. 1795. B. M. t. 652.
- *Suteria'nus.* Clear orange. Spring. Asia Minor. B. R. 1847, t. 7, f. 1.
- *Tommasinia'nus.* Pale sapphire lavender. Spring. Dalmatia. 1847.
- *tau'ri.* Purple. Spring. Taurus.
- *Tournefo'r'tii.* Bright lilac, feathered purple. Autumn. Cyclades. 1831. B. M. 5776. Syn., *C. Orphanidis*.
- *valli'cola.* Pale cream. Autumn. Trebizond, Lazistan.
- — *iliac'us.* Purple. Stauros.
- — *Suwarrowia'nus.* Cream. Caucasus.
- *variega'tus.* See *C. reticulatus*.
- *veluthe'nais.* Rich purple. Spring. Balkans. 1845. B. R. 1847, t. 4.
- *Ve'neris.* White, lilac. Autumn. Cyprus, Crete. 1842.
- *ve'rnus.* White to deep purple. Spring. Europe. 1785. Eng. Bot. ed. 3, t. 1499.
- — *albiflorus.* White. Trieste.
- — *apri'lis.* Violet. April.
- — *ela'tior.* Purple. Alps.
- — *leucorhynchus.* Purple, lilac.
- — *neapolita'nus.* Purple, blue. Naples.
- — *obova'tus.* White, purple. S. Europe.
- — *parviflorus.* White. Splügen.
- — *pi'ctus.* Lilac.
- — *si'culus.* Purple. Sicily.
- *versi'color.* Purple, white, veined purple. Spring. 1794. B. M. t. 1110.
- *vitell'i'nus.* Orange bronze. Autumn, spring. Syria. 1879.
- *Welde'ni.* See *C. biflorus*.
- *zonal'tus.* Rosy lilac, lined purple. Autumn. Cicalia. 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 corms. Allow them to remain another season, and then, when the leaves decay, take them up carefully, sifting the soil so as to find even the smallest. In August prepare a bed of fresh, rich soil, turning it over two or three times to mellow and pulverize. About the middle of September, on a dry day, level the bed, and draw drills across it four inches apart; then plant the young corms in the drills one inch apart, 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 of.

By Offsets.—When the leaves decay, in the summer, take up the corms, keeping them in their various sorts; separate the large-flowering corms 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.—August and September are the best months for planting. Take the roots up every second or third 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 corms sometimes become like a mass of starch or meal, and then will not grow. There is no remedy for corms actually diseased, but they ought to be carefully picked out, and not mixed with the general stock, for fear of infection. It seems to be caused by an internal fungus, which affects the corms when at rest; they should therefore be kept in a cool dry shed until planting time.

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. This is now

carried on to a very large extent in the market gardens around London. 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.**

Crossandra. (From *Crossos*, a fringe, and *aner*, an anther; fringed anthers, or pollen-bags. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*. Allied to *Justicia*.)

Showy stove evergreen shrubs; peat and loam; cuttings root readily in sand, in bottom-heat, at any season, under glass.

C. flava. ½. Yellow. January. Sierra Leone.

1852. B. M. t. 4710.

— *guineænsis*. ½. Lilac, white, purple; leaves beautifully reticulated with white veins. October. W. Tropical Africa. 1877. B. M. t. 6346.

— *infundibuliformis*. Orange. India. March. 1822. G. C. 1882, vol. 18, p. 653.

— *pedunculata*. 1½. Orange, scarlet. March. India. 1800. Syn., *C. undulatifolia*. B. M. t. 2186.

Crossyne ciliaris. See **Buphane ciliaris**.

Crotalaria. (From *krotalon*, a castanet, or hand-rattle; the seeds rattle in the pod if shaken. Nat. ord., *Leguminosæ*; Tribe, *Genisteæ*. Allied to the Lupines.)

Notwithstanding the great number of *Crotalaria*s, 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, ETC.

C. acuminata. 1. Yellow. July. Cape of Good Hope. 1830. Half-hardy.

— *ala*. 1. Pale yellow. July. Nepal. 1818. Biennial.

— *angulata*. 1. Yellow. Juns. S. Amer. 1700.

— *angustifolia*. Yellow. S. Africa. Jacq. H. Schoenb. t. 219.

— *bialata*. See *C. sagittalis*.

— *bifloria*. 3. Yellow. July. E. Ind. 1817.

— *Burma*. 1. Yellow. July. E. Ind. 1800. Syn., *C. sericea*.

— *calycina*. 1. Blue. June. E. Ind. 1816.

— *cubensis*. 1. Yellow. July. Cuba. 1820. Syn., *C. hirta*.

— *fulva*. 1. Yellow. June. E. Ind. 1817.

— *glauca*. 1. Yellow. July. Guinea. 1824.

— *hirsuta*. 1. Yellow. July. E. Ind. 1818.

— *Langsdorffii*. 1. Yellow. June. 1820.

— *microphylla*. ½. Yellow. July. Arabia. 1820. Trailer.

— *ovata*. 1. Yellow. July. Carolina. 1810. Half-hardy.

— *pu'nila*. ½. Yellow. June. Cuba. 1823. Trailer.

— *purpurea*. B. M. t. 1913. See *Hypochaeris*.

— *purpurea*. 1. Purple. July. Madagascar. 1825.

— *Pu'shii*. 1. Yellow. June. Virginia. 1800.

— Half-hardy. Syn., *C. laevigata*.

— *senegalensis*. 1. Yellow. June. Senegal. 1819.

— *spectabilis*. 1½. Purple. July. E. Ind. 1820.

— *sagittata*. 1. Yellow. June. United States. 1820. Syn., *C. bialata*.

- C. stipularis*. 1. Yellow. July. Cayenne. 1823.
 — *triandra*. 2. Yellow. June. Mexico. 1824.
 — *tuberosa*. 1. Purple. June. Nepaul. 1821.
 Greenhouse.
 — *verrucosa*. 1. Blue. June. W. Ind. 1731.
 — *acuminata*. 1. Blue. July. E. Ind. 1731.
 — *obtusata*. Blue. India. Syn., *C. cœrulea*.
 Jacq. Ic. t. 144.
 — *villosa*. 1. Yellow. June. Cape of Good Hope. 1824. Half-hardy.

GREENHOUSE EVERGREENS.

- C. arborescens*. Yellow. Mauritius and S. Africa. Syn., *C. capensis*, Jacq. Vind. t. 64.
 — *argentea*. 1. Yellow. June. Cape of Good Hope. 1823.
 — *axillaris*. Guinea.
 — *dichotoma*. 1. Yellow. July. Mexico. 1824.
 — *obscurea*. 2. Yellow. June. Cape of Good Hope. 1820.
 — *paulliana*. Africa.
 — *pulchella*. Yellow. S. Africa. B. M. t. 1699.
 — *thebaïca*. 2. Yellow. June. Egypt. 1818.

STOVE EVERGREENS.

- C. amplexicaulis*. See *Vascea amplexicaulis*.
 — *anagyroides*. 6. Yellow. July. Trinidad. 1823.
 — *anthylloides*. 4. Yellow. August. E. Ind. 1789.
 — *Berberia*. 2. Yellow. June. Guadeloupe. 1819.
 — *bracteata*. 4. Yellow. July. E. Ind. 1820.
 — *Broomea*. 4. Yellow. July. Jamaica. 1816.
 — *cujaniifolia*. 6. Yellow. August. S. Amer. 1824.
 — *chinensis*. 2. Yellow. June. China. 1818.
 — *cordifolia*. See *Hypocalyptus obovatus*.
 — *Cunninghamii*. 3. Greenish-yellow, purple. February. N. W. Australia. 1869.
 — *cytisoides*. 3. Yellow. July. Nepaul. 1826.
 — *fenestrata*. Yellow. September. India. 1816. B. M. t. 1933.
 — *Auribunda*. See *Viborgia obovata*.
 — *foliosa*. 3. Yellow. June. E. Ind. 1818.
 — *fruticosa*. 2. Yellow. June. Jamaica. 1716.
 — *Hayneana*. White, blue. Malabar. 1868.
 — *linifolia*. 1. Yellow. July. Nepaul. 1820.
 — *lotifolia*. Jamaica. Dill. Elth. t. 102, f. 131.
 — *medicaginea*. 1. Yellow, green. June. E. Ind. 1816. Syn., *C. trifoliumstrum*.
 — *novae hollandiæ*. 2. Purple. June. N. Holland. 1823. Herbaceous perennial.
 — *obcordata*. B. C. t. 509. See *Viborgia obovata*.
 — *oppositifolia*. See *Rafinia oppositifolia*.
 — *paniculata*. 3. Yellow. June. Java. 1820.
 — *pellita*. 1. Yellow. July. Jamaica. 1820.
 — *pendula*. 5. Yellow. August. Jamaica. 1820.
 — *procumbens*. 1. Yellow. June. Mexico. 1823. Herbaceous perennial.
 — *pulehra*. Yellow. E. Indies. 1807. Andr. Rep. t. 601.
 — *Roxburghiana*. 2. Yellow. June. E. Ind. 1820. Syns., *C. anthylloides* and *C. stricta*.
 — *semperfoliens*. Golden-yellow. India.
 — *striata*. 3. Yellow, red. Mauritius. 1831.
 — *tenuifolia*. 2. Yellow. June. Coromandel Coast. 1816.
 — *tetragona*. Yellow. November. E. Indies. Andr. Rep. t. 593.
 — *virgida*. 3. Yellow. July. 1820.
 — *virgata*. 3. Yellow. June. Coromandel Coast. 1816.
 — *vitellina*. Yellow, violet. Brazil. B. R. t. 447.

Cro'ton. (From *kroton*, a tick; referring to the appearance of the seeds.

Nat. ord., *Euphorbiaceæ*. Allied to (*Jatropha*.)

Under the name of CROTON, nurserymen have introduced and distributed a large number of plants belonging to the genus *CODIÆUM*, which see; both genera belong to the Natural order *Euphorbiaceæ*, but to different groups of the order, and are very different in general appearance. CROTON is a large genus, but very few species are in cultivation, as they have little to recommend them.

The most powerful of purgatives is *Croton oil*, obtained from the seeds of *C. Tiglium*. Stove evergreen shrubs, except *C. rosmarinifolius*; loam and peat; cuttings root readily in sand, under glass, in heat.

- C. atabamensis*. 6-10. White. Alabama. 1889.
 — *angustifolius*. 1881.
 — *castaneifolius*. 2. White. August. Trinidad. 1827. B. M. t. 2794.
 — *eleuterius*. 6. White, green. July. Jamaica. 1748. Sea-side balsam.
 — *glabellus*. 6. White, green. Jamaica. 1778.
 — *imperialis*. A form of *Codiæum variegatum*. Leaves variegated with crimson and gold. New Hebrides. Fl. and Pom, 1876, p. 209.
 — *interruptus aureus*. Leaves bright green and gold. 1882. Dwarf.
 — *linedris*. 6. White, green. July. 1773.
 — *majepticus*. 1½. Leaves deep green; midrib golden. South Sea Islands. Fl. and Pom. 1876, p. 53.
 — *memphis* and *mirabilis*. Pacific Islands. 1889. Garden forms of *Codiæum variegatum*.
 — *Neumanii*. Leaves bright green, variegated with yellow and white. A form of *Codiæum variegatum* from Polynesia. 1889.
 — *Phillipsii*. Leaves golden-yellow at base.
 — *pictus*. 4. White, green. July. E. Indies. 1810.
 — *picturatus*. A form of *Codiæum variegatum*. 1888.
 — *Reidii*. Pacific Islands. 1889. A form of *Codiæum variegatum*.
 — *rosmarinifolius*. 5. June. N. Holland. 1824. Greenhouse.
 — *Tiglium*. 10. White, green. E. Ind. 1796.
 — *trilobus*. 1-2. Leaves deep green, marked with golden-yellow. Fl. and Pom. 1877, p. 56.
 — *undulatus*. Leaves dark green, blotched rich crimson. 1882.
 — *variegatus*. 10. White, green. E. Ind. 1804. Syn., *Codiæum variegatum*.
 — *crispus*. 6. White, green. July. E. Ind. 1804.
 — *longifolius*. 2. White, green. India. 1847.
 — *medius*. 6. White, green. July. E. Ind. 1804.
 — *Wigmanii*. Leaves rich green, blotched with yellow.

Crowberry. *Empetrum nigrum*.

Cro'wea. (Named after *J. Crowe*, a British botanist. Nat. ord., *Rutaceæ*; Tribe, *Boroniceæ*. Allied to *Boronia*.)

Greenhouse evergreen shrubs, from Australia. Cuttings root readily in sand, under glass; loam and peat.

- C. elliptica*. 3. Pink. July. 1845.
 — *latifolia*. 3. Purple. July. 1825. Pax. Mag. xiv. p. 222.
 — *saligna*. 3. Purple. September. New S. Wales. 1790. B. M. t. 989.
 — *stricta*. 2. Pink. 1845.

Crowfoot. *Ranunculus*.

Cruci'feræ. A large order of plants, whose flowers have four petals arranged in the form of a cross (whence the name) and six stamens. Many of them are of garden or economic interest, such as the wallflower (*Cheiranthus*), cabbage, swede, turnip, etc.

Cruciane'lla. Crosswort. (From the diminutive of *crux*, a cross; referring to the way the leaves are arranged. Nat. ord., *Rubiaceæ*; Tribe, *Galiceæ*. Allied to *Rubia*.)

The leaves of all the plants in this order are produced in whorls along the stem. Hence the name of the genus. 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. americana. 1. Yellow. July. S. Amer. 1780.
— *maritima*. 1. Yellow. July. Shores of the Mediterranean. 1640.

HARDY HERBACEOUS.

C. andromeda. See *C. molluginoides*.
— *aspera*. Greenish-yellow. July. Iberia. 1837.
— *chlorostachys*. Greenish-yellow. July. Persia. 1837.
— *gilanica*. Yellow. July. Persia. 1837.
— *glomerata*. 1. Yellow. July. Iberia. 1824.
— *molluginoides*. 1. Yellow. July. Caucasus. 1820. Syns., *C. anomala* and *Asperula tubiflora*.
— *pubescens*. 1. Purple. July. Candia. 1799.
— *stylota*. B. R. 1838, t. 55. See *Phuopsis stylota*.
— *suaveolens*. 1. Yellow. July. Russia. 1838

Cruiksha'nkia is a synonym of **Balbisia**.

Crypta'nthus. (From *kryptos*, to hide, and *anthos*, a flower; the flowers are nearly buried among the bracts. Nat. ord., *Bromeliaceæ*.)

Stove epiphytes. For cultivation, see **BILBERGIA**.

C. acaulis purpureus. White; leaves purplish-green. Brazil. 1870.
— *benckeri*. Brazil. 1830. Belg. Hort. 1881. t. 17.
— *bivittatus*. White. Tropical America. 1865.
— *Morrenianus*. Yellowish; bracts reddish. Brazil. 1838. Syn., *Disteganthus Moensis*.
— *undulatus*. White. August. South Brazil. 1826. Syn., *Tillandsia acaulis*. B. R. t. 1197.
— *zebrinus*. $\frac{1}{2}$. White. August.

Cryptochilus. (From *kryptos*, hidden, and *cheilos*, a lip; the lip, or labellum, being partly hidden by the sepals. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Eriaceæ*. Allied to *Acanthophippium*.)

Stove orchids; root division; soil, rough fibry peat and rotten wood.

C. hutea. Pale yellow. June. India. 1832.
— *reticulata*. See *Eria reticulata*.
— *sanguinea*. 1. Scarlet. June. Nepaul. B. R. 1838, t. 23.
— *Wightii*. See *Eria reticulata*.

Cryptoco'ryne. (From *kryptos*, hidden, and *koryne*, 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., *Aroideæ*; Tribe, *Arineeæ*. Allied to *Arum*.)

Stove herbaceous perennials; divisions, and seeds when obtainable; loam and peat.

C. ciliata. Green, purple. May. East Indies. 1824. Linn. Trans. xx. tt. 10-12. Syn., *Ambrosinia ciliata*.
— *spiralis*. 1. Brown. May. China. 1816.

Cryptogra'mme. (From *kryptos*, hidden, and *gramme*, lettering; referring to the fructification. Nat. ord., *Filices*.)

Hardy ferns, with the exception of *C. crispa*, var. *Brunonianana*, which requires greenhouse.

C. crispa. $\frac{1}{4}$. July. Britain. Eng. Bot. ed. 3, t. 1844. Syn., *Allosorus crispus*.
— *acrostichoides*. North America. Syns., *C. acrostichoides* and *Allosorus acrostichoides*.
— *Brunonia'na*. Segments of frond oblong, not wedge-shaped.

Cryptome'ria. Japan Cedar. (From *kryptos*, hidden, and *meris*, part; the structure of all the parts of the flower being hidden, or not easily perceived. Nat. ord., *Conifereæ*. Allied to *Taxodium*.)

Splendid evergreen trees, from 60 to 100 feet high, from the north of China and Japan, where they grow in damp situations. Seeds imported; some have ripened in Britain; cuttings in sandy soil, under a hand-light; a pure loam seems to suit it best.

C. elegans. Japan. 1861.
— *na'na*. Dwarf.
— *japonica*. 100. May. Japan. 1844. Syn., *C. pungens*.
— *arucarioides*.
— *dacrydioides*.
— *Lobbi*. Java. 1853. Rev. Hort. 1887, p. 392.
— *lycopodioides*. 1876.
— *monstro'sa*.
— *na'na*. 2. N. China. Syn., *C. japonica*, var. *pugmea*.
— *ni'gricans*. Japan. 1870.
— *rubiginosa*. Leaves turning coppery-red in autumn and winter. Japan. 1873.
— *spiralis*. Japan.

Cryptophora'nthus. (From *kryptos*, hidden, *phoros*, bearing, and *anthos*, flower; the sepals almost conceal the rest of the flower. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Pleurothalleæ*.)

C. Daya'nus. Yellowish, orange, purple. July. Columbia. 1872. Syn., *Madevalla Dayana*.

— *maculatus*. See *Pleurothallis maculatus*.

Cryptophra'gium. (From *kryptos*, hidden, and *phragma*, a division or partition; the flowers partly concealed by the leafy bracts. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*. Allied to *Justicia*.)

Stove evergreen shrubs. Cuttings, in April, of young shoots, in sandy loam, under glass, and in bottom-heat; peat and loam.

C. canescens. 2. Yellow. Ceylon. 1853. Wight Ic. t. 1495.

— *venustum*. 5. September. Purple. Bengal. B. M. t. 3208. Syn., *Justicia amabilis*.

Cryptostegia. (From *kryptos*, hidden, and *steges*, a covering; the cup, or corolla, is hidden. Nat. ord., *Asclepiadaceæ*; Tribe, *Periploceæ*. Allied to *Periploca*.)

Climbing stove evergreens. Loam and peat; cuttings root readily in sand, under glass, in heat.

C. grandiflora. 6. Pink. June. India. 1818. B. R. t. 435.

— *madagascariensis*. 10. Pink. July. Madagascar. 1826.

Cryptostemma. (From *kryptos*, hidden, and *stemma*, a crown; the crown of the flower hidden. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*. Allied to *Arctotis*.)

Tender annuals, from South Africa. They are best 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. calendulaeum. 1. Yellow. July. Cape Colony. 1752. B. M. t. 2252. Syn., *Arctotis calendulacea*. Jacq. H. Schenb. t. 157.

— *hypochondriacum*. 1. Yellow. July. 1731.

— *runcinata*. 1. Yellow. July. 1794.

— *Forbesiana*. Yellow. Summer. Cape of Good Hope.

— *niveum*. Yellow. Cape of Good Hope. Decumbent. Syn., *Microstephium niveum*.

Cryptostylis. (From *kryptos*, hidden, and *stulos*, style; the concave base of the lip encircles the short column. Nat. ord., *Orchideæ*; Tribe, *Neottieæ*.)

C. longifolia. 2. Yellowish-green; lip red with brownish markings. Australia. G. C. vol. 23, p. 275, f. 53.

Cryso'phila. (Derivation not stated. Nat. ord., *Palmææ*.)

Dwarf stove palm.

C. na'na. Mexico. 1889.

Cuba Bast is the inner bark of *Hibiscus elatus*.

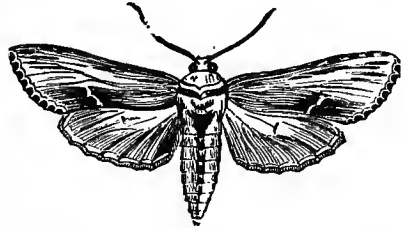
Cuci'fera theba'ica. See *Hyphæne thebaica*.

Cuckoo Flower. *Cardami'ne pratensis* and *Lychnis flos-cuculi*.

Cuckoo-spit. See *Tettigonia spumaria*.

Cucullia 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 (*Scrophularia*). 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 fore-wings, 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 of 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.

Cucu'balus. (From *kakos*, bad, and *bolus*, snout. Nat. ord., *Caryophyllaceæ*; Tribe, *Sileneæ*.)

C. baccifer. Whitish. Europe. Mill. Ic. t. 112. — *catholicus*. Jacq. Vind. t. 59. See *Silene catholica*.

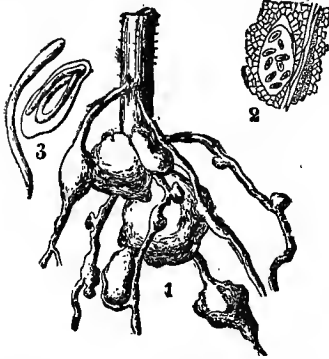
— *chloræfolius*. See *Silene perfoliata*.

— *stellatus*. B. M. t. 1107. See *Silene stellata*.

Cucumber. *Cu'cumis sati'vus*.

Cu'cumber disease. This disease, which takes the form of tubercles on the roots (Fig. 1), is caused by very minute worms, called *Vibrios*. The tubercles at first are very small, but rapidly increase in size, sometimes enlarging to the magnitude of a nut. On cutting one of these asunder it will be found to contain small cysts, as shown at Fig. 2, magnified; each cyst contains a number of minute vesicles, inclosing the vibrios in various states of development. Fig. 3 represents one of these vesicles inclosing a vibrio, and by its side one of the vibrios free, both greatly magnified.

The disease first makes itself manifest in the leaves by the appearance of brown spots, which also occur upon the stem; and by the general unhealthy



look of the plant. The only remedy is to pull up the diseased plants and burn them, and to clear out all the earth in which they grew, and make fresh beds with new soil.

The cucumber is also liable to be attacked by the **Mildew**, **Canker**, **Gumming** (extravasated sap), and **Deformity**. (See those articles.) The fruit is also liable to *bitterness*, an ill quality usually removed by increasing the temperature, and exposure to the light. It arises from an imperfect elaboration of the juices: those in the neck of the cucumber being least digested, are always more bitter than in any other part of the fruit.

Insects.—See **Aphis**, **Acarus**, and **Thrips**. For Melon - culture, see **Melon**.

Cu'cumis. Cucumber. (From *cucumis*, the Latin for cucumber. Nat. ord., *Cucurbitaceæ*; Tribe, *Cucumerineæ*.)

Half-hardy trailing annuals. The *C. colocynthis* produces the *Colocynth* of medicine. The whole of the species require to be sown in hot-beds, and, when of sufficient strength, to be planted out either in frames or under hand-glasses.

- C. acuta'ngulus*. Jacq. Vind. t. 73-74. See *Luffa*.
 — *africa'nus*. Yellow. S. Africa. B. R. 980.
 — *angu'neus*. See *Trichosanthes anguinea*.
 — *angu'ria*. 2. Yellow. July. Jamaica. 1692. B. M. t. 5817.
 — *cantalupe'nsis* is a variety of *C. Melo*.
 — *chi'to*, a variety of *C. Melo*.
 — *Chi'trullus*. 6. Yellow. June. S. Amer. 1597.
 — *Ja'ce*. 6. Yellow. July. 1597. Water Melon.
 — *Paste'ca*. 6. Yellow. July. 1597. Pastèque cucumber.
 — *colocy'nthis*. 6. Yellow. June. Japan. 1551. Wight Ic. t. 498.
 — *Duda'im*. Persia. Fl. Ser. t. 1474.
 — *delicio'sus*. 4. Yellow. July. E. Indies. 1818.

- C. Hooke'ri*. Yellow; fruit brownish-purple marked with white bands. Tropical Africa. 1870.
 — *jamaice'nsis*. 4. Yellow. July. Jamaica. 1824.
 — *naderaspata'nus*. A synonym of *C. Melo*.
 — *Me'to*. 4. Yellow. July. 1570. Melon.
 — *ensis cantalupe'nsis*. 4. Yellow. July. 1570.
 — *melite'nsis*. 4. Yellow. July. 1570.
 — *reticula'tus*. 4. Yellow. July. 1570.
 — *mom'o'rdica*. 4. Yellow. July. E. Indies. 1820.
 — *murica'tus*. 4. Yellow. July. E. Indies. 1817.
 — *p'ictus*. Jacq. Vind. iii. t. 27. A synonym of *C. Melo*.
 — *propheta'rums*. Arabia. Jacq. Vind. i. t. 9.
 — *Saclew'zii*. Zanzibar. 1890.
 — *sati'vus*. 4. Yellow. August. E. Indies. 1597. Cucumber.
 — *al'bus*. 4. Yellow. July.
 — *fastigia'tus*. 4. Yellow. July.
 — *fla'vus*. 4. Yellow. July.
 — *sikkime'nsis*. Yellow; fruit chocolate, reticulated with ochre. Himalayas. 1875.
 — *variega'tus*. 4. Yellow. July.
 — *vi'ridis*. 4. Yellow. July. E. Indies. 1597.
 — *utili'ssimus*. A synonym of *C. Melo*.

Garden Varieties.

These are extremely numerous, the following are a few only of those in cultivation:

- Early short green prickly. Fruit, 4 inches long.
 Early long green prickly. 7 in.
 Most long green prickly. 9 in.
 Early green cluster. 6 in.
 White Dutch prickly. 6 in.
 Long smooth green Turkey. 10 in.
 Large smooth green Roman. 10 in.
 Flanagan's. 15 in.
 Russian. 12 in.
 White Turkey. 15 in.
 Nepaul. 17 in.
 Rollisson's telegraph.
 Tender and true.
 Turner's Blue Gown.
 The Snake. 12 in.
 Brownston hybrid. 15 in.
 Victory of England. 21 in.
 Ringleader. 15 in.
 Sion House. 9 in.
 Duncan's Victoria. 28 in.
 Allen's Victory of Suffolk. 24 in.
 Duke of Edinburgh.
 Marquis of Lorne.
 Victory of Bath. 17 in.
 Prizefighter. 16 in.

The *Early short prickly* is often preferred for the first crop, as being a plentiful cropper, quick in coming into production, and the hardiest of all the varieties. The *Early long prickly* is a hardy, abundantly-bearing variety, but not quick in coming into production. It is generally grown for main crops. The *Most long prickly* is a hardy good bearer. There is a white sub-variety. The *Early green cluster* is a very early bearer. It is chiefly characterized by

its fruit growing in clusters. The whole plant grows compact, and is well suited for hand-glass crops. The *White Dutch prickly* has an agreeable flavour, though differing from most of the others. It comes quickly into bearing. The other varieties are slow in coming into production, and are chiefly remarkable for their great size. The *Nepaul* often weighs twelve pounds, being occasionally eight inches in diameter. It is a native of Calcutta. The *Snake* cucumber is very small in diameter. *Victory of England* is a favourite variety at Ipswich for early forcing. It is prolific, and the best black-spined kind of that town. Its fruit is very handsome, averaging a length of sixteen inches, and a diameter of one inch and three quarters.

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.

Soil.—A fresh loam, such as the top spit of a pasture, is perhaps as fine a soil as can be employed for the cucumber.

Culture: in Dung Beds.—The time of sowing cucumber seeds depends upon the time when the plants are required for final ridging out. Three or four weeks will always be required for raising the plants to a fitness for that purpose. The seed-bed should be made up three and a half feet high at the back, and from two feet six inches to three feet high in the front, and on a dry bottom. The frame should be put on as soon as the bed is made, and the seed should not be sown until the heat of the bed is sweet and healthy, to which state it may be hastened by its surface being stirred once or twice daily and watered, plenty of air also being given. The best material to put on the seed-bed to plunge the pots or pans of seeds in is old tan, well-rotted manure, or leaf-mould, which may be run through a very coarse sieve. With this material the bed may be covered all over, or any part of it, to any thickness, to suit the purpose intended; and its being sifted makes it the more pleasant to handle, either for raising the plants nearer to the glass or lowering them. The seeds may be sown either in small pots or in pans, and the seedlings to be moved from one to three plants in a pot. If sown in the pots so as not to need shift-

ing, the pots may be crocked, and a little better than half filled with earth, and three seeds in each covered half an inch deep. When the plants are up, they may be thinned either to one or two in each pot; and as the plants advance in height, so the pots may be filled up with rich, light earth, which should be kept in the frame for the purpose; also, a small pot of water should be kept in the frame, for moistening the earth or sprinkling the plants when required. The plants should be kept within three or four inches of the glass. Three or four sowings may be made during January. It is important to have the seed-bed in the winter months defended from piercing winds, by thatched hurdles both on the west, north, and east sides. As soon as the young plants have formed two rough leaves they should be stopped.

Fruiting-bed.—The materials for making up either this or the seed-beds should be thoroughly well worked by being turned over four or five times, shaken together well and mixed, and, if dry and husky, thoroughly well watered at the first two turnings, as the work goes on. The lumps should be broken up, and the short mixed with the long, until the whole mass has one uniform appearance, and is nearly half rotten. The size of the beds depends on the season. In February, six feet high at the back and three feet in front; and if in January, a foot higher will be required; and if March, a foot less will be sufficient. A dry bottom in all cases, and the materials well put together, shaken up, and beaten down well as the work goes on; and the bed should be always six or eight inches wider than the frame all round. As soon as completed, put on the frame and lights. When settled, and all become sweet and healthy, the hillocks of earth may be put on for the young plants to be placed in; but, before the hillocks are made, particularly in the early season, when the very strong beds cause some danger of burning, some preventive measures must be adopted. Almost every dung-bed cucumber grower has his favourite way to prevent this occurrence. Some pave the bottom of the hillock with six or eight bricks; others with a thick twist of straw or some hay-bands, over which three or four inches thick of cow-dung are placed of about the substance of mortar; others, again, remove a little of the centres, and place therein a good thick turf with the grass side turned downward, and on this a good thick

paste of cowdung. But the best plan for the bottom of the hillocks is that given by Mr. Errington in "The Cottage Gardener," at page 164 of vol. iii., by carrying up a cold bottom of brick-bats, etc., from the bottom of the bed, as the work goes on. Whichever method is adopted, the hillock must be about a bushel of rich earth prepared for the purpose, and in a cone shape, so as to bring the plants within six or seven inches of the glass. Do not cover the whole surface of the beds with earth at this time; for, should the beds be very strong, it may be necessary to undermine the hillocks. As the roots put out round the hillock, they should be covered with a handful or two of earth; and if all goes on well, the hillocks will very soon require to be extended, and the plants stopped and pegged down.

Hand-glass Crops.—Sow for these towards the end of March or beginning of April. The plants to be ridged out towards the middle or end of April, under hand-glasses. If the open, warm quarters are to be occupied by this fruit, trenches one or one and a half feet deep should be dug out, by two and a half feet wide, and ten feet wide from row to row; these to be filled with good, fermenting dung, that has been well worked as for other hotbeds. The trenches should be filled six or eight inches above the common level of the soil before the earth is put on. Put on the earth in the form of a ridge until the heat is up, which will be in the course of three or four days, when it may be levelled down, the glasses put on, and the plants turned out under them, and watered with tepid water. The pots out of which the plants were turned may remain to tilt the lights with when a little air is required; and when the plants begin to fill the lights, two similar pots or half bricks will be required to stand the lights upon over the plants, after which they may be trained out by degrees, and as they begin to extend over the beds, the sides or alleys must be forked and well broken up, making a neat level surface for the plants to be trained out upon. The plants will require stopping, training, and plenty of water in dry, hot weather.

Temperature.—Air is to be admitted every day as freely as contingent circumstances will admit, and also at night, if the degree of heat and steam threatens to be too powerful. It must never be neglected to cover the glasses at night, apportioning the covering to the temperature of the air and bed. The heat

should not exceed 80° in the hottest day, or sink below 65° during the coldest night. If the heat declines, coatings of hot dung are to be applied in succession to the back, front, and sides, if that source of heat be employed. As the mould appears dry, moderate waterings must be given, care being taken not to wet the leaves. The best time for applying it is between ten and two of a mild day, the glasses being closed for an hour or two after performing it. The temperature of the water must be between 65° and 80°. The interior of the glass should be frequently wiped, to prevent the condensed steam dropping upon the plants, which is very injurious to them.

Hot-Water Beds.—Mr. Latter, one of the most successful of cucumber growers, employed hot-water to heat his beds; and he gives us these leading points in his culture:—He sows in the first week of September, and the vines from this sowing will be in bearing and very strong before February. The seedlings are first shifted into sixty sized pots, secondly into twenty-fours, and lastly into the largest size. If to be trained on a trellis, the runner must not be stopped until it has, trained to a stick, grown through the trellis. The temperature in the pit or frame is kept as nearly 65° as possible during the night, and from 75° to 85° during the day; air being admitted *night and day*, little or much, according to the state of the weather. The bottom-heat is kept as near as can be to 70°, although he finds that 85° does not hurt the plants. He waters them with soft water until February, and then employs liquid-mannure, taking care that the temperature of the liquid is always from 75° to 80°. The earth over the hot-water tank or pipes ought not to be less than fifteen inches deep. During severe frosts it is an excellent plan to keep a small floating light burning within the frame every night.

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.

To obtain Seed.—For the production of seed, some fruit must be left of the earliest forced production, as this is found to vegetate and produce fruit in much less time than that raised under hand-glasses, from whence the seed for the open-ground crops is usually obtained. The fruit that is left to produce seed should grow near the root, and upon the main stem, not more than one being left on a plant. They must remain as long as the seed can obtain any nourishment from the plant, which it does whilst the footstalk remains green. When this withers, and the rind of the cucumber has attained its full yellow hue, they may be gathered, and reared in the sun until they begin to decay. The seed then being scraped out into a vessel, allowed to remain for eight or ten days, and frequently stirred until the pulp attached to it is decayed, may be cleansed by frequent agitation in water: the refuse rises to the top, and passes away with the liquid. Being thoroughly dried by exposure to the air for three or four days, it is then fit for storing. Seed three or four years old is found to be best for use, producing less luxuriant but more productive plants.

Propagation by Cuttings.—Cuttings five or six inches in length, taken from the tops of bearing branches of vigorous

plants, about the end of September, or early in October, planted in pots of rich mould, and plunged in a hotbed or bark-bed in a stove, will take root, if regularly watered, in less than a fortnight, and may then be planted in a hotbed for fruiting, which they will do as soon as the roots can support them, perfecting the fruit before Christmas. They may thus be had in succession, and being propagated from year to year, are rendered, as it were, perennial. The plants are less succulent, and consequently less liable to damp off, or suffer from the low temperature to which they are liable to be exposed in severe seasons. Mr. Mearns puts four inches and a half of mould in pots nine inches deep, in which the cuttings are planted and watered, the tops of the pots being covered with flat pieces of glass, which answer the purpose of a hand-light, whilst the sides of the pot afford a sufficient shade until the roots are formed. When the plants have afforded their first crop, any small fruit must not be waited for, but the plants be cut back to the lowest shoot, the mould gently stirred, and a little fresh spread over the surface; the same attention must be paid them as before, when they will shoot afresh, and produce a good crop.

Cucumber-tree. *Magnolia acuminata* and *Averrhoa bilimbi*.

Cucu'rbita. Gourd. (From *curbita*, a gourd. Nat. ord., *Cucurbitaceæ*; Tribe, *Cucumerinæ*.)

Half-hardy trailing annuals, requiring the same culture as the Cucumber.

- C. aurantiflora*. 3. Yellow. July. 1802.
- *colocynthis*. 3. Yellow. July. 1802.
- *orangina*. 3. Yellow. July. 1802. The Orange.
- *citrullus*. See *Cucumis citrullus*.
- *lagenaria*. See *Lagenaria vulgaris*.
- *litoralis*. Java. Syn., *C. digitata*, var. *litoralis*.
- *mexicana*. 4. Yellow. July. India. Wight Ic. t. 507. Syn., *C. Farina*.
- *congeria*. 10. Yellow. July.
- *potifera*. 10. Yellow. July.
- *viridis*. 10. Yellow. July.
- *melanosperma*. Siam. Syn., *C. ficifolia*.
- *melonifera*. Rev. Hort. 1881, p. 139.
- *melopepo*. 3. Yellow. June. 1597. The Squash.
- *mexicana*. Mexico. 1889.
- *moschata*. 4. Yellow. July.
- *ovifera*. 3. Yellow. August. Astracan.
- *grisea*. 3. Yellow. July.
- *pyrifera*. 3. Yellow. July.
- *subglobosa*. 3. Yellow. July.
- *pepo*. 16. Yellow. July. Levant. 1570. The Pumpkin. Syn., *C. succado*.
- *oblonga*. 6. Yellow. 1570.
- *subrotunda*. 6. Yellow. July. Levant. 1750.

There are considerably over a hundred ornamental varieties of this species that may be grown in the open air during the summer months.

either as trailers on the ground, or trained up poles; the latter we prefer as being the most effective.

C. pere'nns. Texas and California. Rev. Hort. 1855, p. 61.

— *verruco'sa.* 12. Yellow. June. 1658.

— *Zapell'to.* Yellow. S. Brazil. 1873.

Culca'sia. (Derivation same as *Colocasia*. Nat. ord., *Aroidæ*; Tribe, *Philodendreae*. Allied to *Aglaonema*.)

Stove climber. For culture, see *COLOCASIA*.

C. sca'ndens. White. Guinea. 1822.

Culen. *Psora'lea glandulo'sa.*

Cullumbine, or **Columbine.** *Aquile'gia.*

Cullu'mia. (After *Sir T. C. Cullum*, who wrote on English plants in 1774. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*.)

Greenhouse evergreen.

C. pectin'ata. 2. Yellow. August. S. Africa. 1818. Syn., *Berkheya pectinata*.

Cumin. *Laga'cia cuminoi'des.*

Cumi'num cymi'num Common Cumin, an annual, native of Egypt, bearing white flowers, and belonging to the Nat. ord., *Umbelliferae*. 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 Aityre, in Moraysire. Nat. ord., *Liliaceæ*; Tribe, *Conanthereæ*. Allied to *Conanthera*.)

Beautiful little half-hardy bulbs from Chili, which succeed best in a light, rich border in front of a greenhouse, with *Ixias*, *Brodiaeas*, *Zephyranthes*, *Anomathecas*, and the like. Offsets; loam and peat. They must be well protected or lifted during the winter season.

C. campanula'ta. 3. Blue. August. 1823. Swt.

Fl. Gard. t. 257. Syn., *Conanthera bifolia*. B. M. t. 2496, and *C. campanulata*. B. R. t. 1193.

— *tene'lla.* 3. Blue. November. 1829. Swt. Fl. Gard. ser. 2, t. 88.

— *trima'cula'ta.* 3. Blue. December. 1829.

Cundura'ngo. *Gonolo'bus Cundura'ngo.*

Cuni'la. (After a town of that name. Nat. ord., *Labiatae*; Tribe, *Satureineæ*. Allied to Balm and Mint.)

North American hardy herbaceous perennials; root divisions; in loam and peat.

C. cocci'nea. A synonym of *Calamintha coccinea*. — *maria'na.* 1. Red. September. 1759. B. C. t. 1205.

Cunningha'mia. Broad-leaved China Fir. (In honour of two brothers, *J.* and *A. Cunningham*, British botanists in Australia. Nat. ord., *Coniferae*; Tribe, *Araucarieæ*. 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. 40. China. 1804. B. M. t. 2743.

Syn., *C. lanceolata* and *Belis lanceolata*. — *glau'ca.* Branch-leaves glaucous.

Cuno'nia. (Named after *J. C. Cuno*, of Amsterdam. Nat. ord., *Saxifrageæ*; Tribe, *Cunoniaceæ*.)

Greenhouse evergreen tree; loam and peat; cuttings in sand, under glass, in heat.

C. cape'nsis. 20. White. August. Cape of Good Hope. 1816. B. R. t. 828.

Cupa'nia. (Named after *F. F. Cupani*, an Italian monk, who wrote on botany. Nat. ord., *Sapindaceæ*; Tribe, *Sapindeæ*. Allied to *Sapindus*.)

Stove evergreen trees with white flowers; loam and peat; cuttings of half-ripe shoots in sand, under glass, in heat.

C. cane'scens. 16. Coromandelia. 1818.

— *Cunningha'mi.* 20. Green. May. N. E. Australia. 1825. B. M. t. 4470.

— *denta'ta.* 12. Mexico. 1824.

— *exco'lsa.* 20. Mexico. 1824.

— *glabra.* 14. May. Jamaica. 1822.

— *gra'ndidens.* Zanzibar. 1884.

— *Pinda'i'ba.* Brazil.

— *sa'pida.* 20. Africa. 1793. Akee-tree.

— *sapona'ria.* 6. April. W. Italy. 1810. Syn., *C. saponarioides*.

— *seti'gera.* 20. November. Moreton Bay. 1830.

— *tomento'sa.* 15. W. Indies. 1815.

— *undula'ta.* Brazil. 1865.

Cu'phæa. (From *kuphos*, curved; referring to the form of the seed-pods. Nat. ord., *Lythraceæ*; Tribe, *Lythreae*. Allied to *Lythrum*.)

Dry, rich soil; seeds; and cuttings in the spring months.

ANNUALS, ETC.

C. circeoi'des. 3. Purple. September. S. Amer. 1821. Greenhouse. B. M. t. 2201.

— *parvifo'ra.* 3. Pink. November. Demerara. 1824. Stove.

— *proci'mbens.* 1. Pale purple. August. Mexico. 1816. Stove. B. M. t. 1981.

— *sileno'i'des.* 1½. Bluish. September. 1836. Hardy. B. M. t. 4362.

— *spica'ta.* Rose. Peru. 1819. Hardy.

— *viscosi'ssima.* 1. Purple. July. Central America. 1776. Hardy.

— *virga'ta.* 1½. Purple. August. Mexico. 1824. Greenhouse.

STOVE AND GREENHOUSE EVERGREENS, ETC.

C. cinnaba'ri'na. See *C. pimetorum*.

— *Commero'ni.* S. America. 1884.

— *corda'ta.* 1½. Scarlet. June. Peru. 1842. B. M. 4208.

— *deca'dra.* 1½. Purple. July. Jamaica. 1789.

— *gra'cilis.* 1. Purple. July. Orinoco. 1824.

— *ig'nea.* 1½. Scarlet, white. June. Mexico. 1845. Greenhouse. Syn., *C. platycentra*. Pax. Mag. xiii, p. 267.

— *a'lba.* 1½. White. June. 1848.

— *jurulle'nsis.* 2. Orange-red, yellow. Mexico. 1856. Fl. Ser. t. 994. Syn., *C. eminens*.

— *lanco'la'ta.* 1½. Purple. Mexico. 1796. Hardy annual. Swt. Fl. Gard. ser. 2, t. 402.

— *Lia'lea.* 1½. Purple. June. Mexico. 1830. Greenhouse. Perennial. B. R. t. 1386.

— *Melvi'lla.* 3. Scarlet. August. Guiana. 1833. Herbaceous perennial. B. R. t. 852.

- C. micropétala*. 1. Purple. July. Mexico. 1824.
 — *miniáta*. Purple, crimson. June. Pax. Mag. xiv. p. 101.
 — — *purpúrea*. 1½. Purplish. June. 1847.
 — *multiflóra*. 1½. Purple. September. Trinidad. 1820. B. C. t. 808.
 — *ocymoides*. 2. Purple. June. Mexico. 1859.
 — *pinetórum*. Crimson. July. Mexico and Guatemala. 1849. Syn., *C. cinnabarina*.
 — *platycéntra*. See *C. ignea*.
 — *racemósa*. 1. Purple. June. W. Ind. 1820.
 — *Roezlii*. 2-3. Vermilion, orange. Mexico. 1877.
 — *serpylliflóra*. 1½. Red. August. Trinidad. 1822.
 — *strigillo'sa*. 1½. Yellow, red. July. Andes. Greenhouse. Paxt. Mag. xi. p. 241.
 — *zimapani*. 2. Blackish-purple, purple. Mexico. Hardy annual. 1878.

Cu'pia. See Randia.

Cupre'ssus. Cypress. (From *kuo*, to produce, and *parisos*, equal; in reference to the symmetrical growth of the Italian cypress, *C. sempervirens*. Nat. ord., *Coniferae*.)

Evergreen trees; hardy, unless otherwise stated; rich, loamy soil; readily increased from seeds; can be increased from cuttings.

- C. aromática*. California.
 — *attenuáta*. 10. N. California.
 — *austriális*. 10. April. N. Holland. Greenhouse.
 — *baccifórmis*. 20. May. 1818.
 — *Benthami*. 60. Mexico. Half-hardy.
 — *californica*. See *C. Goveniana*.
 — *cashmeriana*. See *C. torulosa*.
 — *Coulteri*. May. Mexico. 1838.
 — *élegans*. See *C. Knightiana*.
 — *exce'lsa*. 100. Guatemala. Tender.
 — *funébris*. 50. April. N. E. China. 1849. Syn., *C. pendula*. Half-hardy.
 — *glandulósa*. See *C. Macnabiana*.
 — *glau'ca*. See *C. lusitanica*.
 — *Goveniana*. 20. April. California. 1846. Syn., *C. californica* and *Hartwegii*.
 — *Hartwegii*. See *C. Goveniana*.
 — *japónica*. See *Cryptomeria japonica*.
 — *Knightiana*. 120. Mexico. 1838. Syn., *C. Lindleyi*.
 — *Lambertia'na*. See *C. macrocarpa*.
 — *Lawsoniana*. 100. N. California. 1853. Syn., *Chamaecyparis Lawsoniana*.
 — *al'bo-spi'ca*. Twigs silvery. California. 1869.
 — *argénteá*. Leaves silvery-glaucous.
 — *na'na*. A dwarf pyramidal compact form.
 — *stri'cta*. Garden variety. 1888.
 — *variega'ta*. 1861.
 — *Lindleyi*. See *C. Knightiana*.
 — *lusitá'nica*. 50. April. Goa. 1683. Half-hardy. Syn., *C. glauca*. Cedar of Goa.
 — *Macnabi'na*. 10. N. California. 1853. Syn., *C. glandulosa* and *C. nivalis*.
 — *macrocar'pa*. 60. California. 1847. Syn., *C. Lambertiana*. Monterey Cypress.
 — *nepalénsis*. See *C. torulosa*.
 — *niva'lis*. See *C. Macnabiana*.
 — *nutka'nsis*. 100. N. W. America.
 — *pe'núla*. See *C. funébris*.
 — *sempervirens*. 20. May. Candia. 1548.
 — *horizonta'lis*. 30. May. Mediterranean. 1834.
 — *stri'cta*. 20. May. Mediterranean.
 — *variega'ta*. 20. May. England. 1848.
 — *thursifera*. 100. Mexico. 1836.
 — *thuyoides*. 20. May. N. Amer. 1736. White Cedar.
 — *fo'lis-variega'tis*. April. Ireland. 1831.

- C. torulósa*. 30. Nepaul. 1824.
 — — *majéstica*. Stately.
 — — *na'na*. Dwarf.
 — *virídís*. Green.
 — *Unde'na*. 60. Mexico. Greenhouse.
 — *Whitleya'na*. 100. Nepaul. Half-hardy.

Curate'la. (From *kureno*, to shave; in reference to the leaves being covered with asperities so hard as to render them fit for polishing. Nat. ord., *Dilleniaceae*; Tribe, *Delimeae*. Allied to *Delima*.)

Stove evergreen shrubs; sandy loam and peat; cuttings in sand, under glass, in heat.

- C. ala'ta*. 8. White. Guiana.
 — *america'na*. 8. White. S. Amer.

Curcul'go. (From *curculio*, a weevil; the seeds have a point like the rostrum, or beak, of the weevil. Nat. ord., *Amaryllidaceae*; Tribe, *Hypoxideae*.)

Hypoxids are distinguished from Amaryllids by the absence of bulbs, and by their hairy leaves. Stove herbaceous perennials, except one; sandy loam and peat; offsets.

- C. breviflóra*. ½. Yellow. June. E. Ind. 1804.
 — *de'nsa*. Yellow. India. 1884.
 — *latiflóra*. 1½. Yellow. Paulo Pinang. 1804.
 — *orchoi'des*. ½. Yellow. June. E. Ind. 1800.
 — *plica'ta*. 1½. Yellow. June. Cape of Good Hope. 1788. Greenhouse.
 — — *glá'bra*. 1½. Yellow. June. Cape of Good Hope. 1788. Greenhouse.
 — *recurva'ta*. 1. Yellow. Bengal. 1805. B. R. t. 770.
 — *sumatra'na*. 3. Yellow. July. Sumatra. 1818.
 — *variega'ta*. 1872.

Curcul'io. Beetles of this destructive genus are popularly known as *Weevils*. The following are some of the chief species:

C. allia'riae. Stem-boring Weevil. Steel-green colour. Bores the shoots and grafts of young fruit-trees. Appears in June and July.

C. ba'cchus. Purple or Apple Weevil. Pierces the fruit of the apple, depositing within it its eggs. Appears in June and July.

C. betule'ti. 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. Copper-coloured Weevil. Attacks the leaves and young shoots of the plum and apricot, as well as their fruit. Appears in June and July.

C. lineátus. 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, *Curculio lineatus*. In Scotland it is commonly called "the Cuddy," or Donkey, from its grey colour. In our drawing it is magnified; but the

line by its side shows the natural length. The whole body is grey, and marked with black lines; the antennæ reddish; the eyes black. They survive the winter sheltered beneath moss, etc., and in bad



weather at all seasons retire under stones, only to reappear with the sunshine.

C. maculatus. 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. 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. Oblong Weevil. Reddish-brown colour. Feeds on the young leaves of the peach, apricot, plum, pear, and apple. Appears in May.

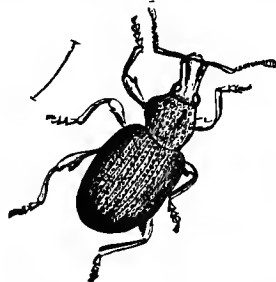
C. picipes is a dull black, and is very injurious in the vinery.

C. 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. Pear Weevil. Dark brown, very like the Apple Weevil. Appears in April.

C. sulcatus. During the winter months, succulent plants, such as Sedums, etc., 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, as pictured in the accompanying drawing, but not longer than the curved line by its side. 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.

C. 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 *C. 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."

Curcu'ma. Turmeric. (From *kur-kum*, its Arabic name. Nat. ord., *Scitamineæ*; Tribe, *Zingibereæ*.)

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. ærugino'sa*. 5. Red, yellow. May. Burmah. 1807.
 — *albifo'ra*. White, yellow. July. Ceylon. 1852. B. M. t. 5909.
 — *Amada*. 2. Red, yellow. April. Bengal. 1819.
 — *amarissima*. Red, yellow. April. E. Ind. 1822.
 — *angustifo'lia*. 3. Yellow. July. E. Ind. 1822.
 — *aromat'ica*. 2. Yellow. June. E. Ind. 1804.
 — *australa'sica*. Yellow. N. E. Australia. 1867. B. M. t. 6620.
 — *ca'cia*. 1. Yellow. May. Bengal. 1819.
 — *com'sa*. 2. Red, yellow. May. Pegu. 1819.
 — *corda'ta*. 1. Yellow, orange. July. E. Ind. B. M. t. 4435.
 — *ela'ta*. 3. Crimson. May. Burmah. 1819.
 — *ferrugi'nea*. 1. Yellow. May. Bengal. 1819.
 — *labifo'lia*. 12. Yellow. May. E. Ind. 1820.
 — *Leopo'diæ*.
 — *leucorhi'za*. 1. Red, yellow. May. E. Ind. 1819.
 — *lo'nga*. 2. August. E. Ind. 1759. B. R. t. 886. Syn., *Amomum Curcuma*. Jacq. Vind. iii. t. 4.
 — *lu'teo-vi'ridis*. 1822.
 — *monta'na*. 2. Red, white. May. E. Ind. 1824.
 — *parvifo'ra*. $\frac{3}{4}$. White, violet. January. Promé. 1828.
 — *petiola'ta*. $1\frac{1}{2}$. White, yellow; bracts rose-purple. September. Pegu. 1869. B. M. t. 5821.
 — *Roscea'na*. 1. Scarlet. September. E. Ind. 1837. B. M. t. 4667.
 — *reclina'ta*. $\frac{1}{2}$. Pink. April. E. Ind. 1829.
 — *rube'scens*. 3. Red. July. Bengal. 1805.
 — *rubricau'tis*. 1. Yellow. May. E. Ind. 1822.
 — *sumatra'na*. 1822.
 — *viridifo'ra*. 2. Yellow, green. July. Sumatra. 1822.
 — *xanthorhi'za*. 4. Red. May. Amboyna. 1819.
 — *zedo'ria*. 3. Red. July. E. Ind. 1797. B. M. t. 1546.
 — *Zeru'mbet*. 3. Yellow. July. E. Ind. 1807.

Curme'ria. See **Homalomena**.

Currants. THE RED, *Ribes ru'brum*; THE WHITE, *R. ru'brum*, var. *al'bum*; 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:

- Mammoth. One of the largest.
 Baby Castle. Late; large acid fruit; hang well.
 La Fertile. Prolific; good and large.
 Cherry. Early; large fruit.

Red Dutch. Fine fruit; bunch very long.

White Dutch. Very large and juicy berries.

Knight's Sweet Red. As its name imports.

Knight's Large Red. Said to be larger than Red Dutch.

Houghton seedling, or Goliath. Is both late and fine.

Red Champagne. Flesh-colour; good cropper.

White Varieties.—Common White; Pearl White; and White Dutch, the last being the largest and best. Wilmott. Large white; good cropper.

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 inter-nodes 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, and 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 plant.

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. They are averse to water-logged soil in any form.

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 littersy 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 carried thus far, 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 inclosing 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 aphid, 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—

The Common Black. A good bearer, but fruit small.

Lee's prolific. Sweet; good cropper.

Ogden's black grape. Good cropper.

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 into action too early. In pruning, very

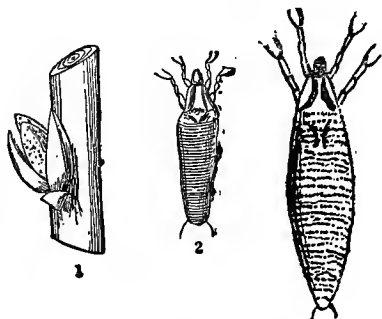
little of the shortening, as applied to the Red and White kinds, is necessary; in fact, we practise none at all, unless in the case of overgrown bushes, when we merely remove altogether, or shorten back, those which are becoming inconveniently high. The whole of the process of winter pruning, therefore, 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 Sphinx. (*Trochilum tipuliflorum*.) Every one acquainted with old gardens must have frequently noticed that one or more of the branches of the currant-trees tenanted 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 ex-

amination 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.

Currant-bud disease. Currant buds, especially those of the Black Currant, not unfrequently prove abortive without any very apparent cause; but if the scales be a little opened out, and



examined under a lens, they will be found to be infested with a very minute whitish mite. Fig. 1 represents an infested bud with the scales partly open, slightly magnified; Fig. 2, a mite, greatly magnified.

The mites are so minute as to be scarcely visible to the eye, being not more than about $\frac{1}{100}$ of an inch in length. The body is white and fleshy, with numerous transverse rows of very minute points (represented by lines in the engraving). In all the examples we have seen, there were only two pairs of legs and two terminal bristles; but in the "Gardeners' Chronicle" for 1869, p. 841, they are stated to have, later in the year, three or four pairs of legs. The Currant-mites cause the abortion of the flowering shoots, by sucking the juices of the young buds, and it is probable that when they have exhausted the juices of one bud they migrate to another; and as this is unlikely to take place before the uninjured buds have fully expanded their leaves, and the next year's buds commenced to form, it is then that the diseased buds should be picked off and destroyed, and in badly infested bushes the branches should be coated with lime.

Currant-gall. See Oak-galls.

Curti'sia. Hassagay-tree. (In honour of the late *William Curtis*, who originated the *Botanical Magazine*. Nat. ord., *Cornaceæ*.)

Cornels are entirely distinct from Caprifoliis, with which they have long been associated. The Hottentots and Caffers make from this tree the shafts of their javelins. Greenhouse evergreen tree; sandy loam and peat; cuttings in sand, under glass, in heat.

C. fagi'nea. 80. Pale. Cape of Good Hope. 1775. Harv. Thes. Cap. t. 124.

Cu'scuta. Dodder. (From *kechou*, its Arabic name. Nat. ord., *Convolvulaceæ*; Tribe, *Cuscutæ*.)

One peculiarity in all the Didders is that the seeds germinate in the earth; but, as soon as the branches 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; sown in April. They will live upon almost any plant they can lay hold of, such as the common stinging-nettle, clover, hemp, etc.

STOVE.

- C. america'na.* August. S. Amer. 1816.
- *Hookeri.* September. E. Ind. 1823.
- *odora'ta.* January. Lima. 1820.

GREENHOUSE.

- C. australia's.* August. Port Jackson. 1818. B. R. t. 603.
- *chile'nsis.* August. Chili. 1821.

HARDY.

- C. califo'rnica.* July. California. 1847.
- *chine'nsis.* August. China and India.
- *epill'num.* July. Britain. Eng. Bot. ed. 3, t. 926.
- *epithy'mum.* July. Britain. Eng. Bot. ed. 3, t. 928.
- *europa'a.* July. Britain. Eng. Bot. ed. 3, t. 927.
- *lupulo'formis.* See *C. monogy'ma.*
- *macroca'rupa.* July. Siberia. 1827.
- *monogy'na.* July. Levant. 1818. Syn., *C. lupulo'formis.*

C. reflexa. August. Nepaul. 1821. B. M. t. 6566. Syn., *C. verrucosa*.
 — *trifolii*. July. Britain. Syn., *C. minor*, var. *trifolii*.

Cusso'nia. (Named after *P. Cusson*, a French botanist. Nat. ord., *Araliacæ*. Allied to *Panax*.)

Greenhouse evergreen shrubs from South Africa, with green flowers; cuttings in sand, under a glass, with bottom-heat; loam and peat.
C. spicata. 6. November. Caffraria. 1789. Syn., *C. triptera*.
 — *thrysiiflora*. 6. Summer. Table Mt. 1795.
 — *triptera*. See *C. spicata*.

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.

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 offshoots 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*, *Pelargoniums*, *Petunias*, *Penstemons*, *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:—*Aca-cias*, *Aphelaxis*, *Azalea* (Chinese), *Boronia*, *Bossiaea*, *Chironia*, *Chorozema*, *Crowea*, *Correa*, *Cytissus*, *Daviesia*, *Dil-*

wynia, *Epacris*, *Eriostemon buxifolium* (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 particularize 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*, *Statice*, 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: (*Oenothera macrocarpa* is one, and *Oenothera 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*, *Ipomæas* (the tuberous-rooted species), and the *Petræa Stapelia*.

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 pre-

sence 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.—Except for particular cases, nothing is better than silver sand placed over a layer of soil in which the plant delights, and beneath this the pot to be filled with drainage. In general cases, half an inch of sand, and three-quarters of an inch of sandy peat, or sandy loam, will be amply sufficient; and the nearer the cuttings are inserted to the side of the pot, the sooner will they protrude roots. When a bell-glass is used that would come close to the side of the pot, it is a good thing to put one pot inside a

larger one, fill up the space between them to within a requisite distance of the top with drainage, then with the soil and sand, and place the cuttings firmly round the outside of the inner pot. In this case the inner pot may be empty, be supplied with damp moss, or even, in some peculiar cases, filled with water, though the latter would be more generally applicable to stove than greenhouse plants. The turning of a smaller pot topsy-turvy inside of a large one, so that the inner forms a sort of chimney, and inserting the cuttings round the sides of its inverted bottom, now the top, is also a good plan, especially when it is desirable to give the plants the stimulus of a good bottom-heat, as by stopping with potsherd the hole in the bottom, now uppermost, the stimulus is applied to the base of the cutting; and thus roots are encouraged, rather than lengthened upwards.

Bottom-heat.—Unless where fresh growth is rapidly making, and the plants have received extra stimulus on purpose, *greenhouse plants* should not have bottom-heat, in general, until a callus is formed at their base. When that is done, a mild, moist bottom-heat—a heat a medium between the general temperature of a greenhouse and a stove—may be given with advantage. When, however, in many hard-wooded plants, heat has been given to cause the protrusion of short new shoots from one to two inches in length, and these are taken off just as their bottoms are getting a little firm, then in their case a mild, sweet hotbed at once will just suit them, care being taken that the atmosphere is not kept too hot, to cause more elongation upwards. *Stove plants*, on the other hand, as they require more heat at all times than greenhouse plants, so scarcely ever do their cuttings suffer from bottom-heat, though pretty strong; and hence it often happens that they are more readily propagated than greenhouse shrubs.

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 *kyanos*, blue, and *anthos*, a flower. Nat. ord., *Campanulaceæ*; Tribe, *Campanuleæ*. Allied to *Campanula*.)

A pretty little hardy herbaceous plant; requires a damp peaty soil. Seeds and cuttings under a hand-light; sandy soil.

C. lobatus. †. Purple, blue. August. Chinese Tartary. 1844. B. R. 1847, t. 6.

Cyane'lla. (From the diminutive of *kyanos*, blue. Nat. ord., *Liliaceæ*; Tribe, *Conanthereæ*. Allied to *Anthericum*.)

Pretty little bulbous plants, from South Africa, 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. alba. 1. White. July. 1819.
C. cape'nsis. 1. Blue. July. 1768. B. M. t. 568.

— *iv' tea*. 1. Yellow. July. 1788. B. M. t. 1252.

— — *linea'ta*. 1. Striped. July. 1816.

— — *odoratissima*. 1. Red. July. 1826. Syn.,

C. odoratissima, B. R. t. 1111.

— *orchidifo'rmis*. 1. Blue. August. 1826.

— *ro'sea*. Rose. S. Africa. 1872. Syn., *C. lutea rosea*. Ref. Bot. t. 259.

Cyanophyllum. (From *kyanos*, blue, and *phyllon*, a leaf; referring to the colour of the leaves' under-surface. Nat. ord., *Melastomaceæ*. United to *Miconia* in the Genera Plantarum.)

Stove evergreens. Cuttings under a hand-glass in heat. Sandy peat and loam.

C. assa'micum. Assam. 1858.

— *Boruma'ni*. Brazil. 1868.

— *magni'ficum*. Mexico. 1858. Rev. Hort. 1859, p. 339. Syn., *Miconia magnifica*.

— *meta'llicum*. † Pale purple. Andes of Venezuela. 1852. Syn., *Miconia metallica*.

— *specio'sum*. Mexico. 1861.

— *specta'ndum*. Brazil. 1866.

Cyanothamnus. (From *kyanos*, blue, and *thamnus*, a shrub; referring to its flowers. Nat. ord., *Rutaceæ*; Tribe, *Boroniææ*. Allied to *Boronia*.)

Greenhouse evergreen shrubs, from Swan River. Cuttings in moderate heat, in sand under a glass; sandy loam and peat.

C. ramosus. Blue.

— *tenis*. Blue. Annual.

Cyano'tis. (From *kyanos*, blue, and *ous*, an ear; referring to the shape of the petals. Nat. ord., *Commelynaceæ*. Allied to *Tradescantia*.)

Rich soil; *C. barba'ta* is increased by root-division, the others by seed.

C. axilla'ris. 1. Blue. August. E. Ind. 1822. Greenhouse biennial.

— *barba'ta*. 1. Blue. August. Nepaul. 1824. Hardy perennial.

— *crista'ta*. 1. Blue. August. Ceylon. 1770. Greenhouse biennial.

— *kewe'nsis*. Rose. Winter and spring. Malabar. 1874. Syn., *Erythrotis Beddomei*.

— *nodiflo'ra*. Purple. S. Africa. 1864.

— *vitta'ta*. See *Zebrina pendula*.

Cya'thea. (From *kyatheion*, a little cup; in reference to the appearance of the spore or seed-cases on the back of the leaves. Nat. ord., *Filices*.)

Stove evergreen tree-ferns, except otherwise specified; loam and peat; root division or spores.

C. aculea'ta. W. Indies.

— *arbo'rea*. 15. W. Ind. 1793.

— *Burkei*. 10. Natal. 1873.

— *canalicula'ta*. Mauritius.

— *Cunninghami*. 30. New Zealand. 1860.

— *dealba'ta*. New Zealand. Greenhouse

— *Dre'gei*. 4. Natal. 1873.

— *e'legans*. Jamaica. 1843.

— *exce'lsa*. 20. Mauritius. 1825.

— *june'bris*. New Caledonia. 1873.

— *Hooke'ri*. Ceylon. 1868.

— *ins'i'gnis*. Syn., *Cibotium princeps*.

— *in'tegra*. Isle of Luzon.

— *medulla'ris*. New Zealand. Greenhouse.

— *microphy'lla*. Andes of Peru. 1884.

— *petiola'ta*. Jamaica.

— *pube'scens*. 3. Jamaica. 1879.

— *se'rra*. W. Indies.

— *sinua'ta*. 3. Ceylon. 1861.

— *Smi'thii*. 25. New Zealand. 1860

— *spinulo'sa*. India and Japan.

Cyatho'des. (From *kyathos*, a cup; referring to the form of the limb, or expanded opening of the flower. Nat. ord., *Epacridaceæ*. 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. 8. July. 1823.

— *glau'ca*. 20. April. 1818.

— *oxyce'dra*. 6. April. 1822.

Cy'cas. (Greek name for a Palm. Nat. ord., *Cycadaceæ*.)

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 evergreens; require plenty of pot room; rich, sandy loam, and moist heat. Young plants are often obtained from suckers. *C. circinatis* and *C. revoluta* are the species mostly found in small gardens.

C. angula'ta. 4. Australia. 1874.

— *Armstro'ngii*. Australia. 1870.

— *Beddo'mei*. India. 1833.

— *Bellefo'nti*. 5. Tonkin. III. Hort. t. 586.

— *circina'tis*. 8. India. 1880. B. M. tt. 2826-27

- C. Duivenbo'dei*. 3. Trunk spiny, covered with dark brown scales. Moluccas.
 — *glau'ca*. 4. India. 1818.
 — *imperia'lis*. South Africa. 1873.
 — *in'e'rmis*. Cochin China. 1848.
 — *me'dia*. 70. Queensland. 1874.
 — *Normanby'da*. New South Wales. 1875.
 — *plumo'sa*. 1865.
 — *reolu'ta*. 3 July. China. 1737. B. M. t. 2963-64.
 — *Riumin'da*. Philippines. 1864.
 — *Ru'mphii*. Moluccas.
 — *Seema'nii*. 5-7. 1833.
 — *siame'nsis*. Cochin China. 1878.
 — *spha'rica*. Moluccas. 1845.
 — *squarro'sa*. 4. E. Ind. 1824.
 — *undula'ta*. Polynesia. 1881.

Cyclamen. Sowbread. (From *kylaios*, circular; referring to the shape of the corm or bulb-like root. Nat. ord., *Primulaceae*.)

Cyclamens are very acrid, yet are the favourite food of wild boars in Sicily, whence the English name. Beautiful bulbous plants, suitable for naturalizing in woods.

HARDY.

- C. aesti'vum*. See *C. europæum*.
 — *africa'num*. $\frac{1}{2}$. White, purple. September. Algeria. B. M. t. 5758. Syns., *C. algeriense* and *C. macrophyllum*.
 — *al'bum*. See *C. persicum*.
 — *alep'e'nse*. See *C. persicum*.
 — *ale'ppicum*. See *C. persicum*.
 — *algeri'e'nse*. See *C. africanum*.
 — *antio'chium*. See *C. persicum*.
 — *Atki'nzii*. $\frac{1}{2}$. White, bright purple. Spring. A garden hybrid between *C. Coum* and *C. ibericum*.
 — *autumna'le*. See *C. neapolitanum*.
 — *balea'ricum*. See *C. repandum*.
 — *cauca'sicum*. See *C. ibericum*.
 — *cali'cicum*. $\frac{1}{2}$. Rosy-white, carmine. Autumn. Cilicia. 1849.
 — *Chu'sii*. See *C. europæum*.
 — *Co'um*. $\frac{1}{2}$. Lilac, red. Spring. S. Europe. 1596. B. M. t. 4.
 — *cy'pricum*. See *C. neapolitanum*.
 — *e'legans*. See *C. ibericum*.
 — *europæ'um*. $\frac{1}{2}$. Lilac, red. August. South Europe. 1596. B. R. t. 1013, and 1846, t. 56. Syns., *C. æstivum*, *Chusii*, *litorale*, *odoratum*, *officinale*, *Peakianum*, and *retroflexum*.
 — *fi'carifolium*. See *C. repandum*.
 — *giga'n'teum*. See *C. persicum*.
 — *gra'cum*. $\frac{1}{2}$. White, bright purple. Autumn. Greece. 1834. Rev. Hort. 1855, t. 24.
 — *hedera'folium*. See *C. neapolitanum* and *C. repandum*.
 — *ibe'ricum*. $\frac{1}{2}$. Bright red, purple. Spring. Caucasus. 1831. Swt. Fl. Gard. t. 9. Syns., *C. caucasicum*, *elegans*, *vernale*, and *vernum*.
 — *indicum*. See *C. persicum*.
 — *latifo'lium*. See *C. persicum*.
 — *linearifolium*. See *C. neapolitanum*.
 — *litora'le*. See *C. europæum*.
 — *macrophyllum*. See *C. africanum*.
 — *neapolita'num*. $\frac{1}{2}$. White, red, violet-purple. Autumn. South Europe. 1583. B. R. 1838, t. 49. Syns., *C. autumnale*, *cypricum*, *hedera'folium* (in part), *linearifolium*, *Poh.*, and *subhastatum*.
 — *odora'tum*. See *C. europæum*.
 — *officina'le*. See *C. europæum*.
 — *Peakia'num*. See *C. europæum*.
 — *Po'h.* See *C. neapolitanum*.
 — *purpura'scens*. See *C. europæum*.
 — *pyrena'icum*. See *C. neapolitanum*.
 — *pyrola'efolium*. See *C. persicum*.

- C. repa'ndum*. $\frac{1}{2}$. Rose-red, bright purple. Spring. South Europe. B. M. t. 1001. Syns., *C. balea'ricum*, *fi'carifolium*, and *hedera'folium* (in part).
 — *retroflexum*. See *C. europæum*.
 — *subhasta'tum*. See *C. neapolitanum*.
 — *verna'le*. See *C. ibericum*.
 — *ver'num*. See *C. ibericum*.

GREENHOUSE.

- C. pe'rsicum*. $\frac{1}{2}$. Red, white. February. Cyprus. 1731. Syns., *C. album*, *alepense*, *aleppicum*, *antiochum*, *giganteum*, *indicum*, *latifolium*, and *pyrolaefolium*.
 — *albifo'rum*. $\frac{1}{2}$. White. February. Cyprus. 1731.
 — *inodo'rum*. $\frac{1}{2}$. Red, white. February. Cyprus. 1731.
 — *lacinia'tum*. $\frac{1}{2}$. Red, white. April.
 — *lila'ceum*. $\frac{1}{2}$. Lilac. February.
 — *odora'tum*. $\frac{1}{2}$. Red, white. February. Cyprus. 1731.
 — *puncta'tum*. $\frac{1}{2}$. White, lilac. March.

Propagation: by Seed.—This is the only way of propagating Cyclamens. The root, 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; place them in a cold frame, excepting *C. pe'rsicum*, 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. pe'rsicum* 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 $3\frac{1}{2}$ -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 wireworms prey upon them.

Diseases.—Sometimes when the bulbs become large they lose the power of growing again; the buds on the crown appear to be dead. We know of no remedy.

Culture in the open air.—All the species, excepting *C. persicum* 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.

Cyclanthis. (Derivation not explained. Nat. ord., *Cyclanthaceæ*.)

Stove perennials. Peat, two parts to one of rich sandy loam. Seeds.

C. bipartitus. Guiana.

—*discolor.* Young leaves variegated with tawny orange. Columbia. 1882.

Cyclobotrya. (From *kyklos*, a circle, and *bothros*, a pit; in reference to a cavity at the bottom of each petal, as is shown in our figure of **Calochortus**, to which this genus is now united. Nat. ord., *Liliaceæ*.)

C. alba. See *Calochortus albus*.

—*barbata.* See *Calochortus barbatus*.

—*lutea.* See *Calochortus luteus*.

—*monophylla.* See *Calochortus monophyllus*.

—*pulchella.* See *Calochortus pulchellus*.

—*purpurea.* See *Calochortus purpureus*.

Cycloidium. (From *kyklos*, a circle; referring to the form of the indusium. Nat. ord., *Filices—Polypodiaceæ*.)

Stove fern. See **FERNS**.

C. confertum. Guiana.

Cylogyne. (From *kyklos*, a circle, and *gyne*, a stigma, or female organ; in reference to the disposition of the pistils. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. Allied to *Galega*.)

C. canescens. 1. Purple. May. Swan River. Greenhouse evergreen.

Cyclonema. See **Clerodendron**.

Cyclopetalis. (From *kyklos*, a circle, and *petle*, a shield; alluding to the form

of the indusium. Nat. ord., *Filices—Polypodiaceæ*.)

Stove fern, allied to *Aspidium*. See **FERNS**.

C. semicordata. 3. W. Indies.

Cyclo'pia. (From *kyklos*, round-eyed; the standard bears a roundish mark. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ*.)

Greenhouse evergreen. Cuttings of young wood. Loam and peat.

C. genistoides. S. Africa. 1884.

Cycno'ches. Swan-neck. (From *kyklos*, a swan, and *auchen*, the neck; in reference to the long and gracefully-curved column. Nat. ord., *Orchideæ*; Tribe, *Vandee-Cyrtopodieæ*. Allied to *Cyrtopodium*.)

Stove orchids. Strong, moist heat whilst growing; rough, fibry peat, and half-decayed leaves, with a little sand; root division.

C. aureum. 1. Yellow. Central America. 1851.

—*barbatum.* See *Polycygnis barbata*.

—*chlorochilum.* 2. Yellowish. June. Demerara. 1838.

—*Cumangi.* White, yellow. June. Singapore.

—*Lekmanni.* Salmon, orange. Columbia. 1880.

Syn., *Luddemannia Lekmanni*.

—*Loddigei.* 1. White, purple. May. Surinam. 1830.

—*leucochilum.* 1. Yellow, white. June. Guiana.

—*maculatum.* 1. Buff, purple. June. Mexico. 1839.

—*musiferum.* Brown. February. Columbia. 1852.

—*pentadactylon.* 1. Yellow, brown. March. Brazil. 1841.

—*Pescatorei.* B. M. t. 7123. See *Luddemannia Pescatorei*.

—*stelliferum.* Green, brown. May. Oaxaca. 1843.

—*ventricosum.* 2. Green, white. Guatemala. 1835.

—*Egertonianum.* 2. Purple, green, pink. June. Guatemala. 1840.

—*versicolor.* Dark green to deep brown; lip white to yellowish. Brazil. 1888.

—*Warscewiczii.* 1. Green. 1879.

Cydonia. Quince. (Its native place *Cydon*, in *Candia*. Nat. ord., *Rosaceæ*; Tribe, *Pomeæ*.)

Hardy deciduous trees and shrubs. *C. japonica* is one of our handsomest flowering shrubs; layers in September, and to remain until that time twelvemonths before taken off; also by seeds. See **QUINCE**.

C. chéne'nsis. 15. Pink. May. China. 1818.

—*pyramidalis.* White. May. 1847.

—*japonica.* 4. Scarlet. Japan. 1815.

—*alba.* 4. White.

—*carnea.* Flesh-coloured. March.

—*stó're-se'mi-plé'no.* 4. Red. August.

—*Mau'lei.* Bright red. April. Japan. 1574.

Syn., *Pyrus Maulet*. B. M. t. 6780.

—*vulgaris.* 20. White. May. Austria. 1573.

Common quince.

—*lusitanica.* 20. White. May. Spain.

—*maliformis.* 20. White. May. 1573.

—*marmorata.* Leaves variegated with white and yellow. 1889.

—*oblonga.* 20. White. May. Europe.

—*pyriformis.* Fruit pear-shaped.

Cyli'sta. (From *kylistos*, twining; referring to the habit of the plants.

Nat. ord., *Leguminosæ*. Allied to *Rhynchosia*.)

Stove evergreen twiners. Loam and peat; cuttings in sand, under glass, in bottom-heat.

- C. albiflora*. 6. White. April. Mauritius.
- *scario*sa. 4. Yellow. E. Ind. 1806.
- *tomentosa*. 4. Yellow. E. Ind. 1816.
- *villo*sa. 6. Yellow. April. Cape of Good Hope. 1776.

Cyma'tion læviga'tum. See *Lichensteinia lævigata*.

Cymbi'dum. (From *kymbe*, a boat; referring to a hollow recess in the-lip, or labellum. Nat. ord., *Orchideæ*.)

Stove orchids. Fibry loam, fibry peat, and leaf-mould, well drained; root division.

- C. affi*ne. See *Cyperorchis affinis*.
- *albu*ceflorūm. See *C. madiūm*.
- *alo*isiflorūm. 1. Purple, black. September. E. Ind. 1789.
- *Anders*oni. Andr. Rep. t. 651. See *Cyrtopodium Andersoni*.
- *bi*color. Purple. Crimson. April. Ceylon. 1837.
- *bituber*culatūm. See *Liparis*.
- *canalic*ulatūm. Brownish-purple, green, white, pink. April. N.E. Australia. 1870.
- *chlora*nthum. Yellow, crimson. May. Australia. 1840. B. M. t. 4907.
- *cocci*neum. B. M. t. 1437. See *Ornithidium coccineum*.
- *cochlea*re. See *Cyperorchis cochleare*.
- *Daya*num. Yellowish-white, dark purple. Assam. 1869.
- *depe*ndens. See *Cirrhaea viridi-purpurea*.
- *Devonia*num. 1. White, crimson. March. Assam. 1837.
- *diu*num. Bahama.
- *ebu*'neo-louvia'num. Pale yellow; lip with a crimson blotch. Garden hybrid. 1889.
- *ebu*'rneum. White, yellow-striped. May. E. Ind. 1846. B. R. 1847, t. 67. B. M. t. 5126.
- — *Philbrickia*num. White.
- — *Williamsia*num. Purple. 1881.
- *e*'legans. Yellow. May. Nepal. 1840. Syn., *Cyperorchis elegans*.
- — *obcorda*tūm. Honey-colour. 1879.
- *ensifo*lorūm. Yellowish, spotted brown. China. 1780.
- — *estria*tūm. Green, white, purple, yellow. Assam. 1888. B. R. t. 1976.
- — *stria*tūm. Yellowish, striped reddish-brown. China. B. M. t. 1751.
- *Finlaysonia*num. Cochin China.
- *Gibso*ni. White, red. January. Sylhet. 1837.
- *giga*ntheum. Brown, purple. Nepal. 1837. Paxt. Mag. xiv. p. 241. B. M. t. 4844.
- — *di*'scolor. Green, purple. E. Indies. 1860.
- — *Lovia*num. See *C. Lowianum*.
- *Hookeria*num. Cream, crimson. Sikkim Himalaya. 1866.
- *Hutto*'ni. Chocolate. Java. 1857.
- *hyacinthi*'num. B. M. t. 1492. See *Bletia hyacinthina*.
- *iridi*foliūm. Dark brown. March. E. Ind. 1837.
- *lanci*foliūm. $\frac{3}{4}$. White, red. September. Nepal. 1822. B. C. t. 927.
- *Leachia*num. Whitish-ochre, brown. Formosa. 1878.
- *longi*foliūm. Olive-green, brown, whitish. November. India. 1873.
- *Lovia*num. Green, brown, yellowish, purple. March. Burmah. Syn., *C. giganteum*, var. *Lowianum*.

- C. ma*'didum. Olive-green. May. N.E. Australia 1839. Syn., *C. albu*ceflorūm.
- *margin*atūm. B. R. t. 1530. See *Mazillaria marginata*.
- *Maste*'rsii. B. R. 1845, t. 50. See *Cyperorchis Mastersii*.
- — *al*'bum. Flowers unspotted. Assam.
- *ochroleu*'cum. B. R. t. 4141. See *Camaridium ochroleucum*.
- *Pari*'shii. White, orange, purplish. Burmah. 1874. One of the best.
- *pe*'ndulum. 3. Yellow, red, white. June. Nepal. 1838. B. R. 1840, t. 25.
- — *atropurpu*'reum. 2-3. Dark-purple, white. March. E. Indies. 1868.
- — *brevila*'bre. 2. Green, red, yellow. June. Singapore. 1840. B. E. 1844, t. 24.
- *pube*'scens. 1. Purple, yellow. April. Singapore. 1838. B. R. 1841, t. 38.
- *Sanders*oni. A synonym of *Ansellia gigantea*.
- *sine*'nse. 1 $\frac{1}{2}$. Purple, brown. China. 1793. B. C. t. 37.
- *sua*'ve. Green, brown. May. Australia. 1826.
- *tigri*'num. Green, white, crimson. Tenasserim. 1864. B. M. t. 5457.
- *Tracya*'num. A large-flowered variety of *C. grandiflorum*. 1890.
- *tri*'pterum. White. July. Jamaica. 1790.
- *tri*'ste. B. M. t. 3648. See *Luisia teretifolia*.
- *zephy*'foliūm. Yellowish-green, China. B. R. t. 529.

Cyna'nehum. (From *kyon*, a dog, and *agche*, to kill; referring to its poisonous qualities. Nat. ord., *Asclepiadaceæ*. 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. 6. White. E. Indies. 1806. Andr. Rep. t. 562. Syn., *Dæmia bicolor*.
- *finbria*'tum. 10. Purple. July. Cumana. 1826.
- *Heyria*'num. 6. White. E. Ind. 1825.
- *hirsu*'tum. 6. Trinidad. 1825.
- *unda*'tum. Greenish-yellow. July. E. Indies. 1803. Andr. Rep. t. 410.

GREENHOUSE EVERGREEN TWINER.

- C. cape*'nse. 6. White. July. Cape of Good Hope. 1820.

HARDY HERBACEOUS PERENNIALS.

- C. acu*'tum. 3. White. July. Spain. 1596.
- *cirrho*'sum. 3. 1825. Deciduous twiner.
- *exce*'lsum. 10. White. July. Barbary. 1816. Deciduous twiner.
- *flave*'scens. Yellow. July. Japan.
- *lu*'teum. 2. Yellow. June. Europe. 1596.
- *macrorhi*'zon. Yellowish-green, white. Japan. 1873.
- *me*'dium. 3. White. June.
- *mela*'nthos. 3. Purple. July. 1818. Deciduous twiner.
- *monspe*'liacum. 3. White. August. South Europe. 1596. Jacq. Ic. t. 340.
- *purpura*'scens. Purple. July. Japan. 1852.
- *ro*'seum. 3. Purple. July. Davuria. 1818. Deciduous twiner.
- *villo*'sum. 3. White. July. 1821. Deciduous twiner.

EXCLUDED SPECIES.

- C. bi*'color. Andr. Rep. t. 562. See *Dæmia extensa*.
- *caroline*'nse. Jacq. Ic. t. 342. See *Gonolobus carolinensis*.
- *di*'scolor. B. M. t. 1273. See *Gonolobus*.
- *ere*'ctum. Jacq. Vind. t. 38. See *Marsdenia*.

- C. exte'nsum*. Jacq. Ic. t. 54. See *Dæmia extensa*.
 — *macronatum*. Andr. Rep. t. 515. See *Gonolobus macronatus*.
 — *nigrum*. B. M. t. 2390. See *Vincetoxicum*.
 — *obliquum*. See *Gonolobus obliquus*.
 — *pilosum*. B. R. t. 111. See *Vincetoxicum*.
 — *Vincetoxicum*. See *Vincetoxicum officinale*.
 — *viridiflorum*. B. M. t. 1929. See *Tylophora*.

Cyna'ra. Artichoke. (From *kyon*, a dog; the spines on the involucre, or guard-leaves, immediately below the flower, being likened to dogs' teeth. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*.)

Hardy herbaceous perennials, except where otherwise stated. Increased by seeds and root division. See ARTICHOKE and CARDOON.

- C. Cardu'neulus*. 5. Blue. August. Candia. 1658. B. M. t. 3241. The Cardoon.
 — *ferox*. 5. Blue. July. Italy. 1820.
 — *glomerata*. $\frac{1}{2}$. Blue. August. Cape of Good Hope. 1824. Half-hardy.
 — *horrida*. 6. Purple. August. Madeira. 1768. Greenhouse.
 — *integrifolia*. 4. Blue. July. Spain.
 — *pygmaea*. 1. Purple. July. Spain. 1820.
 — *Scotymus*. 8. Purple. August. South Europe. 1548. The Artichoke.
 — *spinossima*. 4. Blue. July. Sicily. 1826.

Cynips a'ptera. This insect attacks the roots of several trees, such as the Elm, Oak, Deodar, Holly, etc., but does not appear to be injurious to them to any great extent. It causes the formation of largish clusters of galls (Fig. a)



upon the roots, in which the larva undergoes its transformations. The perfect insect (Fig. b) is about a quarter of an inch in length; it is of a light brown colour, quite wingless, and has the abdomen compressed; in general appearance it much resembles an ant, and if touched emits a peculiar but not unpleasant odour. See the "Gardeners' Chronicle," 1874, n. s. i., p. 19.

Cynips Ro'sæ, *C. Bedegaris*, or *Rhodites ro'sæ*, 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 those shrubs.

Cynoglossum. Hound's Tongue. (From *kyon*, a dog, and *glossa*, a tongue;

referring to the shape of the leaves. Nat. ord., *Boraginææ*.)

Nearly all hardy; some are very pretty border-flowers; common soil; seeds or root division.

ANNUALS.

- C. canescens*. 2. Blue. July. E. Ind. 1819.
 — *diffusum*. White. July. India. 1820.
 — *hirsutum*. 1. Blue. July. Cape of Good Hope. 1806.
 — *lanceolatum*. White, blue. July. Africa. 1806.

BIENNIALS.

- C. apenninum*. 6. Red. May. Italy. 1731.
 — *bicolor*. 2. White, purple. July. Germany. 1820.
 — *caelestinum*. 2. White, blue. August. India. 1837. Greenhouse.
 — *cheiriflorum*. $1\frac{1}{2}$. Blue. June. Levant. 1596.
 — *clandestinum*. 2. Brown. July. Spain. 1820.
 — *Columba*. 2. Blue. July. Apennines. 1825.
 — *Dioecoidis*. 2. Purple. July. France. 1820.
 — *divaricatum*. Purple. June. Siberia. 1837.
 — *elongatum*. 2 $\frac{1}{2}$. Flesh. July. 1819.
 — *gluchidiatum*. 2. Blue. June. India. 1837. Greenhouse. B. R. 1841, t. 15.
 — *glomeratum*. 2. June. N. Amer. 1812.
 — *Ha'nkii*. 2. Blue, purple. July. Bohemia. 1819.
 — *holosericeum*. 2. Violet. July. Siberia. 1821.
 — *lateriflorum*. Purple. June. Europe. 1838.
 — *officinale*. 2. Purple, red. June. Britain.
 — *picum*. 2. Light blue. August. Madeira 1658. B. M. t. 2134.
 — *syriacum*. 3. Blue. June. Britain.
 — *umbellatum*. 2. Purple. June. Hungary. 1817.

PERENNIALS.

- C. amplexicaule*. 2. Blue. June. N. Amer. 1812.
 — *australe*. 2. Pale red. June. Australia. 1820. Greenhouse.
 — *grandiflorum*. 3. Blue, white. India. 1830.
 — *magellense*. 1. Purple. June. Naples. 1823.
 — *petiolatum*. 1. Purple. Nepaul. 1840. Syn., *Achusa petiolata*.
 — *tomentosum*. Violet. May. Italy. 1823.
 — *virginicum*. Blue, white. June. N. Amer. 1812.

EXCLUDED SPECIES.

- C. anchusoides*. B. R. 1842, t. 14. See *Paracaryum*.
 — *caelestinum*. B. R. 1839, t. 36. See *Paracaryum*.
 — *longiflorum*. B. R. 1840, t. 50. See *Lindelofia*.
 — *nitidum*. B. M. t. 2529. See *Omphalodes*.
 — *Omphalodes*. B. M. t. 7. See *Omphalodes*.

Cynometra. (From *kyon*, a dog, and *metra*, matrix; referring to the seed-pods. Nat. ord., *Leguminosæ*; Tribe, *Cynometreæ*. Allied to *Hardwickia*.)

Stove evergreen trees, from the East Indies. Loam and sandy peat; cuttings in sand, under glass, with bottom-heat.

- C. cauliflora*. 30. Red. 1804.
 — *polyandra*. 20. Red. 1822.

Cynosorchis. (Derivation not stated. Nat. ord., *Orchideæ*.)

Stove orchids.

- C. elegans*. White, rose, purple. Madagascar. 1888.
 — *Lowiana*. Pale green; lip lilac with a purple spot. Madagascar. 1888.

Cype'lla. (From *kypellon*, a goblet or cup; referring to the form of the flowers. Nat. ord., *Iridaceæ*. Allied to *Herbertia*.)

Pretty little half-hardy bulbs, requiring the same treatment as *Ixias*. Sandy loam and peat; offsets.

- C. bra'chypus*. See *Marica*.
- *cœru'lea*. Orange and brown at base, blue upwards; leaves mottled. Bahia. 1866. Syn., *Marica cœrulea*.
- *Herbe'rtii*. 1. Vermilion. July. Buenos Ayres. 1823. B. C. t. 1810.
- *peruvia'na*. Yellow, purple, brown. Peru. 1874.
- *phu'mbea*. Blue. Mexico. 1838.

Cypero'rchis. (Derivation not given. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Cymbidiææ*.)

For culture, see CYMBIDIUM.

- C. aff'nis*. White, crimson, yellow. India. 1878. Syn., *Cymbidium affine*. Warn. Orch. Alb. t. 140.
- *cochlea'ris*. Yellow, brown, red. Burmah. 1880. Syn., *Cymbidium cochleare*.
- *e'legans*. Yellow. India. B. M. t. 7007.
- *Maste'rrii*. 1½. White, yellow, red. India. 1841. Syn., *Cymbidium Mastersii*, B. K. 1841, t. 50.

Cype'rus. (The Greek name for this genus. Nat. ord., *Cyperaceæ*.)

Ornamental grasses, some of the species are largely used for table decoration. Rich loam, division, seeds. They like plenty of moisture.

- C. alternifo'lius*. 2½. Australia.
- — *variega'tus*. 1½. Stem and leaves striped with white. Stove aquatic.
- *compre'ssus*. 1. Green. Tropics. 1870.
- *di'stans spiralifo'rmis*. 1888.
- *e'legans*. 7. July. W. Indies. 1820. Syn., *Papyrus elegans*.
- *Lacou'ri*. See *Kytilingia monoccephala*.
- *laxifo'rus*. 7. July. Madagascar. 1822. Syn., *Papyrus laxiflorus*.
- *la'rus*. 3. Greenish-brown. W. Indies, Brazil. 1874.
- — *variega'tus*. Leaves variegated. 1881.
- *lo'ngus*. 4. Europe and N. Africa.
- *natale'nsis*. See *Mariscus sparganifolius*.
- *odora'tus*. 10. July. W. Indies. 1819. Syn., *Papyrus odoratus*.
- *Papy'rus*. 10. August. Egypt. 1803. Syn., *Papyrus antiquorum*.

Cy'phia. (From *kypchos*, curved; referring to the shape of the style and stigma. Nat. ord., *Campanulacææ*. 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, and sand.

- C. bulbo'sa*. ½. Pale blue. August. 1791. Annual.
- *Carda'mines*. 3. July. 1823. Herbaceous perennial.
- *inci'sa*. ½. Pale red. July. 1819. Annual.
- *Phyte'u'ma*. 1½. Pink. February. 1822. Perennial tuber.
- *volu'bilis*. 1. Pale blue. 1795. Annual.

Cyphoke'ntia. (From *kypchos*, a tumour, and *Kentia*; a *Kentia*-like Palm

having a lateral protuberance on the fruit. Nat. ord., *Palmaceæ*.)

Stove palm. For cultivation, see ARECA, *C. robu'ra*. New Caledonia. 1878.

Cyphoma'ndra. (From *kyphoma*, a hump, and *aner*, a man; the anthers form a hump. Nat. ord., *Solanaceæ*.)

Stove shrub. Seeds; cuttings in bottom-heat and under a hand-glass. Loam and leaf-mould.

- C. arge'ntea*. Leaves silvery. Brazil. 1880.
- *beta'cea*. 14. Purple to green. S. Brazil. 1836. Syn., *Solanum fragrans*. B. M. t. 3684. Tree tomato.

Cyphospe'rma. (From *kyphos*, a hump, and *sperma*, a seed; referring to the shape of the seed. Nat. ord., *Palma-cææ*.)

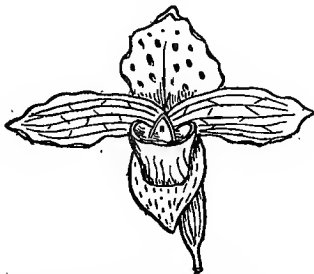
Stove palms. For cultivation, see ARECA.

- C. Viella'rdui*. New Caledonia. Syns., *Kentia robusta* and *K. Viellardii*.

Cypress. See *Cupressus*.

Cypripé'dium. Ladies' Slipper. (From *Kypris*, Venus, and *podion*, a slipper; from a fancied resemblance of the lip to a slipper, as in the annexed figure. Nat. ord., *Orchidææ*; Tribe, *Cypripediææ*.) See also *Selenipedium*.

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. Some of the species have tessellated leaves.



- C. acan'te*. Rose, purple. May. N. America. 1736. Hardy. Syn., *C. humile*.
- *Ainswo'rthii*. Garden hybrid.
- *al'bo-purpu'reum*. Garden hybrid.
- *al'bum*. 1½. White. May. N. America. 1800. Hardy. A garden hybrid received the same name in 1887.
- *Alci'des*. Hybrid between *C. insigne* and *C. hirsutissimum*. 189
- *Alfre'di*. Hybrid between *C. venustum* and *C. laevigatum*. 1890.
- *ama'ndum*. Garden hybrid. 1887.
- *Amesia'num*. Garden hybrid. Warn. Orch. Alb. t. 340.
- *Anti'gone*. Garden hybrid between *C. Lawrencianum* and *C. niveum*. 1890.
- *Aphrodi'te*. Garden hybrid between *C. niveum* and *C. Lawrenceanum*.
- *apicula'tum*. Reddish-brown, purple, ochre, yellow. Hybrid between *C. barbatum* and *C. Boxallii*.

- C. A'rgus*. 1. White, rose, green, blackish-purple, and purple-brown. May. Philippines. 1872. B. M. t. 6175.
- *Moensii*. Philippines. 1888. *C. Moensianum*. Lind. t. 129.
- *arietii* num. $\frac{1}{2}$. Green, rose. April. Canada. 1808. Fl. Ser. t. 2095.
- *Arnoldii* num. Hybrid between *C. Veitchii* and *C. concolor*.
- *Arthuria* num. Garden hybrid.
- *pa'lidum*. Garden hybrid. Lind. t. 121.
- *Ashburto'nicæ*. Garden hybrid. Ill. Hort. 1888, t. 61.
- *expa'nsum*. This has an ivory crescent on the upper sepal. 1884.
- *ma'jus*. Garden hybrid between *C. barbatum*, var. *Crossii*, and *C. insigne*.
- *superbum*. Garden hybrid between *C. barbatum*, var. *superbum*, and *C. insigne*.
- *A'tys*. Garden hybrid. 1888.
- *Ayl'ngii*. Garden hybrid between *C. niveum* and *C. ciliolare*. Journ. Hort. 1890, xx. p. 480.
- *barba'to-veitchia* num. Garden hybrid between *C. barbatum* and *C. superbiens*. Lind. t. 228.
- *barba'tum*. $\frac{1}{2}$. Purple, white, red. April. Malacca. 1838. B. M. t. 4234.
- *Bar'tei*. Green flushed with rose, dark purple, white, yellow. Hybrid between *C. barbatum* and *C. Chantini*. 1886.
- *bello'tulum*. A large flowered form of *C. Godefroyæ*. Lind. t. 149.
- *egre'gium*. Spotted light purple. 1888.
- *Berggenia* num. Garden hybrid. G. C. 1888, iii. p. 798.
- *Boxa'llii*. Green, white, yellowish, brown. India. 1877.
- *Buchania* num. Hybrid between *C. Druryi* and *C. Spicerianum*.
- *Bullenia* num.
- *anophta'mum*. No eye spot on petals, nor brown on lip. 1884.
- *ocula'tum*. Mauve, sepia-brown. Borneo. 1881.
- *Burbi'dgei*. Light green. Borneo. 1881.
- *Burfordiæ* nse. Garden hybrid. G. C. 1888, iv. p. 724.
- *cala'nthum*. Pale green, sepia. 1880.
- *Calce'olus*. 1. Yellowish-green. June. England. Hardy.
- *helve'ticum*. 1. Yellow. June. Switzerland. 1825.
- *caliga're*. Garden hybrid. G. C. 1888, iii. p. 264.
- *callo'sum*. White, flushed purple, nerved green. Siam. 1886.
- *subla've*. Petals notspotted. G. C. 1888, iii. p. 331.
- *calophyllum*. Garden hybrid, said to be the oldest in this genus. Very similar to *C. barbatum*.
- *calu'rum*. See *Selenipedium calurum*.
- *ca'ndidum*. 1. White. June. N. America. 1826. B. M. t. 5855. Hardy.
- *Canha'mi*. Garden hybrid. Wien. Gart. Zeit. 1888, p. 32.
- *Cannartia* num. A variety of *C. Philip-pinense*. Syn., *C. Roebellini*, var. *Cannartianum*.
- *cardina'le*. Garden hybrid. G. C. 1882, xviii. p. 488.
- *carici* num. Green, brown, purple. Peru. 1864.
- *Cassi'ope*. Hybrid between *C. venustum* and *C. Hookeræ*.
- *Castlea'num*. Hybrid between *C. hirsutissimum* and *C. superbiens*. 1890.
- *cauda'tum*. See *Selenipedium caudatum*.
- *chelsee* nse. Garden hybrid. G. C. 1888, iv. p. 406.
- *chloroneu'ron*. Garden hybrid. G. C. 1880, xiv. p. 525.
- C. chlo'rops*. Garden hybrid. G. C. 1888, iii. p. 584. Syn., *Selenipedium chlorops*.
- *citiola're*. G. C. 1882, xviii. p. 488. Ill. Hort. 1884, t. 530.
- *Miteau'num*. Rich purple. Philippines. Lind. t. 146. Syn. *C. Miteauanum*.
- *claptoniæ* nse. Hybrid between *C. Harrisianum* and *C. villosum*. G. C. 1889, v. p. 168.
- *conchiferum*. Green, purple. Hybrid between *C. Pearcei* and *C. Roetzii*. 1881.
- *conci'num*. Garden hybrid.
- *co'ncolor*. Primrose. Moulmein. 1865.
- *chlorophyllum*. Spotted. 1886.
- *Regnie'ri*. Yellow, blotched purple, edged white. Cambodia. 1886.
- *stiphuri'num*. Light sulphur, with two dark yellow blotches. 1888.
- *tonkine* nse. Tonkin. 1887. Lind. t. 77.
- *consp'uum*. Garden hybrid.
- *pi'ctum*. Garden hybrid. G. C. 1888, iii. p. 521.
- *Crossia* num. White, green, reddish-purple. Garden hybrid. Syn. *C. Crossii*.
- *psittaci'num*. Hybrid between *C. insigne* var. *Maulei*, and *C. venustum* var. *spectabile*.
- *Tantzia'num*. G. C. 1889, v. p. 43.
- *Curti'sii*. Sumatra. 1883. Warn. Orch. Alb. t. 122.
- *Cythere'a*. Hybrid between *C. Spicerianum* and *C. purpuratum*. G. C. 1890, vii. p. 73.
- *Danther'i*. Rev. Hort. 1885, p. 157.
- *Rossia* num. Garden hybrid. G. C. 1888, iii. p. 425.
- *Daya'num*. White, green, purplish. Borneo. 1860. Syns., *C. spectabile*, var. *Dayanum*, and *C. superbiens*, var. *Dayanum*.
- *Debotisia* num. Hybrid between *C. venustum* and *C. Boxalli*, var. *atratum*. G. C. 1890, viii. p. 747.
- *delica'tulum*. Garden hybrid. G. C. 1887, ii. p. 552.
- *dile'ctum*. Light green, blackish-purple; lip yellowish-green. 1888.
- *discoler*. Brown-purple, light red. Garden hybrid. G. C. 1882, xvii. p. 218.
- *dolia're*. Garden hybrid. G. C. 1887, i. p. 447.
- *Dominga'num*. Garden hybrid. Flor. Mag. t. 499.
- *Do'ris*. Hybrid between *C. venustum* and *C. Stonei*. G. C. 1890, viii. p. 716.
- *Dru'ryi*. $\frac{1}{2}$. Green, yellow, purple-brown. India. 1877. Ill. Hort. n. s. t. 265.
- *Ele'ctra*. Green. Hybrid. G. C. 1888, iii. p. 297.
- *Elliochia* num. $1\frac{1}{2}$. White, purple-brown, rosy, chocolate-spotted. Philippines. G. C. 1888, iv. p. 556.
- *Eurya'le*. Hybrid between *C. Lawrenceanum* and *C. superbiens*.
- *eurya'ndrum*. Garden hybrid.
- *Eyermanianum*. Hybrid between *C. barbatum* and *C. Spicerianum*. G. C. 1890, viii. p. 746.
- *Fairied'num*. 1. Green, purple stripes. October. E. Indies. B. M. t. 5024. Orch. 1891, p. 336.
- *fasciula'tum*. 1. Greenish, purple-brown. N.W. America. 1888.
- *Figa'ro*. Hybrid between *C. Spicerianum* and *ananthum*, var. *superbum*. G. C. 1889, vi. p. 750.
- *Filchia'num*. Garden hybrid. Warn. Orch. Alb. t. 350.
- *Fras'e'ri*. Garden hybrid between *C. hirsutissimum* and *C. barbatum?* Lind. t. 203.
- *Galate'a*. Garden hybrid. G. C. 1888, iii. p. 168.

- C. gemmiferum*. Garden hybrid. G. C. 1881, xv. p. 814.
- *Germiŋya num.* Green, purple, yellow. Hybrid between *C. hirsutissimum* and *C. villosum*. Journ. Hort. ser. 3, xxi. p. 89.
- *Godefroycæ*. White with chocolate spots. 1884. Fl. and Pom. 1884, p. 87.
- *Lai'ngi*. A small-flowered variety. Orch. 1890, p. 129.
- *Mari'æ*. Flowers very large.
- *Godeŋŋia num.* Garden hybrid. G. C. 1888, iii. p. 296.
- *gra'nde*. Hybrid between *C. Roezlii* and *C. caudatum*. G. C. 1881, xv. p. 462.
- *gutta tum.* 1. Yellow. April. Siberia. 1829.
- *Harrisianum*. Purple, white, claret-coloured, green. Hybrid between *C. barbatum* and *C. villosum*. 1871.
- *polychro'num*. Garden hybrid. Lind. t. 166.
- *superbum*. Garden hybrid. Lind. t. 118.
- *Haynaldia num.* Greenish, brown, rosy. Winter. Philippines. 1877.
- *hepha'ustus*. Garden hybrid. G. C. 1888, iii. p. 425.
- *He'ra*. Hybrid between *C. Spicerianum* and *C. villosum*. G. C. 1890, vii. p. 105. Syn., *C. Lathamianum*, var. *inversum*.
- *Hinksia num.* See *Selenipedium Hinksianum*.
- *hirsutissimum*. 1. Green, purple. April. Java.
- *Hookeræ*. Purple, green. Borneo. 1868.
- *volantea num.* Borneo. G. C. 1890, viii. p. 66.
- *Houttea num.* See *C. Vanhoutteanum*.
- *hu'nilæ*. See *C. aculea*.
- *ins'igne*. 1. Green, red, orange. June. Nepal. 1819.
- *al'bo-marginatum*. Yellowish-green, edged white. India. Warn. Orch. Alb. t. 232.
- *Hallea num.* Petals dotted with chocolate-brown. G. C. 1889, v. p. 168. Greenhouse.
- *Horsmania num.* Garden variety. G. C. 1888, iv. p. 693.
- *longispalum*. A pale-coloured variety. G. C. 1890, viii. p. 702.
- *Maefaria'nei*. Bright yellow, white. G. C. 1890, vii. p. 655.
- *Mau'lei*. G. C. 1882, xviii. p. 716.
- *Moorea num.* Garden variety.
- *punctatum violaceum*. G. C. 1882, xviii. p. 717.
- *Sanderæ*. Citron-yellow, white and brown dotted, 1888.
- *Pa*. Purple, nerved with green. Hybrid between *C. Argus* and *C. Laurencianum*. G. C. 1886, xxv. p. 488.
- *Irapea num.* 1. Yellow. June. Mexico. 1844.
- *japanicum*. 1. Greenish, white, rose. Japan. 1874.
- *Klotschia num.* B. M. t. 1718. See *Selenipedium Klotschianum*.
- *laevigatum*. Yellow, purple. Philippines. 1865.
- *Lafordca' dei*. Garden hybrid. Rev. Hort. 1885, p. 107.
- *Lathamia num.* Garden hybrid. Lind. iii. p. 74.
- *inversum*. The same as *C. Hera*.
- *Laurencia num.* White, purple, green, brown. Borneo. 1878.
- *coloratum*. Tinted pale mauve. G. C. 1887, ii. p. 272.
- *Hya num.* White, nerved green, lip green. Borneo. 1886. Lind. t. 42.
- *pleioleucum*. Garden variety. G. C. 1888, iii. p. 744.
- *stenose'mium*. G. C. 1887, ii. p. 38.
- C. Leea num.* White, green, mauve, dark brown, yellowish. Hybrid between *C. Spicerianum* and *C. insigne*, var. *Maulei*. Warn. Orch. Alb. t. 223.
- *biflorum*. Garden hybrid. G. C. 1890, vii. p. 161.
- *giganteum*. Large flowered garden variety, 1890.
- *maculatum*. Garden hybrid. G. and F. 1888, i. p. 4.
- *superbum*. G. C. 1886, xxv. p. 168.
- *Lemonieria num.* Garden hybrid. G. C. 1888, iii. p. 712.
- *leucorrhodum*. Pure white, purple. G. C. 1885, xxiii. p. 270.
- *Lindleya num.* See *Selenipedium Lindleyanum*.
- *lineolare*. Garden hybrid. G. C. 1887, i. p. 447.
- *longifolium* and its var. *gracile*. See *Selenipedium longifolium*.
- *Lo'wi*. 1. Pale green, purple, light brown. Borneo. 1847. Rev. Hort. t. 404.
- *lu'cidum*. Garden hybrid.
- *macranthum*. 1. Purple. May. Siberia. 1828. Hardy.
- *macropterum*. Light green, ochre, mauve, spotted black purple. Hybrid between *C. Louei* and *C. superbum*. G. C. 1882, xviii. p. 552.
- *margaritaceum*. Deep purple, spotted black-purple. Yunnan, China. Orch. 1888, p. 363.
- *marmorophyllum*. Garden hybrid.
- *Mastersia num.* Green, white, coppery, brown. Sondaic Isles. 1879.
- *Mayeria'rdii*. Hybrid between *C. purpuratum* and *C. Spicerianum*. G. C. 1880, viii. p. 702.
- *Measuresia num.* Garden hybrid. Warn. Orch. Alb. t. 304.
- *mei'rae*. White, green, mauve, purple. Garden hybrid. G. C. 1880, xiv. p. 524.
- *melanophthalmum*. White, green, purple, reddish. Garden hybrid. G. C. 1880, xiv. p. 525.
- *microchilium*. Purple-brown, white, yellow. Hybrid between *C. niveum* and *C. Druryi*. G. C. 1882, xvii. p. 77.
- *Mine'ra*. Garden hybrid between *C. venustum* and *C. Harrisianum*. G. C. 1889, vi. p. 464.
- *Miteaua num.* See *C. ciliolare*, var. *Miteauanum*.
- *Moensia num.* Lind. t. 129. See *C. Argus*, var. *Moensianum*.
- *monta num.* Oregon. Fl. and Pom. 1883, p. 10.
- *Morga'niæ*. Pink, yellow; lip brownish-pink. Hybrid between *C. Feitchii* and *C. Stonei*. Garden, Jan. 20, 1883.
- *burfordiæ'nae*. Echb. ser. 2, i. t. 1.
- *ni'gritum*. Similar to *C. barbatum*, but darker. Borneo. G. C. 1882, xvii. p. 102.
- *Nid'be*. Hybrid between *C. Fairrea num* and *C. Spicerianum*. G. C. 1889, vi. p. 701.
- *ni'tens*. Garden hybrid.
- *nitidissimum*. Garden hybrid. Syn., *Selenipedium nitidissimum*.
- *niveum*. † White, dotted with red. Malay Archipelago. 1869. One of the most beautiful of this genus. B. M. t. 5922.
- *northumbrianum*. Hybrid between *C. calophyllum* and *C. insigne*, var. *Maulii*. G. C. 1890, vii. p. 160.
- *Nu'ma*. Hybrid between *C. Laurencianum* and *C. Stonei*. G. C. 1890, vii. p. 608.
- *obscurum*. Garden hybrid. G. C. 1887, i. p. 8.
- *occidentale*. California. Gf. t. 1036.
- *Oeno'ne*. Garden hybrid between *C. Hookeræ* and *C. superbiens*. G. C. 1890, vii. p. 260.
- *œnanthum*. Garden hybrid.

- C. orbium*. Garden hybrid. G. C. 1887, ii. p. 778.
 — *Orestes*. Garden hybrid. 1889.
 — *orpha'num*. White, purple mid-line; lip purple-brown, yellow. Garden hybrid. G. C. 1888, xxvi. p. 166.
 — *Pagea'num*. Garden hybrid. G. C. 1888, iv. p. 264.
 — *pard'num*. White, green, yellow, coppery. India? 1869. Fl. Mag. n. s. t. 51.
 — *Parishii*. 2. Buff, green, dark purple. July. Burmah. 1869. B. M. t. 5791.
 — *parviflorum*. 1. Yellowish. June. N. America. 1759. Hardy. Gf. t. 700.
 — *patens*. Garden hybrid.
 — *pavoni'num*. Garden hybrid. G. C. 1888, iii. p. 264.
 — *Pete'ri*. White, brown, green. Malay Archipelago. 1880. G. C. 1887, i. p. 677.
 — *Petersia'num*. Garden hybrid. G. C. 1888, iii. p. 331.
 — *Pitcheria'num*. 1. White, green, purple-brown, light purple. Philippines. G. C. 1889, v. p. 73.
 — *pleistochlorum*. Garden hybrid. G. C. 1887, ii. p. 552.
 — *plume'rum*. Garden hybrid. G. C. 1887, i. p. 40.
 — *pobitum*. White, reddish, copper. Garden hybrid. Warn. Orch. Alb. t. 36.
 — *Polletia'num*. Hybrid between *C. calophyllum* and *C. venustum*, var. *superbum*. G. C. 1890, viii. p. 702.
 — *polystigma'ticum*. Garden hybrid. G. C. 1888, iv. p. 407.
 — *porphy'rum*. Garden hybrid.
 — *porphyrochla'mys*. Reddish-purple, pale yellow, mauve. Garden hybrid between *C. barbatum*, var. *biflorum*, and *C. hirsutissimum*. 1884.
 — *porphyrospilum*. Garden hybrid.
 — *praestans*. Yellowish, reddish-brown. New Guinea. Ill. Hort. xxxiv. t. 26.
 — — *Kimballia'num*. More richly coloured variety. Lind. t. 249.
 — *pubescens*. 1. Yellow, purple. June. N. Amer. 1790. Hardy. Orch. 1887, p. 175.
 — *purpuratum*. Purple. Sumatra. 1836. Rev. Hort. 1858, f. 50.
 — — *obscurum*. Green, purple. 1860.
 — *pycnopterum*. Garden hybrid.
 — *Radi'ssum*. White, nerved with mauve, green, brown. Hybrid between *C. Lawrenceianum* and *C. Spicerianum*. G. C. 1885, xxiv. p. 424.
 — *regale*. Garden hybrid.
 — *Reichenbachii*. See *Selenipedium longifolium*.
 — *reticulatum*. Light green. S. America? 1882.
 — *robustius*. Garden hybrid between *C. Sedeni* and *Selenipedium longifolium*. G. C. 1889, v. p. 394.
 — *Roebelenii*. Philippine Islands. G. C. 1884, xxi. p. 16.
 — *Rothschildiana'num*. 2. Yellowish, dark brown, white. New Guinea. 1888. B. M. t. 7102.
 — *Sandaria'num*. Yellowish-green, nerved purple-brown; lip greenish-bronze. Malay Archipelago. 1886. Rchb. t. 3.
 — *Saundersia'num*. Garden hybrid. G. C. 1886, xxvi. p. 654.
 — *Savagea'num*. Garden hybrid. G. C. 1888, iv. p. 407.
 — *Schlimii*. B. M. t. 5614. See *Selenipedium Schlimii*.
 — *Schomburgkiana'num*. British Guiana. G. C. 1890, vii. p. 336.
 — *Schrade'ae*. Ochre, purple, white, yellow. Hybrid between *C. caudatum* and *C. Sedeni*. G. C. 1883, xix. p. 432.
 — — *spilodens*. Garden hybrid. Lind. t. 69.
 — *Sede'ni*. See *Selenipedium Sedeni*.
 — — *albansense*. Garden hybrid with *C. Schlimii*.
- C. Sede'ni candidulum*. White, rose; lip pale rose, dotted crimson. Garden hybrid. G. C. 1884, xxii. p. 439.
 — *selligerum*. White, crimson. Garden hybrid.
 — — *ma'juse*. Flowers larger. Lind. t. 22.
 — *siamense*. Green, purple. Siam. G. C. 1890, vii. p. 161.
 — *spectabile*. 14. White, purple. June. N. America. 1731. Hardy.
 — — *album*. White. June. N. America. 1827. Hardy.
 — — *incarnatum*. White, purple. June. N. America. Hardy.
 — *Spiceria'num*. 3. White, claret, greenish-yellow, violet-purple. E. Indies. 1879. Garden, March 3, 1883.
 — *strophylum*. Garden hybrid.
 — *Sto'nei*. Cream, purple. Borneo. 1852. Lind. t. 281.
 — — *platyctenium*. White, brown, purple. Borneo. 1880.
 — *superbiens*. White, green, purplish-brown. Autumn. 1865. Lind. t. 261. Syn., *C. Veitchianum*, Ill. Hort. t. 429.
 — *superciliosum*. Garden hybrid.
 — *Swania'num*. Garden hybrid.
 — *Tautzia'num*. Garden hybrid. G. C. 1886, xxvi. p. 681.
 — — *lepidum*. Garden hybrid. G. C. 1888, iv. p. 756.
 — *tessellatum*. Garden hybrid.
 — — *porphyreum*. Deep purplish brown. G. C. 1883, xx. p. 492.
 — *Thibautia'num*. Green, brown; lip yellowish, brown. Hybrid between *C. Harrisianum* and *C. insigne*, var. *Maulei*. G. C. 1886, xxv. p. 104.
 — *tonsum*. White, green, sepia. Sondaic Isles, G. C. 1883, xx. p. 262.
 — *Vanhouttea'num*. Garden hybrid. Lind. t. 180. Syn., *C. Houtteanum*.
 — *va'rio-pictum*. Garden hybrid. G. C. 1888, iv. p. 407.
 — *Veitchia'num*. Ill. Hort. t. 429. See *C. superbiens*.
 — *ventricosum*. 1. Dark purple. April. Siberia. 1829. Hardy.
 — *venustospiceria'num*. Garden hybrid. G. C. 1889, v. p. 394.
 — *venustum*. 3. Green, red. October. Nepal. 1816.
 — *vernium*. Garden hybrid.
 — *Vervetia'num*. Garden hybrid. G. C. 1888, iii. p. 712.
 — *vezillatum*. Garden hybrid.
 — *villosum*. Orange, red, green, dark purple. G. C. 1890, viii. p. 688.
 — *Vipa'ni*. Hybrid between *C. philippinense* and *C. niveum*. G. C. 1890, vii. p. 792.
 — *vittatum*.
 — — *bre've*. Mauve, brown. Brazil. 1881.
 — *Williamsia'num*. White, with black or green nerves; lip yellowish. Hybrid. G. C. 1882, xvii. p. 213.
 — *Winnia'num*. Pale yellow, purple-brown, reddish. Hybrid between *C. Druryi* and *C. villosum*. G. C. 1886, xxv. p. 302.
 — *Youngia'num*. Hybrid between *C. superbiens* and *C. Roebelenii*.
- Cyri'lla.** (After *D. Cyrillo*, an Italian botanist. Nat. ord., *Cyrtillaceae*. Allied to Heathworts.)
 Greenhouse evergreen shrubs. Sandy loam and peat; cuttings in sand under glass, with slight bottom-heat.
C. antilla'rum. 6. White. July. Antilles. 1824.
 — *caroliniana*. 6. White. July. Carolina. 1765.
 — *coccinea*. See *Achimenes coccinea*.

C. pulche'lla. B. M. t. 374 is also a species of *Achimenes*.
— *racemifl'ra*. 4-6. Whitish. July. Carolina. 1765. B. M. 2456.

Cyrta'ndra. (From *kyrtos*, curved, and *aner*, male; in allusion to the curved stamens. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandree*.)

Stove trees or shrubs. Half-ripened cuttings in heat under a hand-glass. Soil, rough peat, leaf-soil, and pieces of charcoal.

— *pe'ndula*. Java. 1833.
— *Pritchardii*. White. Fiji. 1887.

Cyrta'nthera. (From *kyrtos*, curved, and *anthera*, an anther. Nat. ord., *Acanthaceæ*.)

Soft-wooded stove plants. For cultivation, see JUSTICIA.

— *auranti'aca*. Orange. S. America. B. M. t. 4468.
— *catapoc'o'lia*. 6. Yellow. June. Honduras. 1848. B. M. t. 4444.
— *chryso'ste'phana*. Yellow. Winter. Mexico. 1870.
— *Ghiesbreghtia'na*. Scarlet. Mexico. 1838. Syn., *Justicia Ghiesbreghtiana*. Fl. Ser. t. 339.
— *Libonia'na*. Pink. Leaves violet beneath. S. Brazil. 1847. Lem. Jard. Fl. t. 311.

Cyrta'nthus. (From *kyrtos*, curved, and *anthos*, a flower; the flowers bend down from the summit of the scape, or stalk. Nat. ord., *Amaryllidææ*. Allied to *Vallota*.)

Greenhouse bulbs, from South Africa. *C. obli'gatus* 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'lus*. 1. Bright red. Autumn. Cape Colony. 1774. B. M. t. 271.
— — *grandiflo'rus*. Flowers larger.
— — *stria'tus*. 1. Bright red, with yellow ribs. Syn., *C. striatus*. B. M. t. 2534.
— — *ventric'o'sus*. Perianth tube swollen in the middle. 1770. Syn., *C. angustifo'lus* of Jacq. H. Schenb. t. 76.
— *brachyscy'phus*. 1. Pale red. July. Pondo-land. 1836.
— *breviflo'rus* is a synonym of *Anoiganthus brevis-florus*.
— *ca'rneus*. 1. Bright red. August. Cape Colony. B. R. t. 1462.
— *coll'ius*. 1. Bright red. August. Cape Colony 1816. B. R. t. 162. Syn., *Monella glauca*.
— *heli'ctus*. Cape Colony. 1839. Syn., *Cypho-nema heli'ctus*.
— *Huto'ni*. 1. Pale red. May. Cape Colony. 1864.
— *hy'bridus*. A hybrid between *Vallota* and *Cyrtanthus sanguineus*. 1885.
— *lute'scens*. 1. Yellow. Cape Colony. 1863. Syn., *Monella ochroleuca*. *Anoiganthus brevisflorus* is occasionally to be found in gardens under the erroneous name of *Cyrtanthus lutescens*.
— — *Coope'ri*. Flowers more numerous. Syn., *C. lutescens* of B. M. t. 5374.
— *Mack'e'ni*. 1. White. Winter and Spring. Natal. 1868. Ref. Bot. t. 355.

— *Mac'o'wani*. Scarlet. Cape Colony. 1875. Gf. t. 960.
— *obli'quis*. 2. Bright red, yellowish. August. Cape Colony. B. R. t. 1133.
— *o'dorus*. 2. Crimson. July. Cape Colony. 1818. B. R. t. 503. Syn., *Monella odora*.
— *pa'lidus*. 1. Pink. June. 1822. E. M. t. 2471.
— *sangui'neus*. Orange-red. August. Caffraria and Natal. 1861. B. M. t. 5218. Syn., *Gastronema sanguineum*.
— *Smithi'us*. White, striped with green or reddish-brown. May. Cape Caffraria. 1876.
— *spira'lis*. 1. Scarlet. November. Cape Colony. 1790. B. R. t. 167. Syn., *Monella spiralis*.
— *stria'tus*. E. M. t. 2534. A variety of *C. angustifolius*.
— *Tri'ckii*. 1. Blood-red, yellow. July. Cape Colony. 1884.
— *uniflo'rus*. 2. White, striped with green or reddish-brown. Winter. Cape Colony and Caffraria. Syn., *Amaryllis clavata*.
— *ventric'o'sus*. A variety of *C. angustifolius*.
— *vitta'tus*. White, with reddish-brown stripes. Cape Colony. Red. Lil. t. 182.

Cyrto'ceras refle'xum. See *Hoya coriacea*.

Cyrtochi'lum. (From *kyrtos*, curved or concave, and *cheilos*, a lip; the form of the labellum, or lip. Nat. ord., *Orchidææ*. Allied to *Acanthophippium*.)

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.

— *Bictoni'ense*. 2. Red. October. Guatemala. 1836.
— *citri'num*. 1. Yellow. April. Central America. B. M. t. 4454.
— *fl'ipes*. 1. Red, yellow. March. Guatemala. 1838. B. R. 1841, t. 59.
— *flav'scens*. 1. Yellowish. June. Mexico. 1830. B. R. t. 1627.
— *gramini'folium*. See *Oncidium graminifolium*.
— *leucoc'hi'tum*. Green, spotted brown. Central America. Syn., *Oncidium leucoc'hi'tum*. Fl. Ser. t. 522.
— *macula'tum*. 1. Green, purple. Vera Cruz. 1837. Lindl. Sert. t. 25.
— *cornu'tum*. 1. Yellow, purple. March. Mexico. B. M. t. 3836.
— *parviflo'rum*. 1. White, yellow, purple. February. Guatemala. 1829.
— *Russellia'num*. Spotted. March. Guatemala.
— *mystaci'num*. 1. Yellowish. October. Peru. 1836. B. R. 1839, t. 62.
— *stella'tum*. Lindl. Sert. t. 7. See *Mittonia flavescens*, var. *stellatum*.

Cyrtodei'ra. See *Episcia*.

Cyrtogo'nium. (From *kyrtos*, curved, and *gonu*, a knee; referring to the creeping stems, or rhizomes. Nat. ord., *Filices*. Allied to *Platyterium*.)

Stove Ferns, with brown spores. Divisions; peat and loam.

— *costa'tum*. July. Java.
— *crispa'tulum*. May. E. Ind.
— *diversiflo'rium*. May. E. Ind.
— *flagelli'ferum*. E. Ind. 1825.
— *lacinia'tum*. May. Isle of Leyte.
— *punctula'tum*. May. Java.
— *repa'ndum*. May. E. Ind.
— *scandens*. May. E. Ind.
— *serratiflo'rium*. May. E. Ind.

- C. sinu'sum*. May. Isle of Luzon.
 — *suberenatum*. May. E. Ind.
 — *virrens*. May. Java.

Cyrto'mium. (From *kyrtos*, curved; the shape of the spore-cases, or seed-vessels. Nat. ord., *Filices*.)

Stove Ferns. Culture as for CYRTOGONIUM.

- C. anomophyllum*. Japan. 1862.
 — *caryoti'deum*. India and China. 1861. Nearly or quite hardy.
 — *attenuatum*. India.
 — *falcatum*. See *Asplenium falcatum*.

Cyrto'pera. (From *kyrtos*, curved, and *pera*, a small sack; alluding to the sack-like appendage to the labellum, or lip. Nat. ord., *Orchideæ*. Allied to *Galeandra*.)

Stove orchids. Root division; peat, rotten wood, and potsherds.

- C. flav'a*. See *Cyrtopodium flavum*.
 — *flavescens*. Pale yellow. June. Mexico. 1830.
 — *plantaginea*. Madagascar. Syn., *Limodorum plantagineum*.
 — *plicata*. India. 1840.
 — *Regnierii*. Yellow. Cochin China.
 — *sanguinea*. B. M. t. 6161. See *Eulophia sanguinea*.
 — *Woodfordii*. Pink. September. S. Amer. 1819. Syn., *Cyrtopodium Woodfordii*, B. M. t. 1814, and t. 1508.

Cyrtophleb'ium. (From *kyrtos*, curved, and *phleps*, a vein; referring to the disposition of the veins in the leaves. Nat. ord., *Filices*.)

Stove Ferns. Culture as for CYRTOGONIUM.

- C. decurrens*. 4. Yellow. July. Brazil.
 — *nitidum*. Yellow. July. W. Ind.

Cyrtopod'ium. (From *kyrtos*, curved, and *pous*, a foot; referring to the form of the labellum, or lip. Nat. ord., *Orchideæ*.)

Stove orchids. Divisions; peat, sphagnum, and broken pots; plants raised above the pots, or suspended in shallow baskets.

- C. Andersonii*. 2. Yellow. April. St. Vincent. 1804. B. M. t. 1800. Syn., *Cymbidium Andersoni*, Andr. Rep. t. 651.
 — *cardiochilum*. Yellow, crimson. August.
 — *cristatum*. Guiana.
 — *flavum*. 2. Yellow. India. 1831. Syn. *Cyrtopera flava*.
 — *glutiniferum*. Yellow. S. Amer.
 — *punctatum*. 3. Yellow, red. April. Brazil. B. M. t. 3507.
 — *Saintlegerianum*. Paraguay.
 — *sanguineum*. 1. Reddish-brown, lip rosy, Sikkim. 1875.
 — *Wilmorei*. 4½. Yellowish-red. June. Venezuela.
 — *Woodfordii*. B. M. t. 1814. See *Cyrtopera Woodfordii*.

Cyrtospe'rma. (From *kyrtos*, curved, and *sperma*, seed. Nat. ord., *Aroideæ*.)

Stove perennial herbs. Treat as recommended for ALOCASIA.

- C. Johnstoni*. Leaves red-veined; stalks spiny. Solomon Isles. 1875. Syn., *Alocasia Johnstoni*.
 — *Malveifolia*. Borneo. Perhaps the same as *Lasia heterophylla*.

Cystaca'nthus. (From *kystos*, a bladder, and *Acanthus*; referring to the inflated flowers. Nat. ord., *Acanthaceæ*.)

Stove evergreen herb. Cuttings of young shoots in spring or summer, in sandy soil, in a hotbed, covered by a bell-glass. Light sandy loam and fibry peat.

- C. turgrida*. 1 to 1½. White and yellow, veined with pink. April. Cochin China. 1869. Syn., *Meninia turgrida*.

Cysto'pteris. (From *kystos*, a bladder, and *pteris*, a fern. Nat. ord., *Filices* — *Polyptodiaceæ*.)

Hardy ferns. For cultivation, see FERNS.

- C. alpi'na*. ½. Mountains of Europe. Eng. Bot. ed. 3, t. 1866.
 — *bulbifera*. 1. N. America. 1638.
 — *fragilis*. 1. Britain. Eng. Bot. ed. 3, t. 1864.
 — *angustata*, narrow var.
 — *dentata*, toothed var. ½.
 — *Dickieana*. 1½.
 — *decurrens*, decurrent var.
 — *interrupta*, interrupted var.
 — *obtus'a*, blunt var. 1.
 — *sempervirens*, evergreen var. Madeira.
 — *montana*. 1. Britain. Eng. Bot. ed. 3, t. 1863.
 — *regia*. ½. Britain.
 — *tenuis*. 1. N. America.

Cytisus. (From *Cythus*, one of the Cyclades, where one of the species was first found. Nat. ord., *Leguminosæ*; Tribe, *Genisteæ*.)

Shrubs and trees. Readily increased by seeds; choice kinds are grafted or budded upon the *Laburnum*; common garden-soil.

GREENHOUSE AND STOVE EVERGREENS.

- C. elegans*. 3. Yellow. Cape of Good Hope. 1821.
 — *flipes*. White. March. Teneriffe. 1838.
 — *glomeratus*. 3. Zanzibar. 1823. Stove.
 — *l'niger*. 2. Yellow. June. Spain. 1821. Half-hardy.
 — *rigidus*. 6. Yellow. June.
 — *nubigenus*. 6. Yellow. May. Teneriffe. 1779.
 — *proliferus*. 2. Yellow. April. Canaries. 1779. B. M. t. 1908.

HARDY DECIDUOUS, ETC

- C. Adami*. See *Laburnum Adami*.
 — *œolicus*. 7. Yellow. May. Stromboli. 1836. B. R. t. 1902.
 — *fl'ore-pleno*. White. May. England.
 — *foliis variegatis*. Yellow. May. Gardens.
 — *albidus*. 4. White. June. South Europe.
 — *albus*. 8. White. May. Portugal. 1752. Portugal *Laburnum*.
 — *incarnatus*. 8. Flesh. May. Portugal. 1752.
 — *lut'eus*. 8. Yellow. May. Gardens.
 — *multiflorus*. Garden variety. 1888.
 — *alpi'na*. 30. Yellow. June. Europe. 1596. Scotch *Laburnum*.
 — *Ardeni*. Yellow. Maritime Alps. 1867.
 — *argenteus*. 3. Yellow. August. France. 1739.
 — *austriacus*. 3. Yellow. July. Austria. 1741.
 — *biflorus*. 3. Yellow. May. Hungary. 1760. B. R. t. 308.
 — *calycinus*. 2. Yellow. August. Tauria. 1820. B. C. t. 673.
 — *canariensis*. 4. Yellow. Europe. 1774.
 — *capitata*. 3. Yellow. July. Austria. 1774. B. C. t. 497.
 — *ciliatus*. 3. Yellow. July. Carpathia. 1817.
 — *divaricatus*. 3. Yellow. August. S. W. Europe. B. R. t. 1387.

- C. elongatus*. 4. Yellow. May. Hungary. 1804. Andr. Rep. t. 632.
 — *falcatrus*. 3. Yellow. July. Hungary. 1816. B. C. t. 520.
 — *filifer*. Pale yellow. 1886.
 — *foliolosus*. Yellow. May. Canary Islands. 1779. B. M. t. 426.
 — *grandiflorus*. 4. Yellow. June. Portugal. 1816.
 — *hirsutus*. 5. Yellow. July. South Europe. 1739.
 — *Laburnum*. 15. Yellow. May. Switzerland. 1596. B. M. t. 176. Syn., *Laburnum vulgare*.
 — — *foliis variegatis*. 15. Yellow. May.
 — — *fragrans*. 15. Yellow. June. Gardens.
 — — *pendulus*. Yellow. May.
 — — *purpureus*. Purple. B. R. t. 1965.
 — — *quercifolius*. 15. Yellow. May.
 — — *uralensis*. May. Russia. 1832.
 — *leucanthus*. 4. Pale yellow. June. Hungary. 1806. B. M. t. 1438.
 — *molis*. 4. Yellow. June. 1818.
 — *multiflorus*. 4. Yellow. June. Europe. 1818. B. R. t. 1191.
 — *microphyllus*. 2. Yellow. May.
 — *nausus*. 1½. Yellow. May. Levant. 1816. Wats. Dendr. ii. t. 81.
 — *nigrans*. 3. Yellow. June. Austria. 1730. B. R. t. 802.
 — — *na'na*. Dwarf variety.
 — *orientalis*. 3. Yellow. June. S. Europe. 1818.
 — *patens*. 4. Yellow. June. Portugal. 1752.
 — *polytrichus*. 1½. Yellow. June. Tauria. 1818.
 — *purpureus*. 2. Purple. Austria. 1792. B. M. t. 1176.
 — — *albiflorus*. 2. White. June. Austria.
 — *pygmaeus*. 1. Yellow. June. Calceae.
 — *racemosus*. 3. Yellow. July. 1835. Evergreen.
 — *rhodophena*. 2. Yellow. May.
 — *ruthenicus*. 3. Yellow. June. Russia. 1817.
 — *scoparius*. 6. Yellow. June. England. Common Broom.
 — — *albus*. 6. White. June. England.
 — — *foliorepleta*. 6. Yellow. April. England.
 — — *foliis variegatis*. 6. Yellow. April. Gardens.
 — *sessiliflorus*. 6. Yellow. July. Italy. 1629. B. M. t. 255.
 — *spinosus*. 2. Yellow. June. S. Europe. 1596. Evergreen.
 — *supinus*. 1. Yellow. June. S. Europe. 1755. Trailer.
 — *tomentosus*. Yellow. August. S. Africa. 1798. Andr. Rep. t. 237.
 — *triflorus*. 4. Yellow. June. Spain. 1640.
 — *Weldemii*. B. R. 1843, t. 40. See *Petteria ramentacea*.
 — — *procerus*. Yellow. June. Portugal. 1816.
 — — *serotinus*. Yellow. July. Hungary. 1826.
 — — *serotinus*. Yellow, purple. May.

Insect.—Yellowish spots sometimes appear on the leaves of the common Laburnum, which are caused by the larvæ of the Laburnum leaf miner (*Centostoma laburnella*). This moth deposits its eggs on the under-surface of the leaves, and when the larvæ are hatched they bore into the tissue of the leaf, causing yellowish blisters to appear, from which they escape when full grown, and hang for a short time suspended from the leaf by a fine thread.

The caterpillars, which are about a quarter of an inch long, and of a greenish-white colour, with a dark line down the back, enter the chrysalis state in September, from which the moth escapes the following May. The moth is pure white, with two pale yellow spots on the anterior side of the fore-wing, and a triangular blackish-violet patch on its posterior edge. Both pairs of wings are beautifully fringed.

Cza'ckia. See **Paradisia.**

D

Daboec'cia. (From its Irish name, *St. Daboc's Heath*. Nat. ord., *Ericaceæ*.)

Dwarf, hardy evergreen shrubs. Peat. Shady spots.

- D. cantabrica calyculata*. Red, white. 1891.
 — *polifolia*. 2. Purple. July. Ireland. Syn., *Menziesia polifolia*. Eng. Bot. ed. 3, t. 885.
 — — *atro-purpurea*. 2. Dark purple.
 — — *floridula*. White. June. Ireland.
 — — *latifolia*. 2. Purple. July.
 — — *longifolia*. 2. Purple. July.
 — — *na'na*. ½. Purple. July. Ireland.
 — — *palida*. 2. Purple. July. Britain.
 — — *taxifolia*. Purple. June. Scotland.

Dacry'dium. (From *dakru*, a tear; referring to the resinous drops, glands, or exudations. Nat. ord., *Coniferæ*; Tribe, *Taxææ*. Allied to *Podocarpus* and *Yew*.)

D. taxoides 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.

- D. cupressinum*. 16. New Zealand. 1825.
 — *elatium*. 20. Pulo Penang. 1830.
 — *excelsum*. New Zealand.
 — *Fitzgeraldi*. Australia. 1881. Probably a species of *Podosphaera*.
 — *Franklandii*. 100. Tasmania. 1844. Huon Pine.
 — *Ma'i*. New Zealand. 1843.
 — *taxoides*. New Caledonia. 1843.

Dactyla'nthes. See **Euphorbia.**

Dactylica'pnos thalictrifolia. See **Dicentra scandens.**

Da'ctylis. (From *daktulis*, the breadth of a finger. Nat. ord., *Gramineæ*; Tribe, *Festuceæ*.)

A strong-growing hardy grass, well adapted for damp or marshy land.

- D. glomerata*. 2. Green. June. Britain and Central Europe. Eng. Bot. ed. 3, t. 1778. Cock's-foot Grass.

Dactylophyllum. See **Gilia.**

Daddy Long Legs. *Tripula oleacea*.

Dædalaca'nthus. (From *daidalæos*, embellished; on account of the beauty of these plants. Nat. ord., *Acanthaceæ*; Tribe, *Ruellieæ*.)

Handsome stove plants. Seeds; cuttings in spring under a bell-glass. Soil; leaf-mould, peat, and rich sandy loam.

- D. macrophyllus*. 2-3. Pale violet-blue. Winter. Burmah and Malay Peninsula. B. M. t. 6689.
- montanus. 2. Lilac, purple. March. Ceylon. 1843. Syn., *Eranthemum montanum*, B. M. t. 4031.
- nervosus. 2. Blue. Winter. E. Indies. 1795. Syns., *Eranthemum pulchellum*, Andr. Rep. t. 88, and *Justicia nervosa*, B. M. t. 1358.
- strictus. 2. Purple. April. Nepaul. 1818. Syn., *Eranthemum strictum*, B. M. t. 3068.

Dæmia. (Its Arabic name. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynancheæ*.)

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 fibry, with a little silver sand.

- D. bicolor*. See *Cynanchum bicolor*.
- cordata. 10. Arabia. 1824.
- extensa. 3. E. Indies. 1777. Syns., *D. ciliata*, *Cynanchum extensum* (Jacq. Ic. t. 54), and *Raphistemma ciliatum* (B. M. t. 5704).
- scandens. 10. Gambia. 1824.

Dæmono'rops. (From *dema*, a cord, and *rhops*, a twig; alluding to the rope-like, climbing stems. Nat. ord., *Palmaceæ*. Now united to *Calamus*.)

- D. melanocheates*. See *Calamus melanocheates*.
- ornatus. See *Calamus ornatus*.
- palmaticus. See *Calamus palmaticus*.
- periacanthus. See *Calamus periacanthus*.
- plumosus. India. 1870. See *Calamus plumosus*.

Dæffodil. *Narcissus pseudo-narcissus*.

Dahlia. (Named after *Dahl*, a Swedish botanist. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)

Half-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 kept in dry sandy soil.

- D. arborescens*. G. C. 1883, xix. p. 80. See *D. excelsa*.
- Barkervillei. 2. Blush. August. Mexico. 1888.
- Cervantesii. See *C. coccinea*.
- coccinea. Scarlet. October. Mexico. B. M. t. 762. Syns., *D. bidentifolia*, *D. Cervantesii*, *D. frustranea*, Maund Bot. ii. 88, and *Georgina Cervantesii*.
- crocata. See *C. variabilis*.
- excelsa. 30. Purple. Mexico. 1884. Gf. t. 361.
- anemonæformis. 30. Light. September. Mexico. 1830.
- frustranea (with its varieties *aurantia*, *crocea*, and *lutea*) is synonymous with *C. variabilis*.

- D. glabrata*. See *C. Merckii*.
- gracilis. 4. Orange-scarlet, yellow. October. Mexico. 1873.
- cuprea. Coppery-red.
- flore-pleno. Double-flowered. 1888.
- fulgens. Bright crimson-scarlet.
- ignea. Fiery orange.
- lutea. Pale chrome-yellow.
- superba. Crimson-scarlet. G. C. 1881, xvi. p. 524.
- imperialis. 10-12. White or rose, yellow. October. Mexico. 1863. B. M. t. 5813.
- Juarezii (or *Yarezii*). Crimson. Autumn. Mexico. 1872. The Cactus Dahlia.
- lutea. Yellow. 1879. Perhaps a form of *C. mexicana*.
- Maximiliana. 7. Mauve.
- Merckii. 2-4. White and yellow, or lilac and yellow. October. Mexico. 1839. Syn., *D. glabrata*, B. M. t. 2878.
- Decaisneana. 3. Purple, yellow. Mexico. 1864. Rev. Hort. 1864; p. 31.
- pinna. See *D. variabilis*.
- scapigera. 2. White. June. Mexico. 1837. Maund Bot. iy. t. 161. Syn., *Georgina scapigera*.
- stellatiana. 3. White, golden. 1881.
- superflua. See *D. variabilis*.
- variabilis. Colour variable, crimson, purple, etc. Mexico. Syns., *D. superflua*, *crocata*, and *pinna*.
- viridiflora. A form in which the bracts are increased at the expense of the flower. G. C. 1886, xxvi. p. 429.
- Yarezii. See *D. Juarezii*.

Dahlia as a Florist's Flower.—

The innumerable varieties in our gardens are the descendants of *D. coccinea*, *D. variabilis*, and probably *D. Merckii*.

Propagation by Cuttings.—The time for striking these extends from February to August. The young shoots that spring from the bulbs make the best cuttings, and are the most sure to grow; but the young tops taken off at a joint will strike root and form small bulbs even so late as August, and often are more sure to grow in the spring following, if kept in small pots, than roots that have been planted out late. This more particularly applies to new varieties. If the shoots on the old bulbs are numerous, or there appears many buds ready to start, the shoots that have grown three inches long may be slipped off with the finger close to the bulb; but if the shoots are few, or only one, they must be cut off so as to leave two buds at the base of the shoot to grow again. 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.

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 pods up in a dry place. When the scales of the pod 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.

Summer Culture.—Prepare the plants for planting out by constant and full exposure when the weather is mild. 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 safer 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, littersy 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. They should be stout, and six or seven feet long, at least. 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 Culture.—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 gentle 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; but 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.

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 water-tight 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., *Thymelacææ*; Tribe, *Euthymeleææ*. Allied to *Daphne*.)

Greenhouse evergreen. Seeds sown in slight holed, 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.
D. cotinifolia. 10. White, green. June. Cape of Good Hope. 1776. B. M. t. 147.

Daisy. (*Bellis perennis*.) 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 them to grow. To keep them double and fine, they require moving occasionally. Planted as an edging round the Ranunculus bed, their roots tempt the wireworm from those of the choicer flower.

Dalbe'rgia. (Named after *Dalberg*, a Swedish botanist. Nat. ord., *Leguminosææ*; Tribe, *Dalbergiææ*.)

The wood of *D. Sissoo* 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; fibry peat and turfy loam, with a portion of sand.

- D. arbo'rea*. See *D. lanceolaria*.
— *Barcla'ya*. 15. Blue. Mauritius. 1823.
— *dipha'ca*. See *Ormocarpum cochinchinensis*.
— *doming'e'nsis*. See *Lonchocarpus sericeus*, var *glabrescens*.
— *frondo'sa*. See *C. lanceolaria*.
— *lanceola'ria*. 30. India. 1818. Syns., *D. arborea* and *frondosa*.
— *latifo'lia*. 30. E. Indies. Black Wood.
— *margina'ta*. 20. Khasia. 1823.
— *Ougeine'nsis*. See *Ougeinia*.
— *panicula'ta*. 20. India. 1811.
— *rimo'sa*. 20. N. India. 1823.
— *rubigino'sa*. 10. India and S. China. 1811.
— *sca'ndens*. See *Derris scandens*.
— *Sissoo*. 30. India. 1820.
— *tamarindifo'lia*. 15. Indian Archipelago. 1820.
— *Telfair'ri*. 15. Mauritius. 1823.
— *volutib'lis*. 20. India. 1818.

Da'lea. (Dedicated to *Samuel Dale*, M.D., author of a book upon *Materia Medica*. Nat. ord., *Leguminosææ*; Tribe, *Galegeææ*.)

Greenhouse shrubby perennials, except *D. alopecuroides*. For cultivation, see PSORALEA. Although this is a large genus, containing at least a hundred species, many of which are exceedingly pretty, the following are the only ones at present in cultivation.

- D. alopecuroides*. 1-2. Bluish. Summer. N. America. Hardy annual.
— *bi'color*. See *D. mutabilis*.
— *Kuhniate'ra*. See *Petalostemon corymbosum*.
— *muta'b'lis*. Purple, white. October. Mexico, 1821. B. M. 2486. Syn., *D. bicolor*.
— *Muti'sii*. Purple. July. Mexico. 1823. Syn., *Psoralea Mutisii*.

Dalecha'mpia. (Named after *Dalechamp*, a French botanist. Nat. ord., *Euphorbiacææ*; Tribe, *Crotoneææ*. 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.

- D. brazillie'nsis*. 6. July. Brazil. 1824.
— *ricifo'lia*. 6. July. Brazil. 1820.
— *Roelzia'na*. Rose, yellow. Vera Cruz. 1867. B. M. t. 5640. Syn., *Cremophyllum*.
— *a'lba*. Bracts white. Mexico. 1875.
— *sca'ndens*. 12. June. W. Ind. 1739.

Daliba'rda. (Named after *Dalibard*, a French botanist. Nat. ord.,

Rosacea; Tribe, *Potentillææ*. Allied to *Potentilla*.)

An alpine, or rock-plant. Division; light, sandy soil; a sheltered, dry place.

D. fragarioïdes. B. M. t. 1567. See *Waldsteinia fragarioides*.

— *repens*. $\frac{1}{2}$. White. May. N. America. 1768. Syns., *D. cordata* and *D. violæoides*.

Dalmatian Cap. *Tulîpa*.

Damask Rose. *Ro'sa damasce'na*.

Damask Violet. *He'speris matrona'lis*.

Damaso'nium. (From *damein*, to conquer; but the application is obscure. Nat. ord., *Hydrocharideæ*.)

For cultivation, see ALISMA.

D. stella'tum. 1-2. White, with yellow spot. Summer. Britain. Syn., *Alisma Damasovium*.

Dame's Rocket, or Violet. *He'speris matrona'lis*.

Da'mmara. (The Dammar Pine of Amboyna. The Kaurie of the natives of New Zealand. Nat. ord., *Coniferæ*; Tribe, *Araucariææ*. United to *Agathis* in the Genera *Plantarum*.)

Handsome greenhouse conifers. The finest masts are prepared from the *D. australis*; 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.

D. australis. 200. New Zealand. 1821. Kauri Pine. Pin. Wob. t. 59.

— *obtus.* 150. New Hebrides. 1851. B. M. t. 5359.

— *orienta'lis*. 50. Amboyna. 1804. Dammar Pine.

Damnaca'nthus. (From *damnao*, to conquer, and *acanthos*, a spine; in reference to the strong opposite spines. Nat. ord., *Rubiaceæ*; Tribe, *Morindeæ*.)

Greenhouse shrubs. Cuttings in sand, in a gentle bottom-heat, and under a hand-glass. Rich sand, loam and peat, or leaf-mould. Summer temp., 60° to 85°; winter, 55° to 60°.

D. i'ndicus. White. Japan. 1889.

— *ma'jor*. White. Japan. 1868.

— *submi'tis*. White, spines very small. Japan. 1868. Gf. t. 570.

Dampie'ra. (Named after the circumnavigator, *Capt. W. Dampier*. Nat. ord., *Goodeniaceæ*. Allied to *Scævola*.)

Greenhouse herbs or shrubs, 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. May. W. Australia. 1842. Ic. Pl. t. 1027.

— *Bro'wnii*. $\frac{1}{2}$. July. New South Wales. Syn., *C. ovalifolia*.

— *corona'ta*. May. W. Australia.

— *cunea'ta*. May. W. Australia.

— *fascicula'ta*. May. W. Australia. 1841.

— *lavendula'cea*. W. Australia. 1843.

— *linea'ris*. W. Australia. 1840

D. ovalifolia. See *D. Brownii*.

— *stri'cta*. 1. July. Queensland. 1814.

— *tes'is*. 1. Blue. June. Swan River.

Damping off is a name applied by gardeners to a premature decay of the stems of seedlings, and other tender plants. This decay arises in many instances from the soil and air in which the plants are growing being kept too moist. 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 only roughly sifted. 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. Cuttings often damp off by being allowed to become dry, and then over watering.

Damson. See *Prunus*.

Danæ'a. (Named after *P. M. Dana*, who wrote on the Flora of Piedmont. Nat. ord., *Filices*.)

Stove herbaceous perennial. Divisions; peat and loam.

D. ala'ta. W. Indies. 1823. Hook. Ic. Fil. i. p. 18.

— *elli'ptica*. W. Indies. Hook. Ic. Fil. i., p. 51

— *Moritzia'na*. Columbia.

— *nodo'sa*. W. Indies. Hook. Ic. Fil. i., p. 51.

— *serrula'ta*. New Grenada. 1881.

Da'phne. (So called after the fabled nymph of that name. Nat. ord., *Thymelacææ*; Tribe, *Euthymeleæ*.)

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* does best in 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. 3. Lilac. February. China. 1844. Fl. Ser. t. 208.

— *Meze'reum*. 4. Pink. March. England. Besides those mentioned below there is a variety with white flowers and yellow berries.

— *album*. 4. March.

— *autumna'le*. 4. Red. August. Europe.

— *fo'lis-purpu'reis*. Leaves tinged with purple. Fl. Ser. t. 592.

— *ru'brum*. 4. Pink. March. England.

HARDY EVERGREENS.

D. alpi'na. 2. White. June. Italy. 1759.

B. C. t. 66.

- D. altaica*. 3. White. April. Siberia. 1796. B. M. t. 1875.
 — *australis*. 3. Pink. April. Naples. B. R. 1838, t. 56.
 — *Blagayana*. White. May. Styria. 1872.
 — *cnosrum*. 1. Pink. July. Australia. 1752. B. M. t. 913.
 — — *foliis variegatis*. 1. Pink. April.
 — — *grandiflorum*. 1. Pink. April.
 — *collina*. 3. Purple. March. Italy. 1752. B. M. t. 428. A variety is figured in B. R. t. 822.
 — *Genkwa*. Lilac. Japan. 1866.
 — *glomerata*. Lilac-purple. Caucasus. 1891.
 — *Gnidium*. 2. White. July. Spain. 1697. B. C. t. 150.
 — *Houtteana*. Purple. May.
 — *indica*.
 — — *elegantissima*. Leaves broadly white-margined. Japan. 1870.
 — *jezoesia*. Yellow. Japan. 1866. Fragrant.
 — *laureola*. 6. Green. February. Britain. Spurge Laurel.
 — *Mazeti*. White. Japan. 1873.
 — *neapolitana*. 2. Purple. March. Naples. 1822. B. C. t. 719.
 — *oleoides*. 2. White. Crete. 1815. B. M. t. 1917.
 — *pontica*. 4. Green, yellow. April. Pontus. 1759. B. M. t. 1282.
 — — *foliis variegatis*. 1. Pink. August. Pontus.
 — *pubescens*. 3. Yellow. April. Austria. 1810.
 — *rupesstris*. $\frac{1}{2}$. Purple or rose. March. Europe?
 — *salsifolia*. White. Spring. Caucasus. 1871.
 — *sericea*. 2. White. April. Crete. 1820.
 — *striata*. 2. Purple. May. Switzerland. 1819.
 — *Tarnton-raira*. 3. White. June. France. 1640.
 — *thymelaea*. 3. Yellow. March. Spain. [1815. Wild Olive.
 — *tomentosa*. 2. White. June. Asia. 1800. Half-hardy.
 — *viridiflora*. Green. Nepal. 1829.
 GREENHOUSE EVERGREENS, ETC.
D. Aucklandii. 2. Himalayas. 1841. Stove.
 — *chinensis*. 4. Yellow. May. China. 1825.
 — *indica*. 4. White. June. China. 1800.
 — — *rubra*. Purplish-pink. China.
 — *japonica*. 2. Pink. March. Japan. 1840.
 — *odora*. 3. Pink, white. July. China. 1771. Jacq. H. Schœnb. t. 351.
 — — *rubra*. 4. Pink. April. China. 1831.
 — — *variegata*. 4. White. October. Japan. 1800.
 — *papyracea*. 4. White. May. Nepal. 1824.
 — *tinifolia*. 6. Jamaica. 1773. Stove.
- Da'rea.** (Named after *Dar*, a botanist. Nat. ord., *Filices*. A section of *Asplenium*.)
 Stove Ferns, requiring the same treatment as *Aspleniums*.
D. alata. Brown. July. W. Ind.
 — *bulbifera*. 1. Brown. June. New Zealand. 1820.
 — *cicutaria*. 1. Brown. June. W. Ind. 1820.
 — *diversifolia*. 2. Brown. March. N. Zealand. 1831.
 — *myriophylla*. Brown. July. S. Amer.
 — *rhizophora*. 1. Brown. July. Jamaica. 1793.
 — *rhizophylla*. $\frac{1}{2}$. Brown. June. N. Amer. 1880.
 — *rutæfolia*. Brown. July. W. Ind.
 — *scandens*. Brown. July. Isle of Leyte.
 — *vivipara*. 1. Brown. June. Mauritius. 1820.

Darlingtonia. (In honour of *Dr. Darlington*, an American botanist. Nat. ord., *Sarraceniaceæ*.)

A remarkable half-hardy or hardy perennial, nearly allied to *Sarracenia*, which see for Culture, etc.

D. californica. 1 $\frac{1}{2}$. Green, yellow, with red-brown veins. April. California. 1861. B. M. t. 5920.

Darnel. *Lo'llium tremulentum*.

Darwinia. (Named after *Dr. Darwin*, author of *The Botanic Garden*. Nat. ord., *Myrtaceæ*; Tribe, *Chamælariciææ*. Allied to *Genetyllis*.)

Greenhouse evergreens, from Australia. Cuttings of young shoots in sand, under a bell-glass; peat and loam, both fibry, and with sand.
D. fasciculata. 29. Red. June. New South Wales. 1820.

— *imbriata*. Bracts large, rose-coloured. June. W. Australia. 1864. Syn., *Genetyllis imbricata*, B. M. t. 5468.

— *taxifolia*. 29. White. June. New South Wales. 1824.

Dasyli'ron. (From *dasy*, thick, and *liron*, a lily. Nat. ord., *Liliacææ*. Allied to *Beaucarnea*.)

Greenhouse evergreens. Seeds. Rich sandy loam.

D. acrotrichum. 6-10. Mexico. 1851. B. M. t. 5030. Syns., *D. gracile*, *Bonapartea gracilis*, and *Barbacenia gracilis*.

— *glaucophyllum*. 12. Whittish. Mexico. 1846. B. M. t. 5041. Syn., *D. glaucum*.

— *graminifolium*. 8. White. Mexico. 1836. Syn., *Yucca graminifolia*.

— *Hartwegia* num. See *Beaucarnea Hookeri*.

— *Hookeri*. See *Beaucarnea Hookeri*.

— *longifolium*. See *Beaucarnea longifolia*.

Dasyste'mon. (From *dasy*, thick, and *stemon*, a stamen. Nat. ord., *Crassulacææ*. Allied to *Crassula*.)

Hardy annual. Seeds in April; sandy loam.
D. calycinum. White. June. Australia. 1823.

Dasysto'ma. See *Gerardia*.

D. pedicularia. Gf. t. 717. See *Gerardia pedicularia*.

— *quercifolia*. See *Gerardia quercifolia*.

Date Palm. *Phoenix dactylifera*.

Date Plum. *Diospyrus Ka'ki*.

Dati'sca. (Derivation not known. Nat. ord., *Datisceææ*.)

Hardy herbaceous perennial, common soil.

D. cannabina. 10. Green. July. S. E. Europe to India. 1739. Sth. Fl. Gr. t. 960.

Datu'ra. Thorn Apple. (From its Arabic name, *Tatorali*. Nat. ord., *Solanacææ*; Tribe, *Hyoscyameææ*.)

Violent narcotic principles pervade this order, the seeds being the most powerful. Annuals, by seeds in the open air, in March. Evergreen shrubs, by cuttings any time in spring or summer, in light soil, in a little heat, with a hand-light over them; rich, fibry loam; and 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'ba*. White. July. E. Ind.
 — *ceratocaula*. 2. White. August. S. Amer. 1805. Syn., *Ceratocaulos daturoides*.
 — *fastuosa*. 3. Purple. August. Egypt. 1629. Gf. 1873, p. 207.
 — *ferox*. 3. White. August. China. 1781.
 — *fruticos*. See *D. Metel*.
 — *guayaquile'nsis*. Swt. Fl. Gard. ser. 2, t. 380. See *D. Metel*.
 — *hu'milis*. 2. Pale yellow. 1829.
 — *ine'rmis*. 2. White. July. Africa. 1710. Jacq. H. Vind. iii., t. 82. Syn., *D. lavis*.
 — *la'vis*. See *D. inermis*.
 — *Metel*. 2. White. Tropics of India and S. America. 1596. B. M. t. 1446. Syns., *D. fruticosa* and *D. guayaquilensis*.
 — *muricata*. 2. White. May. 1820.
 — *quercifolia*. Lilac. July. Mexico. 1824.
 — *stramonium*. 2. White. August. England. Eng. Bot. ed. 3, t. 935. Thorn Apple.
 — *tu'va*. Sulphur. August.
 — *Ta'tula*. 3. Blue. August. N. Amer. 1629. Swt. Fl. Gard. t. 83

GREENHOUSE EVERGREENS.

- D. arbo'rea*. See *D. suaveolens*.
 — *bi'color*. See *D. sanguinea*.
 — *ca'ndida*. 10. White. August. Peru. 1813.
 — *clorica'ntha*. 10. Yellow. May.
 — *fo're-ple'no*. Double flowered, yellow. 1845.
 — *cocci'nea*. Scarlet. Columbia. 1876. Syn., *Brugmansia coccinea*.
 — *corni'gera*. 10. White. July. Brazil. 1844. B. M. t. 4252.
 — *fo're-ple'no*. 10. White. July. 1846.
 — *fastuosa fo're-ple'no*. Double flowered.
 — *ru'bra*. 2. White, purple. May. S. Amer. 1827. Syn., *D. Wagmanii*.
 — *floribu'nda*. Orange. June. S. Amer. 1838.
 — *Gardne'ri*. See *D. suaveolens*.
 — *Kni'ghtii*. White. Double flowered.
 — *lu'tea*. 20. Yellow. September.
 — *metelo'ides*. 4. White. July. California. 1856. Syn., *D. Wrightii*.
 — *sangui'nea*. 20. Scarlet. August. Peru. 1833. Fl. Ser. 1883, p. 4. Syns., *D. bicolor*, *Brugmansia bicolor*, B. R. t. 1739, and *B. sanguinea*.
 — *tu'va*. Yellow. Quito.
 — *suave'olens*. 16. White. August. Peru. 1733. Syns., *D. arborea*, *D. Gardneri*, and *Brugmansia suaveolens*.
 — *Wagma'nii*. See *D. fastuosa*, var. *rubra*.
 — *Wrightii*. See *D. meteloides*.

Daubento'nia. (Named after M. Daubenton, a naturalist. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. Now united to *Sesbania*.)

Stove evergreen shrubs. Cuttings of ripened young shoots in sand, under a glass, and in heat; loam and peat, open and fibry, with a little sand.

- D. longifolia*. See *Sesbania longifolia*.
 — *puncta*. 3. Vermilion. July. New Spain. 1820.
 — *Tripetia'na*. Scarlet, orange. September. Buenos Ayres. 1840. Gf. 1861, p. 341.

Daube'nyia. (In honour of Dr. Daubeny, late professor of botany in the University of Oxford. Nat. ord., *Liliaceæ*. Allied to *Massonia*.)

Pretty yellow-flowering bulbs, from the Cape of Good Hope, which may be planted in a warm border in front of a greenhouse, if protected from frost in winter; and also in pots, in rich,

sandy loam, in a greenhouse or frame, and to be kept quite dry while at rest; offsets.

- D. au'rea*. 4. Yellow. June. 1832. B. R. t. 1813.
 — *fu'wa*. 4. Dull reddish-yellow. June. 1836. B. R. 1839, t. 53.

Daucus. Carrot. (From *daucus*, a carrot. Nat. ord., *Umbelliferae*; Tribe, *Caucalinee*.)

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-pulverized soil. See CARROT.

- D. caro'ta*. 3. June. Britain. Eng. Bot. ed. 3, t. 615-6.
 — *aura'ntia*. 3. June.
 — *horte'nsis*. 3. May.
 — *pra'cox*. 3. June.
 — *monta'nus*. 1. White. Andes of Chili. 1870. Ref Bot. t. 299.

Davallia. Hare's-foot Fern. (Named after E. Davalli, a Swiss botanist. Nat. ord., *Filices*.)

The rhizomes or creeping stems of many of these Ferns are clothed with light-brown scales, and, when without leaves, look much like a hare's foot. Greenhouse Ferns. Divisions and severing the roots, and by spores; peat and loam.

- D. aff'nis*. 2. Ceylon. Hook. Sp. Fil. t. 52.
 — *ala'ta*. See *D. Emersoni*.
 — *angusta'ta*. 3. Malay Peninsula.
 — *barba'ta*.
 — *brachyca'rpa*. New Hebrides. 1883.
 — *bull'a'ta*. 1. East Indies. Hook. Sp. Fil. t. 50.
 — *calve'scens*. B. C. t. 142. See *D. marginatis*.
 — *canaris'nsis*. 14. June. Canary Islands. 1699.
 — *chero'phylla*. 1. N. India. Hook. Sp. Fil. t. 61. Syn., *D. pulchra*.
 — *concavade'nsis*. 1. Brazil. 1823.
 — *dise'cta*. Malay Archipelago. 1855.
 — *divarica'ta*. Malay Archipelago. Syn., *D. polyantha*.
 — *du'bia*. 1. June. Australia. 1826.
 — *e'legans*. 1. June. Tropics of Old World. 1824. Hook. Sp. Fil. t. 43.
 — *ela'ta*. A large variety.
 — *fla'ccida*. Fronds finely cut.
 — *polyda'ctyla*. Fronds much cut. 1881.
 — *Emerso'ni*. 1. Madras. Syn., *D. alata*.
 — *ferrugi'nea*. Madagascar. 1887.
 — *fiji'nsis*. 14. Fiji. 1879. Hook. Sp. Fil. t. 55.
 — *ma'jor*. Fiji. 1879.
 — *fi'rma*. See *D. hirta*.
 — *fla'ccida*. See *D. elegans*, var. *flaccida*.
 — *foenicula'cea*. 2. Fronds finely cut. 1889.
 — *fumario'ides*. 4. West Indies. 1828.
 — *gibbero'sa*. 2. June. Polynesia. 1825.
 — *Griffithia'na*. 1. Assam. 1882. Hook. Sp. Fil. t. 49.
 — *hemi'ptera*. See *D. repens*.
 — *heterophylla*. 4. Malay Peninsula. Hook. Ic. Fil. ii. t. 230.
 — *hi'ria*. 2. North India. Syns., *D. firma* and *D. scaberula*.
 — *imme'rsa*. 14. Hindustan.
 — *khasya'na*. Hook. Sp. Fil. tt. 47 and 57. See *D. strigosa*.
 — *Lindle'yi*. New Zealand. Hook. Sp. Fil. t. 58.
 — *lonchiti'nea*. Hook. Sp. Fil. t. 46. See *D. platyphylla*.
 — *margina'lis*. 2. Ceylon. Syns., *D. calve'scens*, *D. scabra*, and *D. villosa*.
 — *Martie'sii*. Japan. 1879. Greenhouse.
 — *Moorea'na*. See *D. pallida*.
 — *no'vo-zeala'ndica*. 14. New Zealand. Hook. Sp. Fil. t. 51. Syn., *Acrophorus pallidus*.

- D. orna'ta*. 1½. Singapore.
 — *pa'lida*. 8. Borneo. 1869. Syn., *D. Mooreana*.
 — *pa'rula*. ½. Borneo. 1868. Hook. Ic. Fil. ii. t. 138.
 — *pectina'ta*. ½. Polynesia. Hook. Ic. Fil. ii. t. 139.
 — *peda'ta*. ½. Tropical Asia. Hook. Sp. Fil. t. 45.
 — *pentaphy'lla*. 1. Java.
 — *pinna'ta*. 2. Malay Peninsula. Hook. Sp. Fil. t. 60. Syns., *D. gracilis*, *D. luzonica*, and *B. serrata*.
 — *platyphy'lla*. 4. East Indies. Syn., *D. lonchitidea*.
 — *polyan'tha*. Hook. Sp. Fil. t. 59. See *D. divaricata*.
 — *pu'lehra*. See *D. chærophylla*.
 — *pyxida'ta*. 2. New South Wales. 1808. Hook. Sp. Fil. t. 55.
 — *re'pens*. 1½. Borneo. 1869. Syns., *D. hemiptera*, and *Odonitoloma repens*.
 — *retu'sa*. Sumatra. Hook. Sp. Fil. t. 52.
 — *scabe'rula*. See *D. hirta*.
 — *sca'bra*. See *D. marginatis*.
 — *so'ida*. 3. July. Isle of Luzon. 1844.
 — *orna'ta*. Broad variety.
 — *strigo'sa*. 1-3. Tropical Asia. Syn., *D. khasyana*.
 — *rhomboid'ea*. Larger, more deeply cut variety.
 — *tenuifolia*. 1-2. July. Tropical Asia.
 — *Veitchia'na*. 1882.
 — *Tyerma'ni*. 1. West Coast of Africa. 1871.
 — *Veitchia'na*. See *D. tenuifolia*, var. *Veitchiana*.
 — *villo'sa*. Hook. Sp. Fil. t. 48. See *D. marginalis*.

Davidso'nia. (Named after Mr. Davidson, by whom the plant was discovered. Nat. ord., *Saxifrageæ*.)

A handsome stove plant. Sandy loam, peat. Increased by pieces of the stem in sand under a bell-glass.

D. pu'ngens. Leaves bright red when young. Australia. 1877. Syn., *D. pruriens*.

Davie'sia. (Named after the Rev. H. Davies, a Welsh botanist. Nat. ord., *Leguminosæ*; Tribe, *Podalyriææ*. 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.

D. acicula'ris. 2. Yellow. June. New South Wales. 1804. B. M. t. 2679.

— *ala'ta*. 3. Yellow. June. New South Wales. B. R. t. 728. 1818.

— *angula'ta*. Yellow. April. A state of *D. polyphylla*.

— *corda'ta*. 3. Yellow. June. 1824. West Australia. B. R. t. 1005.

— *corymbo'sa*. 2. White, red. July. 1804. Victoria. Andr. Rep. t. 611. Syn., *D. glauca*.

— *mimosoi'des*. 2. Yellow. May to July. 1809. Syns., *D. leptophylla*, *D. linearis*, *D. mimosoides*, B. M. t. 1957, and *D. virgata*.

— *genistoi'des*. B. C. t. 1552. See *D. ulicina*.

— *glau'ca*. Yellow. May. New South Wales. 1805. B. C. t. 1805.

— *incrassa'ta*. 2½. Yellow. June. 1820. Syn., *D. physodes*. B. M. t. 4244.

— *ju'nea*. 2½. Yellow. July. W. Australia. 1823.

— *juniperi'na*. 2. Yellow. May. 1825.

— *latifo'lia*. 3. Yellow. June. New South Wales. 1805.

D. leptophylla and *linearis* are synonyms of *D. corymbosa*, var. *mimosoides*.

— *longifo'lia*. Yellow. May. W. Australia. 1840.

— *mimosoi'des*. A variety of *D. corymbosa*.

— *peduncula'ta*. Yellow. May. W. Australia.

— *physoi'des*. B. M. t. 4244. See *D. incrassata*.

— *polyphy'lla*. Yellow. May. 1842.

— *pu'ngens*. Yellow. May. 1825.

— *quadrita'tera*. Yellow. May. W. Australia. 1840.

— *racemulo'sa*. See *D. umbellulata*.

— *ramulo'sa*. See *Mirabelia daviesioides*.

— *reticula'ta*. See *Pultenæa reticulata*.

— *squarro'sa*. 2½. Yellow. June. New South Wales. 1824.

— *ulici'na*. 3. Yellow. June. 1792. Syn., *D. genistoides*.

— *umbellula'ta*. 2½. Yellow. May. Queensland. 1816.

— *virga'ta*. See *D. corymbosa*, var. *mimosoides*.

Da'vya. See *Meriana*.

Day Lily. *Hemerocallis*.

Deadly Nightshade. *A'tropa Bellado'nnia*.

Dead Nettle. *La'mium*.

Deal. The wood of *P'inus sylve'stris*.

Death's Head Hawk Moth. *Sphi'nix a'tropus*.

Death's Herb. *A'tropa Bellado'nnia*.

Decabelo'ne. (From *deka*, ten, and *belone*, a needle; in reference to the ten filiform processes of the outer corona. Nat. ord., *Asclepiadaceæ*; Tribe, *Stapelieæ*.)

Dwarf greenhouse succulent perennials. The flowers are very handsome; they are long-bell-shaped, of a pale yellowish colour, densely spotted with blood-red. For cultivation, see *STAPELIA*.

D. Ba'rkllyi. ½. S. Africa. 1875. B. M. t. 6203.

— *e'legans*. ½. Angola. 1873. B. M. t. 6115.

Decaschi'stea. (Derivation unexplained. Nat. ord., *Malvaceæ*.)

Handsome stove shrub.

D. fetifo'lia. Coppery-red, yellow, rose. Burmah. 1888.

Decai'snea. (After Joseph Decaisne, a celebrated French botanist. Nat. ord., *Berberideæ*; Tribe, *Lardizabaleæ*.)

An erect half-hardy shrub. Greenhouse, rich loamy soil. Seeds. Cuttings in cool frame.

D. ins'i'gnis. 6-10. Greenisa. May. Sikkim Himalayas. 1884. B. M. t. 6731.

Deciduous. is the term descriptive of any plant which sheds and renews its leaves annually. In cold and temperate climates the leaf-shedding is at the approach of winter, and the reproduction in the following spring, but in hot climates having a very wet and a very dry season annually, many trees shed their leaves during the latter season, and renew them in the wet season.

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., *Saxifrageæ*; Tribe, *Hydrangeæ*. Allied to *Deutzia*.)

Hardy deciduous twiners, 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. 4. July. Carolina. 1785.
— *sarmento'sa*. 80. July. Carolina. 1758.
— *prostra'ta*. 5. July. N. Amer. 1820.

Deherai'nia. (Named after *Pierre Paul Deherain*, assistant naturalist of the museum of the Jardin des Plantes, Paris. Nat. ord., *Myrsinaceæ*.)

An interesting stove shrub, remarkable for its large green flowers. Seeds in a hotbed; cuttings of ripened shoots, with a good heel, taken in spring, in sand, in bottom-heat and under a hand-glass. Rich sandy loam and fibrous peat.

D. smaragd'i'na, 3. Green. Mexico. B. M. t. 6373. Syns., *Jacquinia smaragdina* and *Theophrasta smaragdina*.

Delabe'chia. See **Sterculia.**

Dela'rbreæ. (Dedicated to *M. Delarbre*, a French naturalist. Nat. ord., *Araliaceæ*.)

Stove evergreen tree. For cultivation, see **ARALIA.**

D. specta'bilis. New Caledonia. 1879. III. Hort. ser. 2, t. 314. Syns., *Aralia spectabilis* and *A. concinna*.

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., *Dilleniaceæ*; Tribe, *Delimeæ*. 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 turfy loam, with a little silver sand, pieces of charcoal, and good drainage.

D. ni'tida. 10. Trinidad. 1830. Possibly a species of *Dolicoearpus*.
— *sarmento'sa*. 10. Ceylon. 1820. B. M. t. 3058.

Delo'stoma. (From *delos*, manifest, and *stoma*, a mouth; in allusion to the wide mouth of the flower. Nat. ord., *Bignoniaceæ*; Tribe, *Tecomeæ*. Allied to *Tecoma*.)

Handsome stove trees. For cultivation, see **BIGNONIA.**

D. denta'tum. Bluish-white. October. Ecuador. 1868. B. M. t. 5754.

Delphi'nium. Larkspur. (From *delphin*, a dolphin; supposed resemblance of the spur to a dolphin's head.

Nat. ord., *Ranunculaceæ*; Tribe, *Helleboreæ*.)

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 by seeds in March or April. A very handsome group of hardy herbaceous plants.

D. Aconi'ti. 1. Purple. June. Levant. 1801. P.
— *Aja'cia*. 1½. Pink. June. Switzerland. 1673. A.
— — *fo're-ple'no*. 1. Variegated. June. Europe. 1573.

— *albiflo'rum*. 4. White. July. Armenia. 1823. P.

— *alpi'num*. See *D. elatum*.

— *alta'icum*. 4. Blue. July. Altaia. 1829. P.

— *ambiguum*. Blue. June. Barbary. 1759. P.

— *amo'num*. 2. Pale blue. July. Siberia. 1818. P.

— *azu'reum*. 3. Light blue. July. Carolina. 1805. B. R. t. 1909. Syn., *D. vimineum*, B. M. t. 3593. P.

— *Barlo'vii*. Deep blue. B. R. t. 1944. Probably a hybrid between *D. grandiflorum* and *D. elatum*. P.

— *Brunonia'num*. Blue, purple. June. Thibet. 1864. Strongly marked, B. M. t. 5461. Syn., *D. moechatum*. P.

— *cardina'le*. 3. Scarlet. August. California. B. M. t. 4887. B.

— *cashmiria'num*. Dark blue. July. Kashmir. 1875. B. M. t. 6189. P.

— — *Walkeri*. Purple, yellow. W. Himalayas. B. M. t. 6830. P.

— *cauca'sicum*. 1. Violet. Caucasus. 1880. P.

— — *dasyanthum*. 1½. Songoria. 1880.

— *cheila'tum*. 2. Dark blue. May. Siberia. 1819. B. R. t. 473. P.

— — *Henderso'ni*. Ultramarine. July. 1850.

— *chine'nse*, B. C. t. 71. See *D. grandiflorum*. P.

— *cordiope'talum*. 1. Blue. June. Pyrenees. 1818. A.

— *cons'lidum*. 2. Blue. April. England. A.
— — *fo're-ple'no*. 1. Variegated. June. England.

— *corymbo'sum*. 1½. Pale and dark violet. E. Turkestan. Gf. t. 1059. P.

— *crassica'le*. Blue. June. Siberia. 1822. P.

— *cuneat'um*. 4. Blue. June. Siberia. 1816. B. R. t. 327. P.

— *dasyca'rpum*. 4. Blue. July. Caucasus. 1819. P.

— *de'corum*. 1½. Blue. June. Russia. 1838. B. R. 1840, t. 64. P.

— *denudat'um*. 1½. Rosy-blue. Santiago. 1870. P.

— *dictyoca'rpum*. 4. Blue. July. Siberia. 1817. P.

— *dis'color*. 6. Blue, white. August. Siberia. 1834. P.

— *divarica'tum*. 5. Purple. July. S.E. Europe. 1836. Sibth. Fl. Gr. t. 506. P.

— *ela'tum*. 6. Blue. July. Siberia. 1597. Varieties of this are figured in Gf. t. 736. P.

— *e'legans*. 1½. Blue. July. N. Amer. P.
— — *fo're-ple'no*. 1½. Blue. July. N. Amer. 1741.

— *exalta'tum*. 3. Blue. July. N. Amer. 1758. Syn., *D. tridactylon*. P.

— *fl'ssum*. See *D. hybridum*.

— *flexuo'sum*. 2. Blue. May. Caucasus. 1820. P.

— *formo'sum*. 3. Blue. June. A fine garden hybrid. Fl. Ser. t. 1185. P.

— *gra'cile*. Red. July. Spain. 1826.

— *grandiflo'rum*. 2. Dark blue. July. Siberia. 1816. B. M. t. 1686. Syn., *D. chinense*. P.

— — *album*. 2. White. July.

— — *album-ple'no*. 2. White. June.

— — *fo're-ple'no*. 2. Dark blue. June.

— — *pa'lidum*. 2. Blue. June.

— — *rubrum*. 3. Red, pink. August.

- D. hirsutum*. See *D. hybridum*.
 — *hybridum*. 3. Blue. July. Siberia. 1794.
 Syns., *D. fissum* and *D. hirsutum*. P.
 — *intermedium*. Blue. August. Siberia. 1710.
 B. R. t. 1963. P.
 — *cærulea scens.* 7. Light blue. July. 1836.
 B. R. t. 1894.
 — *laevis*. 6. Blue. May.
 — *leptostachyum*. 6. Blue. May. Pyrenees. P.
 — *pa'llidum*. 7. Sky-blue. July. B. R. t. 1969.
 — *palmatifidum*. 6. Rich blue. June. Siberia? B. R. 1838, t. 38.
 — *pilosissimum*. 6. Blue. July. Siberia.
 — *ranunculifolium*. 6. Blue. July. Pyrenees.
 — *saphirinum*. Rich blue. B. R. 1838, t. 52.
 — *laziflorum*. 4. Blue. July. Siberia. B. R. 1838, t. 30. P.
 — *Maackiaenum*. 5. Deep blue. Gf. t. 344. P.
 — *Menziesii*. 2. Blue. July. N. Amer. 1826. Puberous rooted. P.
 — *mesoleucum*. 3. Blue. July. 1822. P.
 — *montanum*. 4. Blue. July. Switzerland. 1819. B. R. t. 1936. P.
 — *bracteolum*. 8. Blue. June. South Europe. 1816.
 — *moschatum*. See *D. Brunonianum*.
 — *nudicaule*. 1½. Orange-scarlet. July. California. 1869. B. M. t. 5819. P.
 — *aurantiacum*. Garden variety. 1888.
 — *ochroleucum*. 2. White. Iberia. 1823. P.
 — *Olivierianum*. 1½. Blue. June. S. Europe. 1826. P.
 — *pa'llidum*. Pale blue. June. Siberia. 1822. P.
 — *palmatifidum*. 3. Blue. July. Siberia. 1824. P.
 — *glabellum*. 3. Blue. June. Siberia. 1817.
 — *pentagynum*. 2. Blue. July. South Europe. 1819. P.
 — *peregrinum* (of Linnæus). 1. Blue. July. Italy. 1629. P.
 — *picatum*. 1½. Light blue. June. South Europe. 1816. B.
 — *pubescens*. 2. Blue. August. Mediterranean. 1816. Sibth. Fl. Gr. t. 504. P.
 — *pulchrum*. Blue. A hybrid. Gf. t. 1804. P.
 — *purpureum*. 1. Purple. July. Siberia. 1785. Kn. and West, t. 7. P.
 — *Pylæowii*. 1. Violet, black. N. W. China. 1877. Gf. t. 879. P.
 — *Requienii*. 4. Blue. July. Majorca. 1824. P.
 — *revolutum*. 6. Pale blue. April. P.
 — *speciosum*. 4. Blue. July. Caucasus. 1816. B. R. t. 1503. P.
 — *Wheeleri*. Lem. Jard. Fl. t. 196. P.
 — *Staphisagria*. 2. Light blue. July. South Europe. 1596. A.
 — *Szowitsiana*. 3. Yellow. Armenia. 1872. Belg. Hort. 1872, t. 3. P.
 — *tenuissimum*. 1. Purple. August. Greece. 1835. Swt. Fl. Gard. ser. 2, t. 366.
 — *tricolorne*. ½. Blue. July. N. America. 1806. B. C. t. 306. P.
 — *tridactylon*. See *D. exaltatum*.
 — *tristite*. 2. Blue. July. Dahuria. 1819. Kn. and West, t. 54. P.
 — *trolliifolium*. 2-4. Bright blue. Oregon. 1889. P.
 — *ucranicum*. Blue. June. Siberia. 1818. P.
 — *urceolata*. 2. Blue. June. 1801. B. M. t. 1791. P.
 — *velutinum*. 4. Blue. July. Italy. 1819. P.
 — *villosum*. 4. Blue. July. Caucasus. 1818. P.
 — *vininum*. B. M. t. 3593. See *D. azureum*. P.
 — *virgatum*. 1½. Blue. June. Syria. 1823. P.
 — *viride*. Yellowish-green, purple. Chihuahua. 1888. P.
 — *zavili*. Pale yellow. Afghanistan. 1887. P.

Dendrobium. (From *dendron*, a tree, and *bios*, life; referring to the way these air-plants fasten on trees for support. Nat. ord., *Orchidæ*; Tribe, *Epidendrææ*—*Dendrobieæ*.)

A large and handsome genus of stove and greenhouse orchids. Divide the plant when in a dormant state; turfy peat, sphagnum moss, and charcoal, 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, hanking 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. acerosulum*. Yellow. Pink. Singapore. 1840.
 — *aciculara*. Yellow. Pink. Singapore. 1840.
 — *acrobaticum*. Yellowish. Moulmein. 1871.
 — *acuminatissimum*. Greenish. Manila. 1840.
 — *aduncum*. 2. Pink. Manila. 1842.
 — *æmulum*. ½. White, brown. Australia. 1823.
 — *aggregatum*. 1. Yellow. April. India. Syn., *D. Jenkinsii*.
 — *maius*. White. April. India. 1835.
 — *Ainsworthii*. White, with a red-purple spot on the lip. Gf. 1890, p. 177.
 — *albo-sanguineum*. 1½. White, crimson streaked. April. Moulmein.
 — *album*. Pax. Fl. Gard., vol. 2, p. 175. See *D. agueum*.
 — *alpestre*. White. Himalayas. 1840.
 — *amblyornidis*. New Guinea. 1878. The slender stems are used by the Amblyornis bird for building its home.
 — *ambotnense*. ½. White, yellow. June. Ambouyna.
 — *amethystoglossum*. White. Purple. Philippine Islands. 1872.
 — *ameinum*. White, yellow. June. Nepal. 1843. Syn., *D. Egertoniae* and *mesochlorum*.
 — *amplum*. Straw-coloured. Khasia. 1837.
 — *anceps*. Greenish or yellowish. Sikkim Himalayas. Syn., *Aporum anceps*. B. M. t. 3608.
 — *andersonium*. 1½. Purple. June. Philippine Islands. 1840.
 — *antelope*. Yellowish; lip striped with mauve. Moluccas. 1883.
 — *Aphrodite*. Lemon, crimson. Moulmein. 1862. Syn., *D. nodatum*, B. M. t. 5470.
 — *aquetum*. 1. Greenish white. November. Bombay. 1842. Syn., *D. album*.
 — *arachnites*. ½. Moulmein. 1874.
 — *arachnostachyum*. 1. Green, violet. New Guinea. 1877.
 — *aspasia*. Garden hybrid. 1890.
 — *asphale*. Whitish. 1874.
 — *atroviolaceum*. Deep purple. New Guinea. 1890.
 — *aurantiacum*. 1. Orange. Assam. Syn., *D. chryseum*.
 — *aurivum*. See *D. heterocarpum*.
 — *auriferum*. Yellow. China. 1843.
 — *barbatulum*. White, red. E. Indies. 1844. B. M. t. 5444 is *D. Fycheanum*.
 — *Barringtoniæ*. See *Lycaste Barringtoniæ*.
 — *Bensoniæ*. Orange, white, crimson. Burmah. 1867.
 — *aurantiacum*. Orange, brown. Moulmein. 1874.
 — *zanthinum*. White, yellow. 1878.
 — *bicameratum*. Yellow, purple. August. Khasia. 1837. Syn., *D. breviflorum*.
 — *bislorum*. White. Society Islands. 1844.
 — *bigibbum*. 1. Pink. November. New Zealand. Garden, March 31, 1883.

- L. bigibbum ca'ndidum*. White. Australia. 1878.
 — *superbum*. Purple, blackish-purple. Australia. 1878.
 — *binoculata*. Coppery, yellow, purplish. Burmah. 1869.
 — *bostrycho'des*. White, red. Borneo. 1880.
 — *Buxa' lili*. White, purple, orange. Moulmein.
 — *bracteosum*. Purple; lip yellow, marked with red. New Guinea. 1886. Syn., *D. chrysolabrum*.
 — *Brymeria num.* Yellow, orange. Burmah. 1875.
 — *Bulleria num.* See *D. gratiosissimum*.
 — *Burbi' dgei*. Yellowish. Sondiack Islands. 1878.
 — *bursi' gerum*. Lip with a yellow area. Philippine Islands. 1882.
 — *cærule' scens*. 2. Sky-blue. April. Khasia. 1837.
 — *calceola' ria*. 2. Orange, pink. June. E. Indies. 1820.
 — *calce' olus*. Yellow. India. 1838.
 — *cambridge' num.* B. M. t. 4450. See *D. ochreatum*.
 — *canalicula' tum*. 1. Pale yellow; lip spotted purple. 1881.
 — *ca'ndidum*. White. April. Trop. Himalayas. 1837.
 — *capri' lipes*. Yellow. Moulmein. 1867.
 — *e' legans*. Yellow, orange. Burmah. 1880.
 — *carini' ferum*. White, orange, red. India. 1869.
 — *lateri' tium*. Yellow, white, brick-red. 1833.
 — *Wa'titi*. White; lip striped yellow. B. M. t. 6715.
 — *Cass' ope*. Hybrid between *D. japonicum* and *D. nobile*. G. C. 1890, viii. p. 620.
 — *cassytho' des*. Yellow. September. Australia. 1839.
 — *ca' stum*. See *D. moniki' forme*.
 — *ceri' num*. Ochre, shaded with brown, light purple. July. Malay Archipelago. 1879.
 — *chlo' rops*. Buff. Bombay. 1842.
 — *chloro' pterum*. Light green, striped with red; lip reddish, yellow. New Guinea. 1884.
 — *chloro' stels*. White, purple. Hybrid between *D. Linawianum* and *D. Wardianum*. 1837.
 — *xanthoc' ntrum*. Hybrid. G. C. 1889, v. p. 490.
 — *Christya' num*. White, cinnabar. G. C. 1882, xvii. p. 178.
 — *chrysa' nthum*. 1. Yellow. February. Nepaul. 1828.
 — *anophta' imum*. Without yellow spots on lip. G. C. 1883, xix. p. 44.
 — *microphtha' imum*. Yellow, pale brown. 1879.
 — *chry' seum*. See *D. aurantiacum*.
 — *chryso' cre' pis*. Yellow, orange. Moulmein. 1871.
 — *chryso' d' scus*. Garden hybrid. G. C. 1887, i. p. 414.
 — *ocula' tum*. Garden hybrid.
 — *chryso' la' brum*. See *D. bracteosum*.
 — *chryso' tis*. Fl. and Pom. 1871, p. 145. See *D. Hookerianum*.
 — *chryso' to' xum*. 1. Yellow. March. Burmah. 1845. B. R. 1847, t. 36.
 — *cilia' tum*. Green, yellow; lip fringed. Moulmein. 1864.
 — *bre' ve*. Stems short, thick. Rangoon. G. C. 1883, xix. p. 323.
 — *cinnabari' num*. Vermilion, purple. July. 1880.
 — *clava' tum*. Yellow. May. Assam. 1851.
 — *Cobbia' num*. White. Yellow. G. C. 1881, xvi. p. 780.
 — *Cælo' gyme*. Straw, purple, orange. Moulmein. 1871.
 — *D. compre' ssuum*. B. R. 1844, t. 53. See *D. lamellatum*.
 — *crassin' de*. 1-2. White, purple, yellow. January. Siam. 1868.
 — *abijfo' rum*. White, yellow. Burmah. 1875.
 — *Barberia' num*. White, violet-purple. India. 1875.
 — *crepida' tum*. 1½. White, pink, orange. Assam.
 — *creta' ceum*. 1. Whitish, pink-veined. Java. 1848. B. R. 1847, t. 82.
 — *crini' ferum*. Yellowish. Ceylon. 1843.
 — *crispa' tum*. White. E. Indies. 1838.
 — *crue' ntum*. Whitish, cinnabar. G. C. 1884, xxi. p. 604.
 — *crumena' tum*. 1. White. April. Sumatra. 1823. B. M. t. 4013.
 — *violæ' dorum*. White. April. Java. 1838.
 — *crystalli' num*. White, purple, orange. Burmah. 1868.
 — *cuculla' tum*. B. R. t. 748. See *D. Pierardi*, var. *cucullatum*.
 — *ma' jus*. Purplish; lip creamy-white. Moulmein. 1862.
 — *cucumeri' num*. ½. White, pink. N. Holland. 1841. B. R. 1843, t. 37.
 — *cumula' tum*. 2. Lilac. September. Moulmein. 1855.
 — *Cunningha' mii*. White. New Zealand. 1843.
 — *cu' preum*. 2½. Red, buff. June. E. Indies. 1825. B. R. t. 1779.
 — *Curti' vi*. 2½. Amethyst, white, orange. July. Burmah. 1831.
 — *cuspida' tum*. White. 1844.
 — *cybe' le*. Garden hybrid. G. C. 1887, ii. p. 778.
 — *cymbidoi' des*. Yellow, white, purple. Java. B. M. t. 4755.
 — *dactyli' ferum*. Light ochre, brown. G. C. 1884, xxi. p. 638.
 — *D' Alberti' vi*. Whitish, green, red. New Guinea. 1878.
 — *Dalhousia' num*. 3. Purple, rose. India. 1837. B. R. 1846, t. 10.
 — *Rossia' num*. Nakeen. Burmah? G. C. 1882, xvii. p. 796.
 — *Daya' num*. Lilac, purple; lip deep purple, with deep blood-purple blotch.
 — *Dea' rei*. White, yellow. G. C. 1882, xviii. p. 361. Possibly *D. superbum*, var. *Dearei* is a synonym of this.
 — *densifo' rum*. 1½. Orange. June. Nepaul. 1829. B. M. t. 3118. B. R. t. 1828.
 — *a' lbo- tu' teum*. White, orange. March. Moulmein. 1867. Syn., *D. thyrsoiflorum*.
 — *pa' lidum*. Pale yellow. India. 1837.
 — *thyrsoiflo' rum*. White, orange. Burmah. 1878. Syn., *D. thyrsoiflorum*.
 — *Devonia' num*. 1. White, yellow, pink. May. E. Indies. 1837. B. M. t. 4429.
 — *cand' idulum*. White. 1876.
 — *Elliotia' num*. Tips of sepals, petals and lip dark purplish. 1876.
 — *rhodoneu' rum*. Lip veined with purple. Moulmein. 1868.
 — *di' scolor*. 4. Yellow, brown. October. Java. 1838. B. R. 1841, t. 52.
 — *dixa' nthum*. Yellow. Moulmein. 1868.
 — *stenope' tatum*. 2. Burmah. B. M. t. 5564.
 — *Doreya' num*. New Guinea. 1888.
 — *Draco' nis*. Tenasserim. G. C. 1883, xix. p. 598. Syn., *D. eburneum*, B. M. t. 5459.
 — *ebu' rneum*. White, orange. Moulmein. 1864. *D. eburneum* of B. M. t. 5459 is *D. Draconis*.
 — *Egerto' nia*. Pink, yellow. N. India. 1844.
 — *elonga' tum*. 1½. Yellow, red. N. Holland. 1835.
 — *erythro' p' gon*. Pale ochre, white, scarlet. Sonda. G. C. 1885, xxiv. p. 198.
 — *erythroa' nthum*. Orange, purple. Philippine pines. 1874.

- D. euosmum*. Cream, marked purple; column light green. Hybrid between *D. endocharis* and *D. nobile*. G. C. 1885, xxiii. p. 174.
- *Fairfaxii*. White, green, purple. New Hebrides. G. C. 1889, v. p. 798.
- *Falconeri*. 4. White, purple, orange. Bhootan. 1856.
- *albifidulum*. White, purplish. India. 1876.
- *giganteum*. Blush-white, rosy-purple, maroon, orange-yellow. N. India. Warn. Orch. Alb. t. 267.
- *robustum*. Stems thicker. 1879.
- *Farmerrii*. 1½. Pale straw-yellow. March. E. Indies. 1847. B. M. t. 4659.
- *albium*. White, orange. Burmah. 1868.
- *avreoflavum*. Golden-yellow. Moulmein. 1864.
- *fimbriatum*. 2. Yellow. May. Nepaul. 1823. B. M. t. 4160.
- *oculatum*. Orange, brown. Nepaul. Syn., *D. oculatum*, and *D. Paxtoni*, of Paxt. Mag. vi. p. 169.
- *Findleyi* num. Pale lilac, yellow, orange. Burmah. 1877.
- *flavescens*. Yellow. Java. 1844.
- *flexuosum*. Similar to *D. longicornu*, but smaller veins of lip even. India. G. C. 1884, xxii. p. 489.
- *formosum*. White. May. Khasia. 1837. B. R. 1839, t. 64.
- *Berkleyi*. Smaller, and with narrower petals than the type. G. C. 1883, xix. p. 110.
- *giganteum*. Large-flowered variety. India.
- *nobileus*. Purple; lip darker. G. C. 1882, xvii. p. 366.
- *sulphuratum*. Orange, yellow. Burmah. G. C. 1882, xviii. p. 437.
- *Friedrichstium*. Light yellow; lip blotched darker yellow and purple. Siam. 1887.
- *fulgax*. Yellow, purple. India. 1878. The flowers remain open only a few minutes.
- *fuscatum*. Deep orange, purple-brown. April. Himalayas. 1864.
- *fulvum*. 2-6. Reddish-brown. Australia. G. C. 1879, xii. p. 680.
- *Fytchei* num. 1. White or rosy. Rangoon. 1864. Syn., *D. barbaticum* of B. M. t. 5444.
- *rosea*. Rose, deep crimson-purple. Burmah. G. C. 1887, i. p. 209.
- *gallicea* num. White; lip bright yellow. Lind. t. 241.
- *Gibsonii*. Orange. June. Khasia. 1837. Paxt. Mag. v. p. 169.
- *glumaceum*. Green. Philippines.
- *Goldiei*. N. Australia. 1878.
- *Gouldii*. White; veins yellow and purple. Polynesia. 1867.
- *acutum*. Lip with a purple blotch. 1867.
- *gracilicaule*. Yellow, spotted red. Australia. B. M. t. 7042.
- *grandiflorum*. See *Macillaria*.
- *gratiosissimum*. White, rose. Moulmein. 1867. Syn., *D. Bullerianum*.
- *Griffithii* num. Yellow. March. E. Indies. 1838.
- *Guiberti*. Syn., *D. Guibertii*.
- *Harveyi* num. Chrome; the lip has two orange blotches. Burmah. G. C. 1883, xix. p. 624.
- *Hasei* lili. Purple. Java. 1844.
- *hedysmum*. See *D. scabrilingue*.
- *hercoglossum*. Pale mauve; lip white, mauve-purple. Malacca. G. C. 1886, xxvi. p. 487.
- *heterocarpum*. Pale yellow. Khasia. 1837. B. M. t. 4708. Syn., *D. rhombum*.
- D. heterocarpum Henshalletii*.
- *hexadesmum*. Greenish, yellow. Moulmein. 1869.
- *Heynei* num. White, green. March. Bombay. 1838.
- *Hilli*. White. Australia. 1861.
- *Hookeri* num. 2. Deep yellow, purple-brown. Autumn. Assam. 1870. Syn., *D. chrysothis*.
- *Hu'ghii*. Pure white, orange, mauve. Singapore. G. C. 1882, xvii. p. 764.
- *Huttonii*. Pale and deep crimson, purple, yellow. Malay Archipelago. 1869.
- *hymenophyllum*. Greenish. May. Java. 1844.
- *inavditum*. Pale yellowish; lip pale ochre, spotted brown. New Guinea. 1886. Lind. t. 66.
- *infundibulum*. White, orange. Moulmein. 1863.
- *Jamesii* num. See *D. Jamesianum*.
- *ornatissimum*. Cinnabar blotches and stripes on column and lip. G. C. 1883, xix. p. 656.
- *insigne*. Yellowish-green. Khasia. 1837.
- *ionopus*. Deep yellow, reddish. Burmah? G. C. 1882, xviii. p. 808.
- *Jamesii* num. White, red. Burmah. 1869. Syn., *D. infundibulum*, var. *Jamesianum*.
- *japonicum*. See *D. moniliforme*.
- *Jenkinsonii*. 1. Yellow. May. Gualpara. 1888. B. R. 1839, t. 37.
- *Jerdoniai* num. Red, purple. Neilgherries. 1868. Wight Ic. t. 1644.
- *Johannis*. Chocolate. Australia. 1865.
- *semiflavum*. Yellow; lip lighter, edged with reddish-brown. May. 1877. G. C. 1883, xix. p. 368.
- *juveum*. Greenish. Singapore. 1841.
- *Ju'no*. Hybrid between *D. Wardianum* and *D. Linavianum*. G. C. 1890, vii. p. 88.
- *Kingii* num. ½. Pinkish. February. New Holland. 1843. B. R. 1845, t. 61.
- *alvum*. White. Australia. 1888. Warn. Orch. Alb. t. 332.
- *Kuhlthii*. 2. Pale purple. Java. 1844. B. R. 1847, t. 47.
- *lamellatum*. ¾. Yellow. Tenasserim, not Ceylon. Syn., *D. compressum*. B. R. 1844, t. 33.
- *Lansbergei* num. New Guinea. 1888.
- *lasioglossum*. White, purple, yellow. Burmah. 1868.
- *latiflorum*. Green. Manila.
- *Leechii* num. White, rose-purple. 1882. Hybrid between *D. aureum* and *D. nobile*. Garden, July 7, 1883.
- *leucochlo'rum*. White, red, greenish. Moulmein. 1879.
- *leucophorum*. White. Malay Archipelago. G. C. 1882, xviii. p. 552.
- *leucopterum*. White; disk of lip rich purple. Hybrid between *D. endocharis* and *D. nobile*. 1886.
- *lilacium*. Lilac. Borneo. 1865.
- *Linavianum*. 1. Pale rosy-lilac, crimson. China. 1824. Syn., *D. moniliforme* of Lindley. B. R. t. 1314.
- *ma'jus*. A more richly coloured variety.
- *lineariflorum*. White, purple-mauve, green. Sumatra. G. C. 1883, xx. p. 618.
- *lingueforme*. ¼. Purple. N. South Wales. 1810.
- *linguella*. Rosy; lip partly yellow. Malay Archipelago. G. C. 1882, xviii. p. 552.
- *lituiflorum*. 1½. Purple, white. E. Indies. 1856.
- *ca'ndidum*. White. 1880.
- *Fremadii*. Assam. 1878.
- *robustum*, is a form with thicker stems. Burmah. 1877.

- D. Loddigesii*. 1. Yellow. April. E. Indies. Syn., *D. pulchellum*. See G. C. 1887, ii. p. 155.
- *longicorru*. 1. White. May. Nepal. 1828. B. R. t. 1315.
- *Lo'wi*. Yellow, red. Borneo. 1862.
- *pleio'trichum*. A variety without red lines on the lip. G. C. 1885, xxiv. p. 424.
- *Lubbersia'num*. Light yellow, cinnabar. Burmah. G. C. 1882, xvii. p. 460.
- *Lu'na*. Hybrid between *D. Findleyanum* and *D. Ainsworthii*. G. C. 1890, vii. p. 88.
- *lute'olum*. Pale yellow. Spring. Moulmein. 1864. B. M. t. 5441.
- *chloroc'entrum*. Primrose; lip with green hairs. G. C. 1883, xix. p. 340.
- *Macca'rthia*. 2. Pink. Ceylon. 1884.
- *Macfarla'nei*. 1. Pure white, marked purple. New Guinea. G. C. 1882, xviii. p. 520.
- *Macra'ei*. Pink. India. 1839. Syn., *D. pardalinum*.
- *macra'anthum*. 2. Lilac. Manilla. 1842. B. M. t. 3970.
- *macrochi'tum*. Rose. Manilla. 1838.
- *macrophy'tum*. Lindl. Sert. t. 35. A synonym of *D. superbum*.
- *giga'nteum*. Lilac, rose-purple. Manilla. Rev. Hort. 1886, p. 348.
- *steno'pterum*. Ochre-yellow, dotted reddish brown outside. G. C. 1888, iii. p. 398.
- *macrosta'chyum*. Yellow. June. Ceylon. B. R. t. 1865.
- *marginat'um*. White; lip orange, margined with white. Moulmein. 1864.
- *xanthophleb'ium*. See *D. xanthophleb'ium*.
- *marmorat'um*. White, purple. Burmah. 1875.
- *melanodi'scus*. Marked rich purple. Hybrid between *D. Ainsworthii* and *D. Findleyanum*. G. C. 1887, i. p. 414.
- *melanophthal'mum*. Natural hybrid between *D. Wardianum* and *D. crassinode?* G. C. 1886, xxv. p. 426.
- *mesochlo'rum*. White. June. India. 1846.
- *micans*. Hybrid between *D. lituiflorum* and *D. Wardianum*. G. C. 1884, xxi. p. 342.
- *microgla'phis*. White, purple. Borneo. 1863.
- *minu'tum*. White. March. New Holland. 1826.
- *mirabilia'num*. 1½. Greenish-yellow, brown. New Guinea. Lindl. t. 215.
- *mi'serum*. White. March. Philippines. 1887.
- *Mohlia'num*. Cinnabar-red. Fiji. 1877.
- *moniliflor'um*. White or purplish. Japan. 1824. B. R. t. 1314. Syns., *D. castum* and *D. japonicum*.
- *Moo'nei*. White. Australia. 1878.
- *moscha'tum*. Rose, buff. May. India. 1828. B. M. t. 3837.
- *cu'preum*. Reddish-yellow. Syn., *D. moschatum*, var. *calceolaria*.
- *mutabile*. Rose. April. Java. 1844.
- *no'bile*. 2. Green, yellow, pink. China. Lindl. Sert. t. 3. *D. nobile* of B. M. t. 5003 is *D. primulinum*.
- *alb'um*. White; lip with a dark purple spot. Orch. 1890, p. 304.
- *e'legans*. White, pale yellow, maroon, rosy purple.
- *formosa'num*. Purple, mauve, green. G. C. 1883, xix. p. 452.
- *interme'dium*. White, crimson.
- *nobil'ius*. Purple, lip darker. G. C. 1882, xviii. p. 366.
- *pe'ndulum*. A rich coloured variety.
- *Sandaria'num*. Bright purple, rosy, white. G. C. 1888, iii. p. 554.
- D. no'bile Schneideria'num*. Yellow, deep mauve, white. G. C. 1884, xxi. p. 577.
- *Schra'deria'num*. White, amethyst, purple, maroon, pale yellow.
- *Tobia'num*. Petals bordered purple. March. 1882. G. C. 1884, xxi. p. 445.
- *Walli'chii*. Purple, cream, white. March. E. Indies. 1840.
- *nodat'um*. A synonym of *D. Aphrodite*.
- *nu'dum*. Pale purple. June. Java. 1844.
- *nycteridogloss'um*. Green, striped dark red. Papua. G. C. 1886, xxvi. p. 616.
- *ochrea'tum*. Yellow, purple. June. Khasia. 1886.
- *ocula'tum*. A variety of *D. fimbriatum*.
- *palpe'brae*. White, yellow. Moulmein.
- *pa'rcum*. Yellowish. Burmah. 1866.
- *pardali'num*. See *D. Macraei*.
- *Pari'shii*. Mauve, purple. Moulmein. 1863.
- *parthe'num*. White with purple blotches. Borneo. G. C. 1885, xxiv. p. 489.
- *Paxto'ni*. The plant mentioned under this name in B. R. 1839, misc. p. 56, is *D. chrysanthum*; that in Paxt. Mag. vi. p. 169, and Fl. Ser. t. 725, is *D. fimbriatum*, var. *oculatum*.
- *pe'ndulum*. See *D. nobile*, var. *pendulum*.
- *perena'nthum*. Pale yellow; lip white, yellow, brown. Moluccas. G. C. 1886, xxvi. p. 70.
- *Petri*. 1. White. Polynesia. 1877.
- *Phaleno'psis*. Mauve or lilac; lip purple with maroon throat. Australia. G. C. 1880, xiv. p. 38.
- *Statteria'num*. Timor Lant. Rehb. ser. 2, i. t. 7.
- *pi'ctum*. Pink, white, crimson. Borneo. 1862.
- *Piera'rdi*. 2. Whitish. April. E. Ind. 1815. B. M. t. 2584.
- *cuscula'tum*. Straw-coloured. India. 1835.
- *latiflo'rium*. Purple, rose, yellow. June. Singapore. 1830. Perhaps the same as *D. primulinum*.
- *lute'scens*. Yellowish. May. India. 1835.
- *ma'jus*. Whitish. April. India. 1830.
- *Pitcheria'num*. Pale rose, deep purple; lip yellow, purple. G. C. 1883, iii. p. 392.
- *pleiosta'chyum*. White. New Guinea. G. C. 1882, xviii. p. 520.
- *pogonia'tes*. Yellowish; lip orange. North Borneo. G. C. 1886, xxvi. p. 199.
- *polyca'rpum*. 3. Yellowish, purple-red. Sondaic Isles. G. C. 1883, xx. p. 492.
- *polyphleb'ium*. Bright rose, purple, pale yellow. Burmah. 1887. Warn. Orch. Alb. t. 229.
- *Eme'rici*. Rose, white, amethyst, straw. Burmah. G. C. 1887, ii. p. 242.
- *polysta'chyum*. B. C. t. 458, is now referred to *Polystachya*.
- *porphyroga'strum*. Garden hybrid.
- *praeci'ntum*. Ochre, purple, sulphur, orange. 1877.
- *primuli'num*. Primrose, yellow, rose-purple. Moulmein. 1864.
- *profu'sum*. Yellowish-green, yellow. Philippines. G. C. 1884, xxi. p. 510.
- *pulche'rimum*. B. C. t. 1935. See *D. Loddigesii*.
- *purpu'reum*. Purple. March. India. 1834.
- *canad'ulum*. White, tipped green. Lindl. t. 98.
- *Mosele'yi*. Purple. Arn Islands. G. C. 1884, xxi. p. 604.
- *pycnosta'chyum*. White, purple. Moulmein. 1866.
- *revolu'tum*. Straw-colour. April. Singapore. 1842.
- *rhodoc'entrum*. Purple, white, yellow. 1872.
- *rhodoptery'gium*. Rosy, purplish. Burmah 1875.

- D. rho'mbeum*. B. R. 1843, t. 17. See *D. heterocarpum*.
- *Rima'ni*. Yellow, striped purple; lip white. Moluccas. G. C. 1882, xviii. p. 680.
- *Ruckeri*. 1½. Yellow. February. Philippines. 1843. B. R. 1843, t. 60.
- *rugosum*. 1. Pale yellow. April. Java. 1844.
- *rutri'ferum*. Rose. New Guinea. G. C. 1887, ii. p. 746.
- *sallac'ne*. Orange, red. Indian Archipelago. 1862.
- *sanguinolentum*. ½. Buff, violet. March. Ceylon. 1842. B. R. t. 1291; B. M. t. 4352.
- *scabri'ngus*. White, yellow, red. Burmah. 1862. Syn., *D. hedyosmum*.
- *Schneideria'num*. White, tinged lilac; lip orange, sulphur lilac-purple, striped reddish. Hybrid between *D. aureum* and *D. Findleyanum*. 1887.
- *schaeni'num*. White. June. N. Holland. 1845.
- *Schroederi*. White, yellow, orange. India. 1870.
- *acut'ptum*. 1½. Pure white; lip white, orange. Borneo.
- *secundum*. Rose, purple. Malacca. 1830.
- *nevum*. White, orange. G. C. 1882, xvii. p. 733.
- *pa'lidum*. Pale purple. July. Sumatra. 1840.
- *se'nile*. Golden-yellow; lip striped reddish. Moulmein. 1865. B. M. t. 5520.
- *signatum*. White, sulphur, brown. Siam. G. C. 1884, xxi. p. 306.
- *Smit'licae*. Whitish, rosy purple, green. N. Australia. 1879.
- *speciosum*. 1. Yellow, white. January. E. Australia. 1824. B. M. t. 3074.
- *Bancroftia'num*. Sulphur, purple. G. C. 1881, xv. p. 782.
- *H'lii*. See *D. Hillii*.
- *sphigidoglossum*. See *D. stuposum*.
- *splendidissimum*. Rose-purple shading to white, purple, yellow.
- *grandiflorum*. Garden hybrid.
- *aquatens*. Pale brownish, green, purple. Rio Janeiro. 1822. B. R. t. 732.
- *stratiotes*. Ivory white; lip cream, veined with violet. Sunda Isles. Ill. Hort. t. 602.
- *strobil'ceras*. Sunda Isles. G. C. 1886, xxv. p. 266.
- *Rossia'num*. White, greenish, yellow. New Guinea. 1888. Lind. t. 124.
- *Stricklandia'num*. Yellowish, purple. Japan. 1877.
- *strongy'lanthum*. 1. Yellowish-green, violet-brown. India. 1873.
- *stuposum*. 1. Pale yellow, orange-red. Siam, Burmah. 1888. Syn., *D. sphigidoglossum*.
- *suavissimum*. Yellow, purplish. July. Burmah. 1873.
- *sulcatum*. 1. Orange. April. Khasia. 1837. B. R. 1838, t. 65.
- *polyantha*. A more robust form. G. C. 1887, i. p. 607.
- *superbiens*. Purple. N. Australia. 1876.
- *superbum*. 2. Pink, tinged rose. April. Philippines. Syn., *D. macranthum* of B. M. 3970.
- *Burkei*. White, rose, yellow.
- *Hutto'ni*. White, purple. Moluccas. 1869.
- *veluti'num*. Light purple, dark purple. Moluccas. 1869.
- *Tattonia'num*. White, tipped with yellow; lip white, white mauve disc. N. Australia. 1865.
- *tauri'num*. 5. Yellow, purple. October. Philippines. 1837. B. R. 1843, t. 28.
- D. teretiflorum*. 1. Purple. July. N. Holland. 1823. B. M. t. 4711.
- *tetrachro'num*. White, yellow, dark purple, green. Borneo. 1880.
- *tetragonum*. 2. Yellow, green. May. Moreton Bay. 1838.
- *thyrsiflorum*. See *D. densiflorum*, var. *thyrsiflorum*.
- *tipuli'ferum*. Purplish. Fiji. 1877.
- *to'rtile*. ½. White. May. Moulmein. 1847. B. M. t. 4477.
- *transparens*. Rose. Nepaul. B. M. t. 4663.
- *atrum*. White. G. C. 1889, vi. p. 95.
- *Treacheria'num*. Pale purplish. Borneo. B. M. t. 6591.
- *triade'num*. 2. White, lilac. E. Indies. 1844. B. R. 1847, t. 1.
- *trigo'hopus*. ½. Golden yellow. Burmah. G. C. 1887, ii. p. 682.
- *undulatum*. Yellow, brown. March. Manilla. 1838.
- *imbril'atrum*. Lip fringed. N. Australia. 1878.
- *vaginatum*. Straw coloured, purple. Singapore.
- *vandiflorum*. White, lip darker. New Guinea. G. C. 1882, xviii. p. 520.
- *Vanneria'num*. White, purple, sulphur. Hybrid between *D. moniliforme* and *D. Falconeri*. G. C. 1887, ii. p. 72.
- *Veitchia'num*. Yellow, white, cream. Java. 1846.
- *Venus*. Hybrid between *D. Falconeri* and *D. nobile*. G. C. 1890, vii. p. 608.
- *veratriflorum*. 1½. New Guinea.
- *veza'bile*. Light sulphur-ochre, white. April. 1878. G. C. 1884, xxi. p. 271.
- *villo'sulum*. Orange. June. E. Indies.
- *virginicum*. Ivory-white, green, light reddish. Burmah. G. C. 1884, xxii. p. 520.
- *Wardia'num*. White, magenta. Assam. 1863. There is a hybrid between this and *D. aureum*, named *D. Wardiano-aureum*. G. C. 1889, v. p. 490.
- *ca'ndidum*. White. 1876.
- *Lo'vii*. White, rose, purple-brown. 1876.
- *Wattii*. See *D. cariniferum*, var. *Wattii*. B. M. t. 6716.
- *Williamsia'num*. White, rosy, violet-purple. New Guinea. 1878.
- *Williams'ni*. White, blood-red. Assam. 1860.
- *xanthoc'entrum*. Garden hybrid. G. C. 1890, vii. p. 88.
- *xanthophlebium*. White, yellow. Moulmein. 1864. Syn., *D. marginatum*, var. *xanthophlebium*.

Dendrobium Beetle. The pseudo-bulbs of *Dendrobiums* have occasionally been found to be hollow, owing to the depredations of the larva of some beetle, which, however, has not been identified. A figure of this larva is given by Professor Westwood in the "Gardeners' Chronicle," 1883, xix. p. 144.

Dendrochilum. (From *dendron*, a tree, and *cheilos*, a lip. Nat. ord., *Orchideae*.)

Stove epiphytes. For cultivation, see **DENDROBIUM**. The long slender drooping spikes, densely covered with small whitish or yellowish flowers, are exceedingly elegant and pleasing to the eye.

D. abbreviatum. See *Liparis*.

— *Cobbia'num*. Sulphur, orange. Philippines. 1880.

— *filiforme*. ¾. White. Philippines. 1840.

D. gluma'ceum. See *Platyclinia glumaceus*.
—*latifolium*. Greenish. Manilla. 1843.

Dendrome'con. (From *dendron*, a tree, and *mekon*, the poppy; resembling that flower, with a woody stem. Nat. ord., *Papaveraceæ*; Tribe, *Hunneman-nice*.)

A showy half-hardy shrub. Probably from cuttings as well as seed. Light rich loam.

D. r'gidum. Yellow. June. California. B. M. t. 5134.

Dendropa'nax. (From *dendron*, a tree, and *Panax*; Tree-Panax. Nat. ord., *Araliaceæ*.)

Stove trees or shrubs. For cultivation, see PANAX.

D. arbo'reus. 12. Pale yellow. July. W. Indies. Syns., *Aralia arborea*, Jacq. H. Schenb. t. 51, and p. 62 of this work, also *Hedera arborea*.

—*arg'nteus*. Leaves silvery above, purplish beneath; veins green. Brazil. 1878.

Dendrose'ris. (From *dendron*, a tree, and *seris*, a kind of endive; in allusion to its tree-like habit and the form of the leaves. Nat. ord., *Compositæ*; Tribe, *Cichoraceæ*.)

Greenhouse tree of small size, with a simple or rarely branched stem, surmounted by a crown of leaves, and a drooping panicle of large flowers. Seeds; imported plants. Rich loam.

D. macrophy'lla. 10. Yellow. Summer. Juan Fernandez. 1877. B. M. t. 6353.

Denha'mia sca'ndens. See *Culcasia scandens*.

Dennstoe'dtia. See *Dicksonia*.

Denta'ria. Toothwort. (From *dens*, a tooth; referring to the fanged roots. Nat. ord., *Cruciferae*; Tribe, *Arabideæ*. United with *Cardamine* by some authors.)

Hardy herbaceous perennials. Divisions of tuberous-like roots; seeds sown in April; rich, light soil, in moist situations, good plants for Rockeries.

D. bulbifera. 1½. Purple. April. England.

—*dasy'd'ba*. Russia. 1838.

—*digita'ta*. 1½. Pale purple. Switzerland. 1856. B. C. t. 757.

—*diphy'lla*. ¾. White, purple. May. N. Amer. B. M. t. 1463.

—*enneaphy'lla*. 1. Pale yellow. May. Austria. 1856.

—*glandulo'sa*. 1. Light purple. May. Hungary. 1815.

—*Killi'sii*. Hybrid between *D. digitata* and *D. polyphy'lla*. Alps. 1889.

—*lacini'a'ta*. 1. White. May. N. Amer. 1822.

—*ma'xima*. 2. Pale purple. May. N. Amer. 1823.

—*pentaphy'lla*. Pink. April to June. B. M. t. 2202.

—*pinna'ta*. 1. Pale purple. May. Switzerland. 1833.

—*pinna-to-digita'ta*. Hybrid. Jura Mountains. 1889.

—*polyphy'lla*. 1. Purple. May. Hungary. 1818. B. M. t. 6796.

—*quinquefo'lia*. 1. Purple. May. Tauria. 1820.

D. tenuifo'lia. 1. Light purple. May. Siberia. 1825.

—*trifo'lia*. 1. White. May. Hungary. 1824.

Depa'ria. (From *depas*, a cup; referring to the form of the involucre. Nat. ord., *Filices*—*Polypodiaceæ*.)

Stove ferns. See FERNS.

D. proli'fera. Sandwich Islands. Hook. Ic. Fil. ii. t. 154.

Depressa'ria. A genus of moths, the caterpillars of three species of which attack the carrot.

D. cicute'lla. — Common flat-body moth. This moth, rather less than an inch across, is of a pale, reddish-ochre colour, with darker and lighter dots. The posterior wings are yellowish-grey. The caterpillars (of which one brood appears in June and another in September) attack the leaves of the carrot, in which they roll themselves up. They are grass-green, with black spots and a brown head.

D. dauce'lla. Syn., *Tinea daucella*. — Carrot-blossom moth. Head, back, and upper wings reddish-brown, lower wings light grey; 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.

D. depress'e'lla. — Resembling *D. daucella*, but its caterpillars are smaller, brownish-grey, with white spots. It feeds on the seeds of the carrot.

The caterpillars can be removed by shaking from the plants, and destroyed immediately by application of lime. Care must be taken to prevent them from returning to the plants.

Desfontai'nia. (In honour of *M. Desfontain*, the French botanist. Nat. ord., *Loganiaceæ*; Tribe, *Euloganiæ*.)

A lovely hardy-evergreen shrub. Peat and loam. Cuttings in the same soil with the addition of sand in heat. A splendid greenhouse shrub.

D. spinosa. 3. Scarlet, yellow. August. Peru. 1853. B. M. t. 4781. Syns., *D. acutangula*, *D. Hookeri* and *D. splendens*.

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 *desmos*, a bundle, and *anthos*, a flower; referring to the arrangement of the flowers. Nat. ord., *Leguminosæ*.) A genus of stove herbs or shrubs, with pea-like flowers, allied to *Mimosa*, said to be attractive in their native wilds.

D. na'tans. Andr. Rep. t. 629. See *Neptunia oleracea*.
— *ple'nus*, *polyphy'llus* and *puncta'tus* are synonyms of *Neptunia plena*.
— *virga'tus*. White. W. and E. Indies. B. M. t. 2454. Syn., *Mimosa virgata*.

Desmo'dium. (From *desmos*, a band; alluding to the connected stamens. Nat. ord., *Leguminosæ*; Tribe, *Hedysaræ*.) See also **Dicerma**.

Stove and greenhouse shrubs, except when otherwise stated. Cuttings of young shoots in sand under a bell-glass in heat. Sandy loam

and leaf-mould. *D. gyrans* is the Moving or Telegraph Plant. See SENSITIVE PLANT.

D. adac'e'ndens caer'u'levum. Blue. Brazil. B. R. t. 815.
— *ala'tum.* 10. Purple. July. E. Indies. 1817. Syn., *D. triquetrum*.
— *biarticula'tum.* 2. Yellow. July. E. Indies. 1808.
— *canade'nse.* 6. Purple. July. N. America. 1640. Hardy. B. M. t. 3553.
— *du'vium.* Pale rose. July. Himalayas. B. M. t. 2960.
— *gy'rans.* 3. Violet. July. E. Indies. 1775. Wight Ic. t. 294.
— *japo'nicum.* White. Japan. 1875. Hardy.
— *latifo'lium.* Purple. China. Syn., *Hedysarum latifolium*. B. E. t. 355.
— *nu'tans.* Lilac. Summer. India. 1823. B. M. t. 2867.
— *pendu'licum.* G. C. 1883, xx. p. 748. See *See Lespedeza Sieboldii*.
— *podoca'rpum.* 2. Purple. July. Nepal.
— *pulche'rthum.* 3. Purple. July. E. Indies. 1798.
— *Skinne'r'i albo-ni'tens.* Purple; leaves whitish. B. M. t. 5452. Syn., *Rhynchosia albo-nitens*.
— *trique'trum.* See *D. alatum*.

Desmo'nus. (From *desmos*, a band, and *ogkos*, a hook; the ribs of the leaves ending in bands at the point, like tendrils. Nat. ord., *Palmeæ*; Tribe, *Cocoinæ*. Allied to *Cocos*.)

Very ornamental stove Palms. Seeds in a hot-bed; sandy loam.

D. aculea'tus. Guatemala. 1852.
— *america'nus.* 6. St. Vincent. 1824.
— *du'vius.* 6. Trinidad. 1824.
— *granate'nsis.* Columbia. 1875.
— *la'tifrons.* S. America. 1840.
— *ma'jor.* Trinidad.
— *mi'nor.* W. Indies.
— *orthaca'nthus.* 6. Brazil. 1822. Mart. Palm. tt. 69 and 98.
— *polyaca'nthus.* 6. Brazil. 1822. Mart. Palm. t. 68.

Desmo'trichum. A synonym of **Dendrobium**.

Deu'tzia. (Named after *J. Deutz*, a sheriff of Amsterdam. Nat. ord., *Saxifragæ*; Tribe, *Hydrangeæ*. Allied to *Philadelphus*.)

Very ornamental hardy deciduous shrubs. *D. sca'bra*, grown as a dwarf standard, and pruned like the black currant, or cutting out the shoots after flowering, forms a very striking object for a border of select shrubs. It is also a good subject for spring flowering for the conservatory. Cuttings under a hand-glass, or strong shoots may be planted in a sheltered place in autumn; common soil.

D. candidi'ssima. White. G. C. 1882, xviii. p. 173.
— *corymbo'sa.* 5. White. Himalayas. B. R. 1840, t. 5.
— *crena'ta flo're-ple'no.* White. Japan. 1863. Ill. Hort. 1864, p. 389.
— *gra'cilis.* White. April. Japan. Fl. Ser. t. 611.
— *fo'ltis au'reis.* Leaves golden. 1889.
— *parvis'tra amure'nsis.* 3. White. N. China. Gf. t. 370.
— *sangui'nea.* Red. April.
— *sca'bra.* 6. May. Japan. 1833. B. R. t. 1718.
— *stam'i'nea.* 3. White. April. Himalayas. 1841. B. R. 1847, t. 13.

Devil's Apples. *Mandragora officinalis*.

Devil's Bit. *Scabiosa succisa*.

Devil's Fig. *Argemone mexicana*.

Devil in the Bush. *Nigella*.

Devil's Leaf. *Urtica urentissima*.

Devonshiring. See **Paring and Burning.**

Dew-berry. *Rubus cæsius*.

Diacalpe. (From *dis*, two, or double, and *calpis*, an urn; referring to the disposition of the spore-cases, or seed-vessels. Nat. ord., *Filices*. Allied to *Woodsia*.)

Stove Fern. Division; peat and loam.

D. aspidioides. Yellow. July Java.

Dia'crium. (From *dia*, through, and *achris*, point. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Lælicæ*.)

A fine showy orchid. For culture, see EPIDENDRUM.

D. bicornutum. 1½. Pure white. Summer. Trinidad. Syn., *Epidendrum bicornutum*. B. M. t. 3332.

Diadæ'nium. (From *dis*, twice, and *aden*, a gland; the column has two glands at the base. Nat. ord., *Orchideæ*.)

Stove orchid. Offsets and divisions, placed in a very shallow basket with sphagnum, or tied to a block of wood, and suspended in a high temperature and moist atmosphere; cool and dry in winter.

D. Barkeri. Para. 1837. Syn., *Chænanthe Barkeri*.

Diane'lla. (A classical diminutive from *Diana*, the goddess of hunting; the first discovered species being found in a grove. Nat. ord., *Liliacæ*; Tribe, *Asphodeleæ*.)

Greenhouse or frame half-hardy perennials. Some of the species may be tried in a mixed border of half-hardy bulbs in front of a stove or greenhouse, with *Anthericum*, *Albus*, *Blandfordias*, *Cummingias*, and the like. All from Australia, and with blue flowers, except where otherwise specified. Seeds sown in a slight hot-bed in spring, and division; loam and peat.

D. cærulea. 2. June. 1733. B. M. t. 505.

— *congesta*. 2. June. 1820.

— *divaricata*. 3. July. 1835.

— *ensifolia*. 1½. White. August. E. Ind. 1731.

B. M. t. 1404.

— *lævis*. 2. August. 1822.

— *longifolia*. 2½. August. 1839. B. R. t. 734.

— *nemoralis*. 2. August. E. Ind. 1731. Jacq.

H. Schenb. t. 94.

— *revoluta*. 2. August. 1823. B. R. t. 1120.

— *strumosa*. 1½. March. 1822. B. C. t. 1136.

— *tasmanica*. Blue. Tasmania. 1866. Blue berries, ornamental.

Dianthe'ra. (From *dis*, in two parts, and *anthera*, an anther; the cells of the anther are more or less separated from one another. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*.)

Stove, greenhouse, or hardy herbs, requiring the same treatment as *JUSTICIA*.

D. americana. 1-3. Pale violet or white. Summer. United States. Syn., *Justicia pedunculosa*. B. M. t. 2367.

— *bullata*. Leaves purple beneath. Borneo. III. Hort. 1836, t. 539.

— *caracasana*. 5. Violet. May. Caraccas. 1822. Syn., *Justicia caracasana*. Jacq. Ic. t. 206.

— *ciliata*. 2. Purple, white. Winter. Venezuela. 1870. Syns., *Jacobinia* and *Beloperone ciliata*.

— *geniculata*. 2. Purple. June. W. Indies. Syn., *Justicia geniculata*. B. M. t. 2487.

— *lanceolata*. 3. Red. April. E. Indies. 1813. Syn., *Porphycocoma lanceolata*. B. M. t. 4176.

— *luccida*. 3. Scarlet. July. W. Indies. 1795. Syn., *Justicia lucida*. B. M. t. 1014.

— *nodosa*. Red. August. Brazil. 1820. Syn., *Justicia nodosa*. B. M. t. 2914.

— *Pohlina*. Purple; bracts red. Brazil. 1880. Syn., *Amphisopia Pohlina*.

Dianthoides is now regarded as a section of **Gilia**.

D. dianthiflora. See *Gilia dianthoides*.

Dianthus. (From *dios*, divine, and *anthos*, a flower. Nat. ord., *Caryophyllaceæ*; Tribe, *Sileneæ*.)

Seeds, divisions, and cuttings, under a hand-light, in light soil, any time after 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. aggregatus. 1. Pink. June. 1817. Biennial.

Swt. Fl. Gard. ser. 2, t. 166.

— *Armeria*. 1. Red. June. England.

— *armerioides*. 1. Red. June. New Jersey. 1826.

— *chinensis*. 1. Red. July. China. 1713.

Biennial. B. M. t. 25.

— *Atkinsoni*. Blood-red. Garden hybrid.

Garden, Jan. 12, 1884.

— *marginalis*. 1. White. July. South Europe.

1820. Biennial.

— *prolifer*. ¾. Pink. July. England. Sibth.

Fl. Gr. t. 394.

— *pubescens*. 1. Red. July. Greece. 1820.

Swt. Fl. Gard. ser. 2, t. 27.

— *velutinus*. Red. May. Calabria. 1837.

HALF-HARDY PERENNIALS.

D. albens. ¾. White. August. Cape of Good

Hope. 1787.

— *arborescens*. 1½. Pink. July. Greece. 1820.

Evergreen. B. C. t. 459.

— *arbuscula*. 1½. Red. July. China. 1824.

Evergreen. B. R. t. 1036.

— *crenatus*. 1. Flesh. August. Cape of Good

Hope. 1817.

— *glutinatus*. ¾. Pink. July. Europe.

— *juniperinus*. Red. July. Greece. 1825.

HARDY PERENNIALS.

D. alpestris. ¾. Red. June. Europe. 1817.

— *alpinus*. ¾. Red. June. Austria. 1759.

B. M. t. 1205.

— *glacialis*. See *D. glacialis*.

— *arenarius*. 2. Purple. August. Europe.

B. M. t. 2038.

— *asper*. ¾. Pink. July. Switzerland. 1822.

— *atro-rubens*. 1. Crimson. August. Italy.

1802. B. M. t. 1775.

— *attenuatus*. ¾. Red. July. Spain. 1822.

— *Balbi'sii*. Swt. Fl. Gard. ser. 2, t. 23.

— *barbatus*. 1½. Pink. July. Germany. 1573.

B. M. t. 207.

— *latifolius*. 1½. Scarlet. July. 1826.

- D. bi color.* 1. Pink. July. Tauria. 1816.
- biflorus. Red. June. Greece.
- Bisigna'ni. See *D. rupicolaus*.
- brachyanthus. $\frac{1}{2}$. Pink. June. Spain. 1851.
- bre'vis. Red. June. Jurassa.
- buchtormensis. 1. Red. July. Russia. 1826.
- caesus. $\frac{1}{2}$. Flesh. July. Britain.
- calli'zorus. $\frac{1}{2}$. Bright rosy pink. July. Transylvania. 1890.
- campe'stris. 1. White, red. August. Tauria. 1815. B. M. t. 1376.
- capita'tus. $1\frac{1}{2}$. Purple. August. Caucasus. 1822.
- carolinia'nus. 1. Purple. June. N. Amer. 1811.
- carthusiano'rum. $1\frac{1}{2}$. Red. July. Germany. 1573. B. M. t. 2039.
- sabuleto'rum. Red. Banat.
- caryophylloides. 1. Red. June. 1817.
- Caryophyllus. 2. Flesh. June. England. B. M. t. 39, 1622 and 2744. Clove Carnation.
- flo're-plé'no. 2. Crimson. August. England.
- fruticosus. 3. Crimson. July. England.
- imbricat'us. $1\frac{1}{2}$. Flesh. August. England.
- caucas'icus. 1. Purple. July. Caucasus. 1803. B. M. t. 795.
- cephalotes. $1\frac{1}{2}$. Pink. July. 1823.
- cilia'tus. $1\frac{1}{2}$. Pink. July. Naples. 1829.
- cinnamomeus. 1. Flesh. June. Greece.
- cinnam'us. Crimson. Japan. 1864.
- clava'tus. 1. Flesh. July.
- colli'nus. $\frac{3}{4}$. White. August. Hungary. 1800. Salis. Parad. t. 62.
- Courtot'sii. A fine hybrid between *D. superbus* and *D. barbatus*.
- crue'ntus. $1\frac{1}{2}$. Deep scarlet. E. Europe. Fl. ser. t. 488.
- Cy'ri. Red. June. Natolia. 1843.
- deltoi'des. $\frac{3}{4}$. Flesh. June. Britain.
- denta'tus. 1. Red. July. Siberia. 1826.
- diffr'us. $1\frac{1}{2}$. Red. July. Cyprus. 1820.
- dimini'tus. $\frac{1}{2}$. Pink. July. South Europe. 1771.
- di'scolor. 1. Pink. August. Caucasus. 1803. B. M. t. 1162.
- diruti'nus. Red. June. Hungary. 1820.
- divaricat'us. 1. Purple. August. Greece. 1822.
- du'bius. White, rose. May.
- e'legans. Red. June. Levant. 1825.
- erube'scens. Blush. July. Pyrenees. 1825.
- ferrugi'neus. Brown. July. Italy. 1756. Maund Bot. i. t. 22.
- sulphureus. $1\frac{1}{2}$. Sulphur. August. Italy. 1836.
- imbricat'us. $1\frac{1}{2}$. Brown. July. Iberia. 1815. Syn., *D. orientalis*, B. M. t. 1069.
- Fische'ri. 1. Red. June. Russia. 1820. Swt. Fl. Gard. t. 245.
- alb'us. $1\frac{1}{2}$. White. August. Gardens. 1830.
- floribu'ndus. 1. Rosy-pink. Hybrid. 1883.
- flav'grans. 1. White. August. Austria. 1804. B. M. t. 2067.
- fruticosus. 2. Pink. July. Greece. 1815.
- furca'tus. 1. Pale red. July. Piedmont. 1819.
- gallicus. $\frac{3}{4}$. Purple. August. South France.
- gelidus. $\frac{1}{2}$. Purple. June. Transylvanian Alps.
- giga'nteus. 3. Purple. August. Greece. 1824. Swt. Fl. Gard. t. 288.
- glacia'ris. $\frac{1}{2}$. Red. June. South Europe. 1820.
- glaucophyllus. $1\frac{1}{2}$. Red. July. 1827.
- glauc'us. $\frac{1}{2}$. White. June. Britain.
- Greiva'i. 1. Pink, white. Hybrid between *D. alpinus* and *D. barbatus*.
- gutta'tus. 1. Red. July. Caucasus. 1816.
- D. Hendersonia'nus.* 1. Crimson. July. Paxt. Mag. xiv. p. 126.
- hi'rtus. 1. Red. July. France. 1821.
- Hoeltze'ri. Pink. Turkestan. Gfl. t. 1032.
- Hornema'nii. 1. Red. August. Italy.
- hort'e'nsis. 1. Red. July. Hungary. 1805.
- hyssopifolius. $\frac{3}{4}$. Pink. August. Europe. 1810.
- ibe'ricus. $\frac{1}{2}$. Purple. July. Iberia. 1817.
- japo'nicus. 1. Pink. June. China. 1804.
- latifo'lius. $1\frac{1}{2}$. Pink. June.
- leptoc'yalus. $1\frac{1}{2}$. White. June. Caucasus. 1814. B. M. t. 1739.
- libano'tis. 4. White. July. Lebanon. 1830. B. R. t. 1548.
- Liboschitzia'nus. $\frac{1}{2}$. White. July. Tauria. 1817.
- libu'nicus. 1. Red. August. S. E. Europe. 1817.
- Kna'ppi. 1. White, purple. July. Montenegro.
- longicaul'is. 1. White. August. Italy. 1820.
- monade'lyphus. 1. White, pink. August. Levant.
- monspessulana'nus. 1. Red. July. Montpellier. 1764.
- mont'anus. $\frac{3}{4}$. Red. July. Caucasus. 1803.
- multipuncta'tus. Spotted. June. Levant. 1825.
- Mussi'ni. $\frac{1}{2}$. White. June. Caucasus. 1823.
- na'nus. $\frac{1}{2}$. Crimson. August. Switzerland. 1820.
- negle'ctus. $\frac{1}{2}$. Deep rose. Summer. S.W. Europe. 1809.
- ni'tidus. 1. Red. July. Carpathia. 1822.
- ochroleu'cus. Yellow. June. Levant. 1821.
- orienta'lis. See *D. fimbriatus*.
- pallida'rus. 1. Purple. July. Siberia. 1817.
- petra'eus. White. July. Hungary. 1804. B. M. t. 2104.
- floribus majoribus. $\frac{1}{2}$. Pink. June. 1804.
- pluma'rius. 1. White, purple. Summer. E. Europe. 1629. Garden pink, pheasant's eye.
- sco'ticus flo're-plé'no. Garden variety. 1888.
- Poirétia'nus. 1. Purple. August. 1816.
- flo're-plé'no. 1. Purple. April. Greece. 1820.
- polyano'rphus. 1. Red. March. Crimea. 1822.
- pomeridia'nus. 1. Yellow. July. Levant. 1804.
- pluma'rius. $\frac{1}{2}$. White, purple. July. South Europe. 1629.
- plumo'sus. $1\frac{1}{2}$. White, lilac. June. Mt. Baldo.
- prate'nsis. 1. White, yellow. August. Crimea. 1820.
- prostra'tus. $\frac{1}{2}$. Red. September. Cape of Good Hope. 1824. Evergreen. Jacq. H. Schoenb. t. 271.
- pseu'do-arme'ria. 1. Purple. August. Crimea. 1820. B. M. t. 2288.
- pulche'rillus. 1. White, red. June. Siberia. 1872.
- puncta'tus. 1. Pale lilac. August.
- pu'ngens. 1. Pink. August. Spain. 1781.
- re'pens. Red. Siberia. 1825.
- rigidus. $\frac{3}{4}$. Red. July. Caspian Sea. 1802.
- rupicola'us. 1. Red. June. Italy. 1820. Syn., *D. Bisignani*, B. R. 1833, t. 29.
- ruthe'nicus. 1. Purple. June. Russia. 1816.
- saxa'tilis. $\frac{1}{2}$. White. June. South Europe. 1816.
- Segute'ri. Switzerland. 1832. Evergreen.
- sero'tinus. 1. Purple. August. Hungary. 1804.
- sicu'lus. 1. Red. August. Sicily. 1829.

- D. spinosus*. 2. Pink. July. Mount Lebanon. 1831.
 — *squarrosus*. $\frac{1}{2}$. White. June. Tauria. 1817.
 — *Sternbergii*. $1\frac{1}{2}$. Red. June.
 — *suaveolens*. 1. White. August. 1820.
 — *suavis*. 1. Pink. July.
 — *subacaulis*. $\frac{1}{2}$. Pink. June. Delph.
 — *suffruticosus*. $1\frac{1}{2}$. Pink. August. Siberia. 1804. Evergreen.
 — *superbus*. 2. White. August. Europe. 1596. B. M. t. 297.
 — *Gardneri*. Petals laciniate. China.
 — *syboticus*. $1\frac{1}{2}$. Red. June. Ratisbon. 1815.
 — *sylvestris*. 1. Red. July. South Europe. 1732.
 — *tauricus*. 1. Pink. July. Tauria. 1831.
 — *tenneri*. $\frac{1}{2}$. Red. August. Europe. 1817.
 — *umbellatus*. Red. July. 1825.
 — *versicolor*. $1\frac{1}{2}$. Red. August. Russia. 1823.
 — *virginicus*. 1. Red. June. Montpellier. 1816. B. M. t. 1740.
 — *viscidus*. $1\frac{1}{2}$. Red. July. Greece.
 — *Walstedtii*. 1. Pink. July. Carinthia.

Diapensia. (From *dis*, two, or twice, and *pente*, five; five sepals compose the calyx, and five stamens with petal-like filaments. Nat. ord., *Diapensiaceæ*; Tribe, *Diapensiaceæ*.)

An extremely rare alpine prostrate dwarf under-shrub, from Lapland. Seeds or division of the plant. It requires a sandy peaty soil in a shady situation.

D. barbatula and *cuneifolia*. See *Pyxidantha barbatula*.

— *lapponica*. $\frac{1}{2}$. White. July. Alps of Lapland and Norway. 1801. B. M. t. 1168.

Diascia. (From *diaskeo*, to adorn; on account of their pretty flowers. Nat. ord., *Scrophulariaceæ*; Tribe, *Hemimerideæ*. Allied to *Nemesia*.)

Greenhouse annual. Seeds in a slight hothed in spring; in May or June they may be planted out like *Lobelias*, and make useful bedding plants. Light sandy loam.

D. Barbæra. 1. Rose-pink. July. S. Africa. 1871. B. M. t. 5933.

Diastella vacciniifolia. See *Mimetes vacciniifolia*.

Diastema. (From *dis*, two, and *stemon*, a stamen. Nat. ord., *Gesneraceæ*; Tribe, *Gesnerææ*. Allied to *Iso-loma*.)

Stove herbaceous perennials. Divisions; cuttings of young shoots, when two or three inches in length, after commencing to grow; peat and loam.

D. Lehmanni. White, violet. New Grenada. 1888.

— *ochroleucum*. 1. Yellow. August. New Grenada. 1844. B. M. t. 4254.

— *pectata*. $\frac{3}{4}$. White, purple. Andes of Columbia. 1888.

— *quinquevulnerum*. White, pink. August. New Grenada. Fl. Ser. t. 832.

Dibber, or Dibble. This instrument for making holes in which to insert bulbs 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, however, in planting beans, etc., by this instrument, it is use-

ful to have it perforated with holes to receive an iron peg, at two and three inches from the point, as in the annexed outline. 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.

Dibblemma. (Derivation not known. Nat. ord., *Filices*—*Polypodiaceæ*.)

A stove Fern, now united with *POLYPODIUM*. Division; peat and loam.

D. samarensis. E. Indies.

Dibra'chion. See *Homalanthus*.

Dicentra'nthera. A synonym of *Asystasia*.

Dice'rma. (From *dis*, two, and *erma*, a prop; referring to the two bracteoles under the flower. Nat. ord., *Leguminosæ*; United by some authorities to *Desmodium*.)

Stove and greenhouse evergreens, with yellow flowers. Seeds in hothed, in March; cuttings of half-ripened shoots in sand, under a bell-glass, in bottom-heat, in April or May; peat and loam.

D. biarticulatum. 2. July. E. Ind. 1868. Wight Ic. t. 419.

— *elegans*. 1. July. China. 1819.

— *pulchellum*. 1. July. E. Ind. 1798. Wight Ic. t. 418.

Dice'ntra. (From *dis*, twice, and *kentron*, a spur; in allusion to the shape of the flower. Nat. ord., *Fumariaceæ*; Ssyns., *Dactylicapnos* and *Diclytra*, or *Dielytra*.)

D. spectabilis is one of the most brilliant hardy plants 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, fecun-

dation is effectually and simply brought about. This beautiful plant was described by Linnaeus from dried specimens, but was not seen alive by any European until Mr. Fortune found it in gardens in Japan, and sent it, in 1846, to the London Horticultural Society. It is a spring-flowering, herbaceous plant, with large fleshy roots; the stalks and leaves rise to eighteen inches or two feet, and look like a small-leaved tree-peony; the flowers are produced on spikes from four to six inches long, and hanging 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. All hardy herbaceous, and flowering in June; the same culture is applicable to all the species.

- D. bracteosa*. 1. White. N. America. 1823.
 — *canadensis*. $\frac{1}{2}$. White. May. N. America. 1822. B. M. t. 3031.
 — *chrysantha*. 3. Bright yellow. California. 1852.
 — *cucullaria*. $\frac{1}{2}$. White, tipped yellow. May. United States. 1731. Fl. Ser. t. 920.
 — *eximia*. 1. Reddish-purple. Summer. United States. 1812. Syn., *Fumaria eximia*. B. R. t. 50.
 — *formosa*. $\frac{1}{2}$. Bright red. May. N. America. 1796. Syn., *Fumaria formosa*. B. M. t. 1335.
 — *scandens*. Pink, white. Syn., *Dielytra scandens*.
 — *speciosa*. 1. Flesh-coloured. 1810. Syn., *Dielytra speciosa*.
 — *spectabilis*. 2. Rosy-purple. Siberia. 1810. Also found in Japan.
 — *tenuifolia*. 1. Pink. Kamtschatka. 1820. Syn., *Dielytra tenuifolia*.
 — *thalictrifolia*. 3. Yellow, brown. August. Nepal. 1831. Syn., *Dactylicapnos thalictrifolia*. Swt. Fl. Gard. ser. 2, t. 127.

Dichæ'a. (From *dicha*, bifarious; the leaves are in two rows. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Maxillariææ*.)

Stove epiphytes. For cultivation, see ORCHIDS.

- D. picta*. Green, purplish dotted. Trinidad. 1870.
 — *vagina'ta*. Mexico. 1884.

Dichilus. (From *dis*, two, and *cheilos*, a lip; in reference to two divisions of the calyx being longer than the rest. Nat. ord., *Leguminosææ*; Tribe, *Genistææ*. Allied to *Crotalaria*.)

Greenhouse evergreen. Cuttings of young shoots getting firm at the base, in sand, under a bell-glass; sandy peat.

- D. lebeckoides*. 2 $\frac{1}{2}$. White, yellow. April. Caps of Good Hope. 1826.

Dichopogon. (From *dicha*, a part, and *pogon*, a beard. Nat. ord., *Liliacææ*; Tribe, *Asphodeleææ*.)

Greenhouse bulb.

- D. strictus*. $\frac{1}{2}$. Purple. Scent like Heliotrope. June. E. Australia and Tasmania. B. M. t. 6746.
 — *undulatus*. Gf. ii. t. 37. A synonym of *D. strictus*.

Dichopsis. (Derivation not stated. Nat. ord., *Sapotacææ*.)

A stove evergreen tree, propagated by seeds and cuttings, requiring stove treatment, and light soil, consisting of sandy peat and fibry loam.

- D. gutta*. Borneo. 1847. Syn., *Isonandra gutta*.

Dichorisa'ndra. (From *dis*, twice, *chorizo*, to part, and *aner*, an anther; referring to the anthers being two-celled. Nat. ord., *Commelinacææ*; Tribe, *Tradescantiææ*. Allied to *Campelia*.)

D. thyrsoiflora 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 plants, when growth is commencing; seeds sown in a hotbed in spring; peat and loam, with sand and leaf-mould.

- D. albo-marginata*. S. America. 1861.
 — *at'scolor*. September. 1848.
 — *gracilis*. $\frac{1}{2}$. Blue. August.
 — *leucophthalma*. Blue and white. June. Brazil. B. M. t. 4733.
 — *musica*. Blue, white; leaves white-lined, like mosaic work. Maynas. 1866.
 — *ovalifolia*. Purple. May. 1846.
 — *ovata*. Blue, yellow. August. Brazil. 1847. Paxt. Mag. xv. t. 5.
 — *oxyple'tata*. 2. Red. August. 1810.
 — *picta*. $\frac{1}{2}$. Blue. September. 1830. B. M. t. 4760.
 — *puberula*. 3. Blue. August. 1823.
 — *pubescens tenuis*. Blue, white; leaves striped white. Brazil. 1888. G. C. 1888, iii. p. 557. Syn., *D. pubescens*, var. *talmiensis*.
 — *Saundersonii*. 2. White, violet. July. Brazil. 1873.
 — *thyrsoiflora*. 4. Blue. August. 1822. B. R. t. 682.
 — *undata*. Leaves undulated, striped with silver-gray. Amazon. 1879.
 — *vittata*. Leaves purplish-green, with two silvery stripes. Brazil. 1871.

Dicho'sma. A synonym of *Agathosma*.

Dichrosta'chys. (From *dichra*, two-form, and *stachys*, a spike. Nat. ord., *Leguminosææ*; Tribe, *Adenantheræææ*.)

Stove shrub. For cultivation, see MIMOSA.

- D. platycarpa*. Rose, yellow; spikes half pink half yellow-flowered. Angola. 1866.

Dichrotri'chium. (From *dichroos*, having two colours, and *thrix*, a hair; the tuft of hairs at each end of the seed in the original species are differently coloured. Nat. ord., *Gesneracææ*.)

Stove shrub, with the habit of *ÆSCHYNANTHUS*. Cuttings in sandy soil, in bottom-heat, and under a bell-glass. Loam and peat, mixed with bits of charcoal, well drained.

- D. ternateum*. Crimson. Ternate. 1872. B. M. t. 6791.

Dickson'nia. (Named after James Dickson, a British botanist, who studied this order. Nat. ord., *Filices*. See also *Cibotium* and *Sitobium*.)

A large genus of handsome stove and greenhouse ferns, many of them trees. Light fibrous loam, peat, and sand is the best compost. Di-

vision of the roots; best done when growth is commencing; peat and loam.

- D. adiantoides*. 2. November. W. Ind. 1828. Hook. Sp. Fil. t. 26. Syn., *Sitobium adiantoides*.
 — *antarctica*. September. Australia. 1824. Syn., *Cibotium Billardieri*.
 — *arborescens*. 15. September. St. Helena. 1786.
 — *Ba'rometz*. See *Cibotium Barometz*.
 — *Berteroana*. 12. Juan Fernandez. 1880. Hook. Sp. Fil. t. 23.
 — *Billardieri*. A synonym of *D. antarctica*.
 — *chryso'tricha*. Java. 1875.
 — *cicutaria*. W. Indies.
 — *cinnamo'mea*. Australia. 1865.
 — *cu'lcitra*. 3. August. Madeira. Syn., *Balan-tium culcitum*.
 — *davallioides*. 3. September. N. Holland. Syn., *Sitobium davallioides*.
 — *Depla'nchei*. New Caledonia. 1876.
 — *fla'ccida*. April. Isle of Luzon. Syn., *Sitobium flaccidum*.
 — *disse'cta*. 3. August. Jamaica. 1792.
 — *glutinosa*. April. E. Indies. Syn., *Sitobium glutinosum*.
 — *landa'ta*. New Zealand. Hook. Sp. Fil. t. 23.
 — *Latha'mi*. 14. Garden hybrid between *D. antarctica* and *D. arborescens*. 1885.
 — *pilosius'cula*. 2. August. N. America. 1811. Syn., *Sitobium pilosiusculum*.
 — *pubescens*. 6. New Grenada. Syn., *Sitobium punctilobium*.
 — *rubiginosa*. Brazil. Hook. Sp. Fil. t. 27. Syn., *Sitobium rubiginosum*.
 — *scandens*. Java.
 — *Sellowiana*. Brazil. 1871.
 — *squamosa*. New Zealand.
 — *squarrosa*. New Zealand.
 — *You'ngii*. Australia. 1865. Syn., *Denn-stædtia davallioides*, var. *Youngii*.

Dieli'ptera. (From *dis*, twice, and *kleio*, to shut; referring to the two-celled capsule, or seed-vessel. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*. 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 fibry, with a little leaf-soil.

STOVE ANNUALS.

- D. hexangul'aris*. 2. Red. July. S. America. 1733.
 — *resupina'ta*. 1½. White, purple. March. S. Amer. 1805.

GREENHOUSE PERENNIALS.

- D. chine'nsis*. Pale blue. September. E. Ind. 1816. Herbaceous.
 — *Tweedia'na*. Orange-red. Autumn. Monte Video. 1874. Rev. Hort. 1874, p. 171.
 — *verticilla'ris*. See *Hypocistes verticillaris*.

STOVE EVERGREENS, ETC.

- D. assu'rgens*. 2. Red. July. W. Ind. 1818.
 — *biva'lvis*. ½. Purple. June. E. Ind. 1818.
 — *martine'e'nsis*. 2. Purple. July. W. Ind. 1818. Syn., *Justicia martinicensis*, Jacq. Vind. iii. t. 22.
 — *pectina'ta*. See *Bungia pectinata*.
 — *peruvia'na*. 2. Purple. June. Peru. 1818.
 — *retu'sa*. 2. Purple. July. W. Ind. 1821. Herbaceous. A synonym of *Amphisco'pia retusa*.
 — *scorpioi'des*. See *Dregera Wildenowiana*.
 — *spino'sa*. A synonym of *Barleria lupulina*.

Dicranu'ra vi'nula. Syn., *Cerura vinula*. The Puss Moth. The cater-

pillar of this insect attacks Poplars and willows, feeding on their leaves. It is about two inches long, purplish-brown striped with white above, and greenish beneath, these colours much resembling the twigs upon which they live. The moths appear about June, and are white and grey with black marks, and a general downy appearance. The size of the caterpillars allows of their being destroyed by hand-picking.

Dicry'pta Bau'e'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., *Rutaceæ*; Tribe, *Ruteæ*.)

This is one of the oldest and best border-plants. Instances are known where the Fraxinella has outlived father, son, and grandson in the same spot. Difficult to increase by division, but easily raised 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. 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. It is called the burning bush, the stems being covered with a resinous exudation which burns fiercely when a light is applied. Evening time is the best to see it.

- D. al'bus*. 3. White. May. Germany. 1598.
 — *angustifo'lius*. 9. Lilac. Altai. 1821. Swt. Fl. Gard. ser. 2, t. 93.
 — *fraxine'lla*. 3. Purple. Germany. 1596.
 — *himalaye'nsis*. 2. Purple. May. Himalayas.

Dictya'nthus. (From *dictyon*, network, and *anthos*, a flower; alluding to the markings on the corolla. Nat. ord., *Asclepiadaceæ*; Tribe, *Gonolobeæ*.)

Stove climber. For culture, see PASSIFLORA.
D. Pavoi'ni. 10. Green, brown. September. New Spain. 1864. B. M. t. 4750.

Dicty'mia. (From *dictyon*, a net; alluding to the form of the venation. Nat. ord., *Filices*—*Polypodiaceæ*.)

Greenhouse fern. See FERNS.
D. attenua'ta. Australia. 1828.

Dictyoca'ryum. (From *dictyon*, network, and *karyon*, a nut. Nat. ord., *Palmeæ*.)

Stove palm.
D. Walli'sii. Columbia. 1880.

Dictyoglo'ssum. See *Acrostichum crinitum*.

Dictyogra'mma. See *Gymnogramma*.

Dictyo'psis Thunbe'rgii. See *Hydonome reticulata*.

Dictyo'pteris. (From *dictyon*, network, and *pteris*, a Fern; referring to the leaves, or fronds.)

Greenhouse Ferns. See FERNs.

- D. attenuata*. June. Australia.
— lanceolata. June. Mauritius. 1824. Stove.
— macrodonata. May. Australia. 1840.
— pteroides. June. Australia. 1842.

Dictyoxiphium. (From *dictyon*, a net, and *xiphos*, a sword; having sword-shaped fronds with netted veins. Nat. ord., *Filices—Polypodiaceæ*.)

Stove fern. See FERNs.

- D. panamense*. 1. Panama.

Didiscus cœruleus. B. M. t. 2875. See *Trachymene cœrulea*.

Didymocarpus. (From *didymos*, double, and *carpos*, fruit; referring to a double division along the centre of the seed-vessel. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreae*. Allied to *Chirita*.)

This must not be confounded with its ally, *Streptocarpus*. Stove herbaceous perennials. Division; cuttings of young shoots, when commencing growth, in sandy soil, in bottom-heat; peat and loam, with sand, a little turf-mould, and rotten cow-dung.

- D. crinitus*. 1. White, yellow. July. Paulo Penang. 1845. B. M. t. 4554.
— Humboldtiana. Lilac. October. Ceylon. B. R. t. 4757.
— polyanthus. Wien. Gart. Zeit. 1885, p. 128.
— primulaefolia. †. Lilac. November. Ceylon. 1858. B. M. t. 5161.
— Rexii. B. M. t. 3005. See *Streptocarpus Rexii*.

Didymochlæna. (From *didymos*, double, and *chlaina*, a cloak; referring to the coverings of the spore-cases, called seed-vessels. Nat. ord., *Filices*.) Handsome stove Ferns. Divisions; peat and loam.

- D. pulcherrima*. July. Brazil.
— truncatula. 4. June. Brazil. 1838. Syn., *D. sinuosa*.

Didymopanax. (From *didymos*, double, and *Panax*; in allusion to the didymous fruit. Nat. ord., *Araliaceæ*. Allied to *Fatsia*.)

A fine stove or greenhouse tree. For cultivation, see PANAX.

- D. Houletii*. Mexico. 1869. Rev. Hort. 1854, p. 109.

Didymosperma. (From *didymos*, double, and *sperma*, a seed; the seeds however are solitary. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

Stove palms. For culture, see ARECA.

- D. n. num.* 1-3. Pinkish. Winter. Assam. 1874. B. M. t. 6836.
— porphyrocarpon. 4-8. White. Winter. Rhizome creeping. Java.
— tremulum. 3-4. Whitish. Winter. Philippine Islands.

Dieffenbachia. (Named after Dr. Dieffenbach, a German botanist. Nat. ord., *Aroidæ*; Tribe, *Dieffenbachieæ*.)

Stove evergreen perennials, with bold and often handsomely variegated foliage. Rich loam and peat. Suckers, or portions of the stem struck in bottom-heat under a hand-glass.—Cul-

tivators should be very careful not to put any part of any of these plants in the mouth, as the poisonous and exceedingly acrid juice produces intense pain, and causes the tongue to swell so as to render speech impossible, on which account *D. Ssguine* is called the Dumb-cane, having been used by slave-owners to punish their slaves, by causing them to bite it.

- D. alliodora*. 2. Spathe green; spadix white. Columbia? 1871.
— amabilis. Leaves bright green, mottled with yellow-green. Tolima. 1876.
— amazonica. Leaves green, with feathery-white band and yellowish-white spots. Amazona. 1872.
— amœna. Leaves blotched with white and yellow. Tropical America. 1880.
— antioquiensis. Leaves deep green, blotched with yellow. Columbia. 1875. Ill. Hort. n. s. t. 192.
— Baraquintana. Petiole and midrib white. Brazil. 1863. Syn., *D. Verschaffeltii*.
— Bau'sei. Leaves yellowish-green, spotted dark green and white. Garden hybrid. Ill. Hort. n. s. t. 338.
— Bowma'ni. Leaves pale green, blotched with dark green. Brazil. 1871.
— brasiliensis. Leaves mottled with greenish-yellow and white blotches. Brazil. 1872.
— Carderi. Leaves dark green, variegated. Columbia. 1880.
— chelso'ni. Leaves blotched with yellow-green midrib with a feathered grey band. Columbia. 1877.
— costata. Leaves velvety-green, midrib ivory-white. Venezuela. 1860.
— decora. Para. 1868.
— delé'cta. Leaves variegated with white. Columbia. 1880.
— eburnea. Leaves light green, spotted with white. Brazil. 1868.
— gigantea. Cream-spotted. Brazil. 1864.
— grandis. Green-mottled. Brazil. 1864.
— illu'stris. Leaves blotched with yellow-green. Tolima. 1876.
— imperator. Leaves olive-green, marbled pale yellow and white. Columbia. 1881.
— imperialis. 3. Leaves dark green, with yellow spots; midrib greyish. S. America. 1871.
— insigne. Leaves dark green, spotted yellow; midrib grey. Columbia. 1881.
— Jemma'ni. Leaves pea-green. British Guiana. 1884.
— lanceola. Leaves with feathery whitish central band. Columbia. 1876.
— lancifolia. Leaves blotched with yellow and green. Brazil. 1875.
— latimaculata. Leaves clouded with yellowish-green. Brazil. 1871.
— illu'stris. Leaves blotched with whitish-green and yellowish-green. Brazil. 1876.
— lineata. Columbia. 1853.
— liturata. Spathe glaucous-green. Tropical America. 1852.
— maculosa. Leaves blotched with creamy-white. Columbia. 1876.
— magnifica. Leaves dark green, variegated with white. Venezuela. 1883. Ill. Hort. t. 482.
— majestica. Leaves dark green, variegated with yellow; midrib silvery. 1882.
— marmorata. Leaves splashed and spotted with creamy-white. Columbia. 1877.
— me'dio-pi'cta. Brazil. 1869.
— mirabilis. Brazil. 1868.
— nitida. Leaves dark green, blotched yellowish-green. Columbia. 1881.
— nobilis. Leaves with central grey band, and yellowish-green patches. Brazil. 1869.

- D. Parlato' rei*. Spathe green. Columbia
 — *marmo' rea*. Leaves blotched with greenish-white. Antioquia. 1878. Ill. Hort. n. s. t. 201.
 — *Pea' rcei*. Leaves light green, spotted creamy-white. Ecuador.
 — *pi' cta*. Spathe green; leaves white spotted. August. Tropical America. 1820. Syn., *Caladium maculatum*.
 — *pr' inceps*. Leaves dark green, spotted yellow and silvery-grey. Brazil. 1868.
 — *reg' na*. Leaves greenish-white, mottled darker green. S. America.
 — *re' x*. Leaves velvety green, with lighter green spots. 1880.
 — *robu' sta*. Spathe yellowish-green. Tropical America. 1854.
 — *Segui' ne*. 6 Whitish. Spring. W. Indies. Syn., *Caladium Seguine*.—The Dumbcane.
 — *Shuttlewo' rthii*. Leaves with a feathery white band along the midrib. Columbia. 1878.
 — *specio' sa*. Leaves dark green, striped silvery grey, purplish beneath. 1882.
 — *specta' bilis*. Brazil. 1864.
 — *spte' ndens*. Leaves bottle-green, with white striated blotches and white midrib. Columbia. 1880.
 — *triu' mphans*. Leaves dark green, blotched yellowish-green. Columbia. 1881.
 — *veluti' na*. Leaves satiny green, with white petioles. Columbia. 1877.
 — *Verschaffe' llii*. See *D. Baraquiviana*.
 — *vitta' ta*. Leaves greyish-green, with two feathery white bands. Tolima.
 — *Walli' si*. Leaves with some blotches and a feathered central band of greyish-white. Columbia. 1870.
 — *We' rrii*. Leaves marbled with yellow. Brazil. 1866.

There are also some garden hybrids, as *D. nebulosa*.

Diely'tra. See Dicentra.

Diervi'la. (Named after *M. Dierville*, a French surgeon. Nat. ord., *Caprifoliaceæ*; Tribe, *Lonicereæ*. Allied to *Leycesteria*.)

Very handsome hardy shrubs. Best known in gardens under their synonym of *WEIGELIA*. Suckers from the roots; cuttings in the open ground, in autumn; rich garden-soil, exposed situations.

- D. ama' bilis*. Fl. Ser. t. 855. See *D. hortensis*.
 — *canade' nsis*. 3. Yellow. June. N. America. 1789. Syns., *D. humilis*, B. M. t. 1796, *D. lutea*, and *D. trifida*.
 — *floribu' nda*. 3. Reddish-purple. June. Japan. 1863. Ill. Hort. 1863, t. 383. Syn., *D. multiflora*.
 — *grandiflo' ra*. 8. Pink. Summer. Japan.
 — *Iaoli' noe*. White, yellow. Fl. Ser. t. 1445.
 — *stri' ata*. Red and white striped. Fl. Ser. t. 1446.
 — *Vanhou' ttei*. White, rose. Fl. Ser. t. 1447.
 — *variega' ta*. Leaves variegated. Fl. Ser. t. 1189.
 — *horte' nsis*. 5. Pink. Japan. Syns., *D. amabilis* and *Weigelia amabilis*.
 — *ni' vea*. White. 1884.
 — *japo' nica*. See *D. versicolor*.
 — *Middendorfi' na*. Yellowish-white. Siberia. 1854. Fl. Ser. t. 1137.
 — *multiflo' ra*. See *D. floribunda*.
 — *ro' sea*. 6. Rosy or white. China. 1844
 — *na' na*. Dwarf.
 — *na' na au' rea*. Leaves golden.
 — *Stelzne' ri*. Purplish red.
 — *tri' fida*. See *D. canadensis*.
 — *sessilifolia*. Yellow. E. United States. 1888.

- D. versicolor*. 8. Rosy. April. China. 1884. Syns., *D. japonica* and *Weigelia rosea*.
 — *a' lba*. White. May. Japan. This is probably the same as *Weigelia candida*.

Diete'ria. See *Aster*.

Die'tes. See *Iris*.

Digging with the spade or fork has for its object pulverization of the soil and the mixing-in of manures 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 soil to the corner 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 fresh long 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.—(*Mauve*.) 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.

Digitalis. Foxglove. (From the Latin *digitale*, a finger-stall; referring to the shape of the flowers. Nat. ord., *Scrophulariaceae*; Tribe, *Digitaleæ*.)

Hardy herbaceous biennial and perennial plants. The seeds should be sown in the autumn; in the open ground, or in spring in pits. Division; and most of them plentifully by seeds; common soil.

BIENNIALS.

- D. eriosta'chya*. 3. Brown, yellow. July. Russia. 1827.
 — *ferrugi'nea*. 4. Brown. July. Italy. 1597. B. M. t. 1828.
 — *purpu'rea*. 4. July. Britain. Common Foxglove. Eng. Bot. ed. 3, t. 952.
 — *alba*. 4. July. Britain.

PERENNIALS.

- D. ambi'gua*. B. R. t. 64. See *D. grandiflora*.
 — *au'rea*. See *D. laevigata*.
 — *canarie'nsis*. B. R. t. 48. See *Iso'plexis*.
 — *erube'scens*. See *D. grandiflora*.
 — *fusce'scens*. See *D. laevigata*.
 — *fulva*. 3. Brown. June.
 — *grandiflora*. 3. Pale yellow. Switzerland. 1596. Syns., *D. ambigua* and *D. ochroleuca*.
 — *laciniata*. 1½. Yellow. June. Spain. 1827. B. R. t. 1201.
 — *laevigata*. 2. Yellow. July. Hungary. 1816. B. M. t. 5999. Syns., *D. aurea* and *D. fuscescens*.
 — *lana'ta*. 2. Yellow. June. Hungary. 1789.
 — *leucophœ'a*. 2. White, brown. June. Greece. 1788. Sibth. Fl. Gr. t. 607.
 — *Lindleya'na*.
 — *lutea*. 2. July. France. 1639. Syn., *D. micrantha*.
 — *— fucata*. 2. Yellow, red. June. South Europe. B. M. t. 3925.
 — *maria'na*. 1½. Rose. Summer. Spain.
 — *ne'dea*. 2. Yellow. June. Germany. 1817.
 — *micran'tha*. See *D. lutea*.
 — *mi'nor*. 3. Purple. July. Spain. 1780. B. M. t. 2160.
 — *nervosa*. Yellow. July. 1836.
 — *obscura*. 1. Orange. June. Spain. 1778.
 — Half-hardy evergreen. Jacq. Vind. t. 91.
 — *ochroleuca*. Jacq. Vind. t. 57. See *D. grandiflora*.
 — *orienta'lis*. 1½. White. June. Levant. 1820. B. M. t. 2253.
 — *parviflora*. 1½. Brown. July. Asturia. 1798. B. M. t. 257.
 — *purpura'scens*. 2. Pink. June. Germany. 1776.
 — *ri'gida*. 1½. Yellow, red. June.
 — *scē'ptrum*. See *Iso'plexis*.
 — *sibi'rica*. Yellow, red. July. Siberia. 1826.
 — *Tha'psi*. 1½. Purple. June. Spain. 1752. Syn., *D. tomentosa*.
 — *tomentosa*. B. M. t. 2194. See *D. Thapsi*.
 — *tubiflora*. 2. Yellow. June.
 — *viridiflora*. July. Levant. 1827.

Diglossophyllum serrulatum. A synonym of **Chamærops serrulata**.

Dilatris. (From *dilato*, to open wide; referring to the opening of the flower. Nat. ord., *Hæmodoraceæ*; Tribe, *Enhæmodoreæ*. 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.

- D. corymbo'sa*. 1. Purple. May. 1790.
 — *Heritië'ra*. See *Lachnanthes tinctoria*.
 — *panicula'ta*. 1. Blue. June. 1825.
 — *visco'sa*. 3. Blue. 1795.

Dill. (*Anethum 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 compartment; but if for seed, a sheltered soil, rather dry.

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 re-

main 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., *Dilleniaceæ*; Tribe, *Dilleniaceæ*.)

D. speciosa 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.

D. denta'ta. See *Wormia triquetra*. — *retu'sa.* White. Ceylon. Linn. Trans. i. t. 18. Syn., *D. integra*.

— *scandens.* See *Tetracera volubilis*. — *specio'sa.* 30. White, yellow. Malabar. 1800.

Dillwy'nia. (In honour of *L. W. Dillwyn*, a British patron of botany. Nat. ord., *Leguminosæ*; Tribe, *Podalyriæ*. 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, fibry loam one part, with a little silver sand, and pieces of charcoal.

D. acicula'ris. See *D. cinerascens*. — *cinera'scens.* 2. May. 1819. B. M. t. 2247. Syn., *D. acicularis*.

— *clav'a'ta.* Paxt. Mag. xi. t. 5. See *D. floribunda*.

— *Drummo'ndii.* Gf. 1863, p. 412. — *ericifolia.* 2. May. 1794. *D. ericifolia* of B. M. t. 1545 is *D. floribunda*.

— *glabe'rri'ma.* 2. May. 1800. Syn., *D. glaberrima*.

— *floribu'nda.* 2. May. 1794. B. C. t. 305.

— *brevifo'lia.* 2. April. 1824.

— *hispidu'la.* 2. May. 1824.

— *ru'dis.* 2. April. 1824.

— *teretifo'lia.* 2. May.

— *glabe'rri'ma.* B. M. t. 944. See *D. ericifolia*, var. *glaberrima*.

— *glycinifo'lia.* B. R. t. 1514. A synonym of *Chorizema angustifolium*.

— *juniperi'na.* 2. May. 1818. B. C. t. 401.

— *obova'ta.* B. M. t. 1274. See *Eutaxia myrtifolia*.

— *parvifo'lia.* 2. May. 1800. B. M. t. 1527.

— *phylicoi'des.* 2. May. 1824.

— *pu'ngens.* June. 1825. B. C. t. 1502. Syn., *Eutaxia pungens*.

— *ru'dis.* See *D. floribunda*, var. *rudis*.

— *scab'ra.* 2. May. Lem. Jard. FL. iii. p. 296.

— *seri'cea.* 1½. April. 1824.

— *specio'sa.* 2. June. 1838. Paxt. Mag. vii. t. 27.

— *tenuifo'lia.* 1½. May. 1824.

Dilo'ba cæru'leo-ce'phala. Blue-head caterpillar. The greenish caterpillar with a single yellow stripe along the back, and a bluish head, produced by the Figure-of-Eight Moth. It feeds upon the apple, plum, and other orchard trees. They can be destroyed by well drenching the trees in dry weather, or by catching the moths in some sticky matter smeared near a lighted lamp.

Dilo'phus vulga'ris. Syn., *Dilophus febrilis*. The larva of this insect has caused much damage to hops. It is about a quarter of an inch long, and of a brownish colour. The mature insect appears in May. The males are black and the females brownish. It appears probable that the eggs are laid amongst manure and applied with it to the hop roots, upon which the larvæ then feed.

Dima'cria. (From *dis*, twice, and *makros*, long; referring to the two lower stamens being twice the length of the other three. Nat. ord., *Geraniaceæ*; Tribe, *Pelargoniceæ*. This is now referred to *Pelargonium*, section *Hoarea*.)

There are about twenty species included under this head, all little botanical curiosities, 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.

D. astragalifo'lia. Swt. Ger. t. 103. See *Pelargonium astragalifolium*.

— *biparti'ta.* Pale cream. 1821. Swt. Ger. t. 142. Hybrid between *Pelargonium pinnatum* and *P. corydalisflorum*.

— *depre'ssa.* Swt. Ger. t. 290. See *Pelargonium depressum*.

— *e'legans.* Orange-scarlet. Swt. Ger. t. 202. Hybrid between *Pelargonium fulgidum* and *P. pinnatum*.

— *pinna'ta.* Swt. Ger. t. 46. See *Pelargonium pinnatum*.

— *sulphu'rea.* Bright sulphur. Swt. Ger. t. 163. Hybrid between *Pelargonium corydalisflorum* and *P. pinnatum*.

Dimoca'rpus. See *Nephelium*.

Dimo'rpha. See *Eperua*.

Dimorpha'nthus. (From *dimorpha*, two-formed. Nat. ord., *Araliaceæ*.)

Handsome hardy shrubs. For cultivation, see *ARALIA*.

D. mandshu'ricus. Manchuria. 1866. Leaves five feet long; noble for shrubbery. Syn., *Aralia mandshurica*.

— *fo'liis variegatis.* Leaves dark green, edged creamy-white. Manchuria. 1886. Ill. Hort. t. 619.

Dimorphothe'ca. (From *dimorpha*, two-formed, and *theca*, receptacle; florets of disk of two forms. Nat. ord., *Compositæ*; Tribe, *Calendulaceæ*.)

Annual or shrubby perennial herbs, requiring greenhouse protection during winter. The annuals may be sown in the open air in April. The perennials increased by divisions or cuttings. Sandy loam.

D. a'mna. 1. White. June. Simon's Bay. 1752. — *Barbe'ria.* Purple. Caffraria. 1862. B. M. t. 5337. Syn., *D. lilacina*. Gf. t. 463.

— *chrysanthemifo'lia.* 2. Yellow. April. S. Africa. 1790. Syn., *Calendula chrysanthemifolia*. B. M. t. 2218.

— *cunea'ta.* 2-3. Orange. Syn., *Arctotis glutinosa*. B. M. t. 1343.

— *denta'ta.* 1½. Yellow. May. S. Africa. 1790. Syn., *Calendula dentata*. Andr. Rep. t. 407.

- D. fruticos*a. 2. White, yellow. June. S. Africa. 1752. Syn., *Calendula fruticosa*.
 — *graminifolia*. 1-2. White, orange-brown, purple. S. Africa. 1861. Syn., *Calendula graminifolia*. B. R. t. 239.
 — *hybrida*. 1. White. June. S. Africa. 1752. Syn., *Calendula hybrida*, *meteorina crassipes*, and *M. gracilipes*.
 — *villosa*. See *D. Barberia*.
 — *medicinalis*. 1. White, purple. July. S. Africa. 1731. Syn., *Calendula nudicaulis*.
 — *pluvialis*. 1. White. June. S. Africa. 1693. Syn., *Calendula pluvialis*.
 — *Tragus*. 2. White, purple. May. S. Africa. 1774. Syn., *Calendula Tragus*. Jacq. H. Schenb. t. 153. B. R. t. 23.

Dinetus. See **Porana.**

Dioecious. Two-housed; applied to any species having the female and male flowers in separate flowers on separate plants.

Diome'dea. (After *Diomedes*, a classical name. Nat. ord., *Compositæ*; Tribe, *Helianthoidæe.*)

A genus of greenhouse evergreens. They have all yellow flowers. Seeds. Cuttings under a bell-glass. Sandy loam.

- D. argentea*. 2. June. S. Amer. 1824.
 — *identata*. 2. July. W. Ind. 1696.
 — *glabra*'ta. 3. June. S. Amer. 1699.

Dionæ'a. Venus's Fly-trap. (After *Dione*, one of the names of Venus. Nat. ord., *Droseraceæ.*)

Notwithstanding all the fables about this plant, it is one of extreme interest to cultivators, owing to the irritability displayed by the three bristles on the centre of each lobe. They are so situated, that when an insect lights on the lobes they suddenly fold, like the fingers of the two hands clasped together, and inclose the insect with a firmness beyond its strength to escape. Hardy or greenhouse perennial. Division of the plant; seeds at times; leaves laid in damp moss, under a glass, will sometimes form buds, which develop into plants. Peat, with a little sphagnum, moss, and bits of potsherds broken small.
D. muscipula. $\frac{1}{2}$. White. July. Carolina. 1788. B. M. t. 785.

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., *Cycadaceæ*; Tribe, *Eucephalartecæ*. Allied to *Macrozamia*.)

Fine palm-like plants. 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.

- D. edule*. 2. April. Mexico. 1844. B. M. t. 6184.
 — *imbricat*'tum. Mexico.

Diosco'rea. Yam. (After *P. Dioscorides*, a Greek physician. Nat. ord., *Dioscoreaceæ.*)

Ornamental stove, herbaceous, or hardy climbing tuberous-rooted plants, used as potatoes. Dividing the tubers; light, rich soil.

- D. aculea*'ta. 10. E. Ind. 1803.
 — *ata*'ta. 15. India. 1739.
 — *ancectochilus*. S. America. 1865. Climber, with bronzed and copper-banded leaves.
 — *argyræa*. Columbia.
 — *Bata*'tas. 6-9. Chinese Yam. Hardy.
 — *Dacaïnea*'na. China. 1862. Hardy.
 — *brazilien*'sis. 8. Brazil. 1823.
 — *bulbifera*. 12. July. E. Ind. 1693.
 — *cinnamomifolia*. 6. Rio Janeiro. 1827.
 — *crinita*. Natal. B. M. t. 6804.
 — *d'scolor*. Central America.
 — *egre*'gia. Leaves blotched with various shades of green. Brazil. 1868.
 — *eldora*'do. Leaves satiny olive-green, silvery along the veins. Brazil. 1869.
 — *hybrida*. Supposed to be a hybrid between *D. Bataias* and *Tamus communis*. Rev. Hort. 1882, p. 379, f. 80-83.
 — *illustra*'ta. Leaves satiny green, with some patches and central band of silvery-grey. Brazil. 1873.
 — *japo*'nica. 8. Japan. 1852.
 — *multicolor*. Rio Negro. 1868. Of this there are the following varieties:—*chryso-phylla*, leaves olive-brown, variegated with golden; *melanoleuca*, leaves deep green, with central silvery band and silvery blotches along the veins; *meta*'lica, leaves bronzy, with coppery central band; *sagittaria*, leaves emerald-green along the veins, silvery between them. All from Rio Negro. 1871.
 — *no*'bilis. Leaves velvety bronze, variegated with yellow. Brazil. 1868. A very ornamental climber.
 — *pentaphylla*. 10. E. Indies. 1768.
 — *prisma*'tica. Leaves satiny purplish-green, with silvery ribs. Peru. 1871.
 — *retu*'sa. Dull yellowish. S. Africa. 1870.
 — *sativa*. 20. August. W. Ind. 1733.
 — *vitta*'ta. Greenish. Brazil. 1872.

Dio'sma. (From *dios*, divine, and *osme*, odour; referring to the powerful perfume which characterizes these and other *Rutaceæ*; Tribe, *Diosmeæ.*)

These are among the Bucku-plants of the Cape colonists, and are old inhabitants of our greenhouses; but some of the more showy species now form the new genera *Adenandra*, *Agathosma*, *Barosma*, etc. 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, fibry 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 fibry, rough state

- D. acuminat*'ta. B. C. t. 493. See *Adenandra unistora*.
 — *a*'lba. See *Coleonema alba*.
 — *ambigua*. B. C. t. 461. See *Agathosma ambigua*.
 — *capita*'ta. Pink. Spring. B. C. t. 860.
 — *ciliat*'ta. B. R. t. 366. See *Agathosma ciliata*.
 — *cordat*'ta. Synonymous with *Agathosma imbricata*, var. *acuminata*.
 — *corymbosa*. See *Agathosma villosa*.
 — *crenat*'ta. B. C. t. 404. See *Barosma betulina*.
 — *cupressi*'na. $\frac{1}{2}$. Pink. May. Cape Flats. 1790. B. C. t. 303.
 — *dio*'ca. See *Barosma dioica*.
 — *ericifolia*. Andr. Rep. t. 541. See *D. vulgaris*, var. *rubra*.
 — *ericoides*. B. M. t. 2332. See *D. vulgaris*, var. *longifolia*.
 — *fastidissi*'ma. 2. June. 1824.
 — *fra*'grans. B. M. t. 1519. See *Adenandra fragrans*.

- D. hirsuta*. See *D. vulgaris*, var. *longifolia*.
 — *hirta*. Purple. February. 1794. B. R. t. 369.
 — *hybrida*. 2. May. 1823.
 — *lanceolata*. B. R. t. 476. A synonym of *Barosma lanceolata*.
 — *latifolia*. See *Barosma crenulata*.
 — *linearis*. A synonym of *Adenandra linearis*.
 — *linifolia*. See *Barosma dioica*.
 — *longifolia*. See *D. vulgaris*, var. *longifolia*.
 — *marginata*. See *Adenandra marginata*.
 — *odora*'ta. See *Barosma crenulata*.
 — *oppositifolia*. See *D. vulgaris*, var. *longifolia*.
 — *orbicularis*. See *Agathosma orbicularis*.
 — *ovata*. B. M. t. 1616. See *Barosma ovata*.
 — *pectinata*. See *D. vulgaris*, var. *longifolia*.
 — *pulchella*. B. M. t. 1537. See *Barosma pulchella*.
 — *punctata*. A synonym of *Barosma ovata*.
 — *reflexa*. Synonymous with *Agathosma reflexa*.
 — *rubra*. B. R. t. 563. See *D. vulgaris*, var. *rubra*.
 — *serraria*. 1½. June. 1812.
 — *serratifolia*. B. M. t. 456. See *Barosma serratifolia*.
 — *speciosa*. B. M. t. 1271. See *Adenandra umbellata*, var. *speciosa*.
 — *sphaerocephala*. May. B. C. t. 1490.
 — *squamosa*. 1. June. 1818. A synonym of *Agathosma squamosa*.
 — *subulata*. See *D. vulgaris*.
 — *succulenta*. 2. June. Cape Flats.
 — *tenuifolia*. 1. May. 1823.
 — *tenuifolia*. See *D. vulgaris*, var. *longifolia*.
 — *tenuissima*. B. C. t. 1624. See *Agathosma erecta*.
 — *tetragona*. A synonym of *Agathosma tetragona*.
 — *ulicina*. 1. May. 1823.
 — *uniflora*. B. M. t. 273. See *Adenandra uniflora*.
 — *virgata*. 1. June. 1820.
 — *vulgaris*. 1-3. White, tinged blue.
 — *longifolia*. 4. Pink. May. 1731. Syns., *D. ericoides*, B. M. t. 2332, *D. hirsuta*, *D. longifolia*, *D. oppositifolia*, *D. pectinata*, and *D. tenuifolia*.
 — *rubra*. 2. Red. March. 1752. Syns., *D. ericifolia*, Andr. Rep. t. 541, and *D. rubra*, B. M. t. 563.

Diospyros. The Date Plum. (From *dios*, divine, and *pyros*, wheat; literally, celestial food. Nat. ord., *Ebenaceae*.)

The European Lotus, or Date Plum, is rather tender in Britain, but ripens its fruit in the south of France. The Virginian *Diospyros* is not unlike the European Lotus; it thrives best in peat soil, 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. Ebenus*. The Iron-wood is also one of the species. The Kau Apple of the Cape, and the Kaki preserve from China, are said to be the fruit of *Diospyros Kalki*. 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. fertilis* and *intermedia*. See *D. virginiana*.
 — *lotus*. 20. Yellow, green. June. Italy. 1596. Evergreen.
 — *lucida* and *pubescens*. See *D. virginiana*.
 — *virginiana*. 20. Yellow, green. June. N. America. 1629. Wats. Dendr. t. 146.

Syns., *D. fertilis*, *intermedia*, *lucida*, and *pubescens*.

D. Wisenerti. Japan. 1887.

GREENHOUSE EVERGREENS.

- D. coronaria*. Japan. 1885.
 — *costata*. See *D. Kaki*, var. *costata*.
 — *Kaki*. 12. White, green. China. 1789. Wight Ic. t. 415. Syn., *D. lobata*. Garden varieties of this have been named:—*D. aurantium*, *D. Bertii*, *D. elliptica*, and *D. Sahuti*, var. *gallica*. See Rev. Hort. 1887, t. 349.
 — *costata*. Fruit ribbed, edible. Flowers pale yellow. China. 1869.
 — *lobata*. See *D. Kaki*.
 — *Maze*'ti. Fruit orange-red. Japan. 1874.
 — *tessellata*. See *D. tessellaria*.
 — *tessellaria*. 20. Mauritius. 1824. Syn., *D. reticulata*.
 — *vaccinioides*. 2. White. May. S. China. 1823. B. C. t. 1549.

STOVE EVERGREENS.

- D. amplexicaulis*. Mauritius. 1851. Paxt. Fl. Gard. ii. p. 11, f. 139.
 — *chlorozylon*. 20. White. India. 1822. Wight Ic. t. 1224. Syn., *D. capitulata*.
 — *cordifolia*. See *D. montana*, var. *cordifolia*.
 — *digyna*. See *D. ebenaster*.
 — *discolor*. 20. Philippines. 1821. Syn., *D. mabola*, B. R. t. 1139.
 — *ebenaster*. 20. Bengal. 1792. Syns., *D. digyna*, Jacq. H. Schenb. t. 313, *D. edulis*, and *D. Sapota*, B. M. t. 3988.
 — *Ebenus*. 30. White. India, Malacca, etc., 1792. Syn., *D. melanozylon*.
 — *ericoides*. See *D. ebenaster*.
 — *embryopteris*. 25. White, green. July. E. India. 1818. The plant figured in B. R. t. 499 is not this species.
 — *hirsuta*. 20. Ceylon. 1820.
 — *lycioides*. See *Royena pallens*.
 — *mabola*. See *D. discolor*.
 — *melanozylon*. See *D. Ebenus*.
 — *obovata*. Jacq. H. Schenb. t. 312. See *D. tetrasperma*.
 — *Sapota*. See *D. ebenaster*.
 — *syvatica*. 20. White. E. Indies. 1812.
 — *tetrasperma*. 15. White, green. W. Indies. 1796. Syn., *D. obovata*.

Dipca'di. (Derivation unexplained. Nat. ord., *Liliaceae*; Tribe, *Scilleae*. Syn., *Uropetalon*. Allied to *Lachenalia*.)

Pretty hardy and half-hardy bulbous plants. Sandy loam and leaf-soil. Offsets and seeds.

- D. Balfouri*. 2. Greenish-yellow. September. Socotra. 1880.
 — *glaucum*. 2-3. Greenish. August. Cape of Good Hope. 1814. Syn., *Uropetalon glaucum*. B. R. t. 156.
 — *longifolium*. 2. Purple, blue. August. Mozambique. 1825. Syn., *Uropetalon longifolium*. B. R. t. 974.
 — *serotinum*. 3. Greenish-brown. July. Spain. Syns., *Scilla serotina*, B. M. t. 859, and *Uropetalon serotinum*. Hardy.
 — *fulvum*. 3. Green, red. July. Mogador. 1808. Syn., *Uropetalon fulvum*.
 — *umbonatum*. Yellowish. S. Africa. 1865. Syn., *Uropetalon umbonatum*. Ref. Bot. t. 17.
 — *Welwitschii*. Green. Angola. 1867. Syn., *Uropetalon Welwitschii*. Ref. Bot. t. 16.

Dipha'ca cochinchinensis. See **Ormocarpon sennoides**. Wight Ic. t. 297.

Diphylle'ia. (From *dis*, two, and *phyllon*, a leaf; the leaves produced in

twos. Nat. ord., *Berberidaceæ*; Tribe, *Berberacæ*. Allied to *Jeffersonia*.)

A pretty, hardy herbaceous perennial, best treated amongst shade loving plants, useful for rockeries; divisions and seed; rich, light soil.

D. cymosa. $\frac{3}{4}$. White. May. N. America. 1812. B. M. t. 1666.

Diphy'sa. (From *dis*, two, and *physis*, 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., *Leguminosæ*; Tribe, *Galegeæ*.)

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 fibry peat.

D. carthaginensis. 10. Yellow. Carthage. 1827.

Diplacus. See *Mimulus*.

Dipladenia. (From *diploos*, a double, and *aden*, a gland; referring to the presence of two gland-like processes on the ovary. Nat. ord., *Apocynaceæ*; Tribe, *Echitidææ*. Allied to *Mandevilla*.)

Stove evergreen twiners. Cuttings of ripe shoots in sand, under a glass, 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.

D. acuminata. 10. Pink. July. Brazil. 1854. B. M. t. 4828.

— *amblybilis*. 10. Rosy-crimson. Summer. Hybrid between *D. crassinoda* and *D. splendens*. Flor. Mag. t. 309.

— *amoena*. Pink, rosy. Garden variety.

— *atropurpurea*. 10. Dark purple. July. Brazil. 1842. Reintroduced, 1887. Fl. Ser. t. 29.

— *boliviana*. White, throat yellow. June. Bolivia. 1866. B. M. t. 5783.

— *Brearilyana*. Pink to reddish scarlet. May to September. Garden hybrid. 1881.

— *caribasia*. Bluish-pink, striped bright rose. Flor. and Pom. 1879, p. 502.

— *crassinoda*. 10. Rosy. October. Rio Janeiro. B. R. 1844, t. 64. Syn., *D. Martiana*.

— *Houtteana*. Rose, throat orange. Garden variety.

— *delecta*. Pink, shaded rose and violet. Garden variety. 1881.

— *diadema*. Pink and rose. 1881.

— *Elliotii*. Rose, pink, throat yellow striped with pink. 1884.

— *flava*. Yellow. May. New Grenada. 1845. B. M. t. 4702.

— *Harrisii*. B. M. t. 4825. See *Odontadenia speciosa*.

— *hybrida*. Crimson-red. Garden variety. 1881.

— *ilustris glabra*. Rosy-red. Brazil. 1891. B. M. t. 7156.

— *insignis*. Rosy-purple. Garden variety.

— *Martiana*. See *D. crassinoda*.

— *Morosa*. White, blue. Australia. 1873.

— *nobilis*. Pink, purple. July. Brazil. Paxt. Mag. xvi. p. 4.

— *ornata*. Crimson, violet. Garden variety.

— *profusa*. Crimson. Fl. Ser. ser. 2, t. 491. Syn., *D. splendens*, var. *profusa*.

— *regina*. Rose, flesh-colour.

— *rosa-campestris*. Tropical America? Fl. Ser. t. 256. Syn., *Echites rosa-campestris*.

— *rosea*. Rosy-pink, throat yellow. Garden variety.

D. splendens. 10. Rose. July. Organ Mountains. 1841. Syn., *Echites splendens*.

B. M. t. 3976.

— *profusa*. See *D. profusa*.

— *Williamsii*. Throat deep pink. Garden variety.

— *urophylla*. 3. Deep salmon. Brazil. 1847.

B. M. t. 425 and 4414.

— *vincoflora*. Fl. Ser. t. 74.

Diplazium. (From *diplozo*, to double; referring to the double covering of the spore-cases. Nat. ord., *Filices*. Now regarded as a section of **Asplenium**.)

A genus of handsome stove Ferns. The root-stocks of *D. esculentum* are eaten in India by natives. The spores of all are brown, or brownish-yellow; divisions; loam and peat.

D. acuminatum. $\frac{1}{2}$. Brazil.

— *affine*. Isle of Luzon.

— *arborescens*. 12. Mauritius. 1826.

— *atimæfolium*. Isle of Luzon.

— *amblygnum*. Tropical America. 1822.

— *Arnottii*. Sandwich Islands. 1877.

— *arrioculatum*. 10. August. Caraccas. 1820.

— *barbadesense*. August. W. Ind. 1822.

— *brevifolium*. Isle of Luzon.

— *brevisolum*. Jamaica.

— *castaneifolium*. 1. July. Guiana. 1824.

— *caudatum*. Isle of Luzon.

— *coarctatum*. Brazil. 1841.

— *decussatum*. 2. June. E. Ind.

— *deflexum*. Malacca.

— *ebenum*. Isle of Luzon.

— *elegans*. July.

— *esculentum*. 3. E. Ind. 1822.

— *eximium*. Malacca.

— *frondosum*. August. E. Ind.

— *glaberrimum*. Java. 1862.

— *grandifolium*. 4. August. Jamaica. 1793.

— *integrifolium*. June. Java.

— *juglandifolium*. 3. August. Jamaica. 1822.

— *Katzei*. Gf. t. 282.

— *malabaricum*. 8. E. Ind. 1818.

— *ovatum*. April. Isle of Leyte.

— *plantaginivum*. 2. August. W. Ind. 1819.

— *porretum*. Malacca.

— *profusum*. Carmine. 1880.

— *Pullingeri*. Hong Kong. 1875.

— *seramporensis*. 3. August. Serampore. 1820.

— *Schkuhrrii*. Malacca.

— *Shepherdii*. Brazil. 1822.

— *spinulosum*. July. Java.

— *striatum*. 1. August. W. Ind. 1793.

— *syboticum*. E. Indies.

— *thelypteroides*. 1. July. N. Amer. 1823.

— *Thwaitesii*. Ceylon.

— *undulatum*. August.

— *vittifermissis*. July. Isle of Java.

— *Wallbachii*. April. E. Ind.

Diplochita. See *Miconia*.

Diplocoma villosa. Swt. Fl. Gard. t. 246. See *Heterotheca involuoides*.

Diplocyathia. (From *diploos*, double, and *kyathion*, a cup; in reference to the form of the flower. Nat. ord., *Asclepiadaceæ*; Tribe, *Stapelieæ*.) Greenhouse evergreen. For culture, see *STAPELIA*.

D. ciliata. $\frac{1}{2}$. Green-striped. November. S. Africa. 1795. Syn., *Stapelia ciliata*.

Diplolæna. (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 *Rutaceæ*; Tribe, *Boroniææ*. Allied to *Correa*.)

Greenhouse evergreens, from Swan River, with cream-coloured flowers. Cuttings of young shoots getting firm; peat, and a very little fibry loam.

D. angustifolia. May. W. Australia.

— *Dampieri*. 4. April. W. Australia. 1837.

B. M. t. 4059. *D. Dampieri* of B. R. 1841, t. 64, is probably *D. microcephala*, var. *Drummondii*.

— *grandiflora*. 4. May. W. Australia.

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., *Compositæ*. Now united with *Aster*.)

D. canescens. Paxt. Mag. ii. t. 149. See *Aster canescens*.

— *chrysophyllus*. See *Aster chrysophyllus*.

— *incanus*. B. M. t. 3382. See *Aster canescens*.

— *linarifolius*. See *Aster linarifolius*.

Dipole'tis. (From *diploos*, double, and *pelte*, a shield; referring to a double appendage attached to the inside of the petals. Nat. ord., *Sapindaceæ*; Tribe, *Sapindææ*.)

Greenhouse evergreen. Cuttings of young shoots in sandy soil, under a glass, in April; peat and loam.

D. Hugelii. 1. Rose, white. July. Swan River. 1837. B. R. 1839, t. 69.

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, etc. Nat. ord., *Palmeæ*; Tribe, *Cocoinææ*. Allied to *Cocos*.)

Those who cannot afford head-room for the giants of this noble race have here three dwarf species to represent the order. Stove Palms. Seeds; rich, fibry loam.

D. campestris. 10. Brazil. 1823.

— *caudescens*. 25. Brazil. 1847.

— *litorale*. 4. Yellow. May. Brazil. B. M. t. 4681.

— *maritimum*. 10. Brazil. 1823.

Dipo'dium. (From *dis*, twice, and *pous*, a foot; in allusion to two teeth at the base of the lip. Nat. ord., *Orchideææ*.)

A handsome stove Orchid.

D. paludosum. Creamy-white, spotted purple; lip white with purple lines. Cambodia, Malacca, Borneo. G. C. 1888, iv. p. 91.

Dipo'sis. (From *dis*, twice, and *pois*, a husband, on account of the three-flowered umbellules containing two male flowers and one fertile one. Nat. ord., *Umbelliferaæ*; Tribe, *Mulinææ*.)

Greenhouse or half-hardy tuberous perennial, of botanical interest only. Treatment should be the same as for the tuberous *TROPEOLUMS*.

D. bulbocostanum. $\frac{1}{2}$. Whitish. Chili. 1872.

Dipsacoza'mia mexicana. See *Ceratozamia mexicana*.

Dipsacus. Teasel. (From *dipsao*, to thirst; referring to the cavity formed by the leaves clasping the stem holding water. Nat. ord., *Dipsacaceæ*. Allied to *Scabiosa*.)

The only plant in this genus worthy of any remark is *D. fullonum*, 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. ferrox. 3. Purple. July. South Europe. 1818.

— *fullonum*. 6. Purple. July. South Europe. This has escaped from cultivation, and become naturalized in the West of England. Eng. Bot. ed. 3, t. 675.

— *Gmelini*. 3. Blue. July. Caucasus. 1820.

— *inermis*. 4. White. Nepal. 1823.

— *lacinia tus*. 6. Purple. July. Germany. 1683.

— *pilosus*. 4. White. August. Britain. Eng. Bot. ed. 3, t. 676.

— *sylvestris*. 3. Purple. Summer. Britain. Eng. Bot. ed. 3, t. 674.

Dipteraca'nthus is now united to *Ruellia*.

D. affinis. B. M. t. 5414. See *Ruellia spinosa*.

— *calvescens*. B. M. t. 5106. See *Ruellia solitaria*.

— *ciliata*. See *Ruellia ciliata*.

— *Herbstii*. B. M. t. 5156. See *Ruellia Herbstii*.

— *patula*. See *Ruellia patula*.

— *scandens*. See *Henfreyia scandens*.

— *spectabilis*. Peru. B. M. t. 4494.

Dipterix. Tonquin Bean. (From *dis*, double, and *pteria*, a wing; referring to the two upper segments of the calyx. Nat. ord., *Leguminosææ*; Tribe, *Dalbergiææ*. 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.

D. odorata. 60. Purple. Cayenne and N. Brazil. 1793. Syn., *Baryosma Tonga*.

— *oleifera*. 80. Mosquito Country.

Dir'ca. Leather-wood. (From *dirke*, a fountain; the plant growing in moist places. Nat. ord., *Thymelæææ*; Tribe, *Enthymelæææ*. Allied to *Daphne*.)

Hardy deciduous shrub. Layers in autumn; seeds in spring; sandy, peaty soil, and moist situation.

D. palustris. 6. Yellow. March. Virginia. 1750. B. R. t. 292.

Di'sa. (Probably the native name. Nat. ord., *Orchideææ*; Tribe, *Ophrydeæ-Diseææ*.) A genus of curious ground-orchids, natives of the Cape of Good Hope. Perhaps the most splendid is *D. grandiflora*, 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.

D. atropurpurea. Purple lake. S Africa. 1866. B. M. t. 6391.

— *bracteata*. $\frac{3}{4}$. Green. June. 1818. B. R. t. 324.

- D. chrysotha'chya*. 1. Yellow. June.
 — *cornu'ta*. 1½. Pale blue. June. 1805. B. M. t. 4091.
 — *draco'nis*. 1. White, purple. June. 1823.
 — *ferrugi'nea*. ¾. Brown. June. 1820.
 — *flexuo'sa*. ¾. 1823.
 — *graminifo'lia*. 1½. Blue. 1825.
 — *grandiflo'ra*. 1. Scarlet. July. 1825. B. M. t. 4073 is *D. uniflora*. Some varieties are figured in Garden, Feb. 28, 1882.
 — — *Barre'ttii*. 1. Orange-red, crimson. S. Africa. 1874.
 — *la'cera*. ¾. White. June. 1826.
 — — *multi'fla*. Lip fringed. G. C. 1888, iv. p. 664, f. 93.
 — *macra'ntha*. Rose. Ill. Hort. 1880, p. 74.
 — *macula'ta*. 1. Blue. June. 1816.
 — *megace'ras*. 1-2. White, spotted with purple. August. S. Africa. 1880.
 — *polygono'des*. 1. Brick-red. Autumn. Natal. 1879.
 — *prasina'ta*. ¾. Green, red. June. 1815. B. M. t. 210.
 — *racemo'sa*. Rose-purple. G. C. 1887, ii. p. 809.
 — *spathula'ta*. 1. Pale blue. June. 1805.
 — *tripetaloi'des*. White, pink, spotted crimson. G. C. 1889, v. p. 360. Syn., *Orchis tripetaloides*.
 — *uniflo'ra*. Scarlet. Syn., *D. grandiflora* of B. M. t. 4073.
 — *Veit'ohii*. A hybrid between *D. grandiflora* and *D. racemosa*. 1891.

Disease.—Livid brown patches sometimes appear upon the base and middle of the leaves. This has been found to be due to a minute nematoid worm, similar to that which sometimes attacks the Carnation.

Disa'ndra prostra'ta, B. M. t. 218. See **Sibthorpia prostrata**.

Disbudding is the removal, soon after they have burst into leaves, of such buds as, if allowed to grow into shoots, would be misplaced. 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 over-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., *Rhamnaceae*; Tribe, *Colletieae*. Allied to *Colletia*.)

Greenhouse or half-hardy spring shrubs. Cuttings of half-ripe shoots in sand, under a glass,

in April, kept rather close and hot; sandy loam and peat.

- D. australis*. 2. Yellow. May. Anstralia. 1824. Syn., *Tetrapasma juncea*.
 — *uniflo'lia*. Monte Video. 1882.
 — *serratiflo'lia*. 8. Greenish-white. June. S. America. 1882. Syn., *Colletia serratifolia*.
 — *Touma'tou*. White. June. New Zealand. 1875. Toumatou,—Wild Irishman.

Dischi'dia. (From *dis*, twice, and *schizo*, to split; referring to an obscure process in the construction of the flower. Nat. ord., *Asclepiadaceae*; Tribe, *Marsdenieae*. 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.

- D. bengale'nsis*. 1½. September. India. 1819. B. M. t. 2916.
 — *mummul'ria*. ¾. August. Amboyna.
 — *Rafflesia'na*. Yellowish. Malay Archipelago. Fl. Ser. t. 1592-3.

Diseases. The morbid affections to which the vegetable part of the creation are 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, diseases may be defined to be an incorrect performance of the functions.

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 organized 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 *dis*, double, and *stemma*, a crown; referring to the double coronet, or rays. Nat. ord., *Passifloraceae*. United to **Passiflora**, which see.)

- D. adiantifo'lia*. B. R. t. 233. See *Passiflora adiantifolia*.
 — *aurantia*. B. M. t. 4140. See *Passiflora aurantia*.

D. Herbertia'na. B. R. t. 737. See *Passiflora Herbertiana*.

Disocactus *biformis*. B. R. 1845, t. 9. See *Phyllocactus biformis*. B. M. t. 6156.

Disperis. (From *dis*, double, and *pera*, a pouch; from the form of the perianth's outer segments. Nat. ord., *Orchideæ*; Tribe, *Ophrydeæ-Coryciæ*.)

A genus of ground, or terrestrial orchids, natives of the Cape of Good Hope. Division; peat and loam, with a little sand and charcoal.

D. cape'nsis. 3. Scarlet. July. 1816.
— *cuculla*'ta. 3. Purple. June. 1822.
— *secu'nda*. 3. Purple. June. 1799.

Disporum. (From *dis*, double, and *poros*, a pore; application not stated. Nat. ord., *Liliaceæ*; Tribe, *Uvulariæ*. Allied to *Uvularia*.)

Half-hardy, or in the south hardy, herbaceous plants. Division of the roots in spring; also by seeds, sown under glass, in April; peat and loam, most of the first.

D. fulvum. See *D. pullum*.
— *Hooker'i*. 1-2. Greenish. California.
— *lanuginosum*. 1. Yellow, green. May. S. Carolina. 1758. Syn., *Uvularia lanuginosum*. B. M. t. 1490.
— *Leschenaultia*'num. White. Berries black. S. India and Ceylon. B. M. t. 6935.
— *Menzie'sii*. 1-3. Greenish. California.
— *pullum*. 13. Brown. October. China. 1801. Syn., *D. fulvum* and *Uvularia chinensis*. B. M. t. 916.
— — *parviflorum*. 13. Yellow. July. Ne-paul. 1820.

Disso'tis. (From *dissoi*, two kinds; the anthers having two different forms. Nat. ord., *Melastomaceæ*; Tribe, *Osbeckiæ*.)

Stove shrubs. Cuttings.
D. inca'na. Purple. Natal. B. M. t. 3790. Syn., *Osbeckia umlaasiana*.
— *Irrvingia*'na. 3. Purple. W. Trop. Africa. 1859. B. M. t. 5149.

Disteganthus. (From *distegos*, two stories, and *anthos*, a flower; in allusion to the disposition of the corolla above the receptacle. Nat. ord., *Bromeliaceæ*. Allied to *Cryptanthus*.)

Stove perennial. For cultivation, see BILLBERGIA.

D. Moe'nsi. See *Cryptanthus Morrenianus*.
— *scarlati'vus*. Amazons. 1869. Syn., *Bromelia amazonica*.

Distiaca'nthus, is a corruption of **Disteganthus**, which see.

Dittany. *Dicta'mnus*.

Dittany of Amorgos. *Ori'ganum Tournefortii*.

Dittany of Crete. *Ori'ganum dicta'mnus*.

Diu'ris. (From *dis*, double, and *oura*, a tail; in allusion to the two tail-

like sepals. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Diurideæ*.)

A beautiful genus of greenhouse terrestrial orchids, all natives of Australia. Only the following species at present introduced. Some of the species grow in peaty soil under the shade of trees, others in open clayey pastures; and if introduced, must be treated in accordance with their habitat.

D. alba. 1. White, rose, green, brown, purple. August. New S. Wales. 1875. B. M. t. 6201.
— *curvifo'lia*. See *D. maculata*.
— *elonga'ta*. See *D. punctata*.
— *lilaci'na*. See *D. punctata*.
— *macula'ta*. Yellow, spotted with brown or purple. March. Queensland. 1825. B. M. t. 3156. Syn., *D. curvifolia* and *D. pardina*.
— *pardi'na*. See *D. maculata*.
— *puncta'ta*. 1-2. Bluish-purple. Australia. Syn., *D. elongata* and *D. lilacina*.

Dodder. *Cu'scuta*.

Dodeca'theon. American Cow-slip. (An ancient name applied by Pliny to a plant having a leaf like a lettuce. Nat. ord., *Primulaceæ*; Tribe, *Primuleæ*. Allied to *Soldanella*.)

Hardy herbaceous perennials, from North America. Division of the roots and seeds; sandy loam.

D. Cleve'landi. 1. Violet-blue, centre yellow and black. California. 1890.
— *integrifolium*. 3. Light purple. April. 1829. B. M. t. 3622.
— *Jeffreyi*. Rose, yellow, brown. Rocky Mountains. 1867. Fl. Ser. t. 1662.
— *Lemoinei*. Hybrid between *D. integrifolium* and *D. Jeffreyi*.
— *Mea'dia*. 1. Light purple. May. 1744. B. M. t. 12.
— — *alba*. 1. White. May. 1824.
— — *elegans*. 13. Rosy. May. 1827.
— — *frigidum*. Deep reddish purple. N.W. America. 1869. B. M. t. 5871.
— — *giganteum*. 2. Lilac. May. 1819.
— — *lilaci'num*. 1. Lilac.
— — *splenditum*. Magenta pink, golden-orange. 1833.

Dog-berry-tree. *Cornus sanguinea*.

Dog Bramble. *Ribes cynosbati*.

Dog's Bane. *Apocynum*.

Dog's Tooth Violet. *Erythronium*.

Dogwood. *Cornus*.

Dolia. (From *dolios*, deceptive; appearing like the genus *Salsola*, to which it is in no way related. Nat. ord., *Convolvulaceæ*; Tribe, *Nolaneæ*.)

Greenhouse evergreens. Cuttings.
D. revolu'ta. Blue. Peru. Syn., *Alona revolu'ta*.
— *tomentosa*. White. Valparaiso. Syn., *Alona tomentosa*.

Dolichandra. (From *dolikos*, long, and *aner*, male; the stamens are protruded. Nat. ord., *Bignoniaceæ*.)

Greenhouse climber.
D. cyanchoi'des. Red. Argentine. 1891.

Do'licnos. (From *dolikos*, long; referring to the twining shoots. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Syn., *Lablab*.)

Generally weedy-looking things: *D. lignosus* 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. acinaciformis*. Jacq. Ic. t. 559. See *Canavalia ensiformis*.
 — *bengalensis*. Jacq. Vind. t. 124. See *D. Lablab*.
 — *biconortus*. Violet, yellow, white. Japan. 1869.
 — *capensis*. 6. Yellow. July. Cape of Good Hope. 1823. Greenhouse evergreen.
 — *emarginatus*. Jacq. H. Schomb. t. 221. See *Canavalia obtusifolia*, var. *emarginata*.
 — *gladiatus*. Jacq. Ic. 560. See *Canavalia gladiata*.
 — *hirsutus*. Yellow. Japan. 1802. Andr. Rep. t. 446.
 — *Jacquinii*. 8. White. July. S. Amer. 1800. Stove evergreen.
 — *Lablab*. Purple. July to September. Egypt. 1714. B. M. t. 896. Syns., *D. bengalensis* and *D. purpureus*.
 — *lignosus*. 12. Purple. July. E. Ind. 1776. Greenhouse evergreen. B. M. t. 380.
 — *Lubia*. 14. White, blue. July. Egypt. 1818. Hardy annual.
 — *lutulus*. Jacq. Vind. t. 90. See *Vigna glabra*.
 — *obtusifolia*. See *Canavalia obtusifolia*.
 — *polystachyos*. See *Phaseolus perennis*.
 — *pubescens*. S. America. Jacq. Vind. t. 101.
 — *purpureus*. B. M. t. 830. See *D. Lablab*.
 — *roseus*. See *Canavalia rosea*.
 — *sesquipedalis*. Jacq. Vind. t. 67. See *Vigna Catjang*.
 — *sinesis*. B. M. t. 2232. See *Vigna*.
 — *Soja*. Jacq. Ic. t. 145. See *Glycine Soja*.
 — *tranquebaricus*. Jacq. Vind. t. 370. See *Vigna Catjang*.
 — *unguiculatus*. Jacq. Vind. t. 23. See *Vigna Catjang*.

Doliocarpus. (From *dolios*, deceitful, and *karpos*, a fruit; in reference to the juice being used as rouge. Nat. ord., *Dilleniaceæ*; Tribe, *Delimeæ*. Allied to *Delima*.)

Stove evergreen climber. Cuttings of young firm shoots in sand, under a glass, and in bottom-heat; seeds, which are poisonous; peat and loam, most of the former, and a little silver sand.

D. Calineæ. 10. Yellow. Guiana. 1822.

Dombe'ya. (Named after *J. Dombey*, a French botanist. Nat. ord., *Sterculiaceæ*; Tribe, *Dombeyæ*. Syn., *Astrapeæ*.)

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.

- D. Amélie*. 30. Pink. Madagascar. 1823. Fl. Ser. t. 605. Syn., *Astrapeæ viscosa*. B. M. t. 4544.
 — *angulata*. 10-12. Pink. Mauritius. B. M. t. 2905.
 — *Burge'sta*. White, rose. S. Africa. 1865. B. M. t. 5487.

- D. cannabina*. 10. White. March. Mauritius. B. M. t. 3619.
 — *chilensis*. A synonym of *Araucaria imbricata*.
 — *cordifolia*. 16. Red. E. Ind. 1820.
 — *Erythroxylon*. B. M. t. 1000. See *Melhania Erythroxylon*.
 — *excelsa*. A synonym of *Araucaria excelsa*.
 — *ferruginea*. 15. White. Mauritius. 1815.
 — *Mastriesii*. White. Tropical Africa. 1867. Fragrant. B. M. t. 5639.
 — *mollis*. 30. Pink. March. B. M. t. 4579. Syn., *Astrapeæ mollis*, Hort.
 — *ovata*. 16. White. Bourbon. 1822.
 — *punctata*. 16. White. Bourbon. 1820.
 — *tiliafolia*. 15. White. Bourbon. 1820.
 — *viburniflora*. 13. White. February. Comoro Islands. 1805. B. M. t. 4568.

Do'nia. See *Grindelia*.

- D. ciliata*. See *Grindelia ciliata*.
 — *glutinosa*. B. R. t. 187. See *Grindelia glutinosa*.
 — *punctata*. See *Cyanthus puniceus*.
 — *squarrosa*. B. M. t. 1706. See *Grindelia squarrosa*.

Doodia. (Named after *S. Doody*, a London apothecary and botanist. Nat. ord., *Filices*.)

Greenhouse Ferns. Spores brown, or yellowish brown. Divisions, just before fresh growth commences, in spring; peat and loam.

- D. aspera*. 4. June. N. S. Wales. 1808. B. C. t. 39.
 — *multifida*. Much-cut variety. 1879.
 — *blechnoides*. August. N. Holland. 1835.
 — *caudata*. 1. June. N. Holland. 1820.
 — *duriuscula*. New Caledonia. 1868.
 — *Kunthiana*. Sandwich Islands.
 — *lunulata*. New Zealand. 1834.
 — *media*. 4. June. N. Holland. 1823.
 — *virginica*. August. Virginia. 1774.
 — *Harryana*. 1. Garden variety. G. C. 1884, xxi., p. 408.

Dorco'ceras hygrometrica. B. M. t. 6468. 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 to be *F. orientalis*. Nat. ord., *Umbellifereæ*; Tribe, *Peucedaneæ*. 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. ammoniacum*. 7. White, yellow. June. Persia. 1831. Bent. and Tr. t. 129.

Doro'nicum. Leopard's Bane. (From *doronigi*, the Arabic name. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*. Allied to *Arnica*.)

A genus of early-flowering, low, hardy, herbaceous plants for borders. *D. Cotuinæ* 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. altaicum*. Dividing at the roots; common garden-soil; if dry and light all the better.

- D. altaicum*. 1. White. July. Siberia. 1783. Syn., *Aronicum altaicum*.
 — *austriacum*. 1. May. Austria. 1816.
 — *Bourgei*. 3. Purplish. Canary Isles. 1853. B. M. t. 4994.

- D. caucasicum*. 1. July. Caucasus. 1815. B. M. t. 3143. Syn., *D. orientale*.
 -- *Columba*. 2. May. Italy. 1824.
 -- *cordifolium*. Synonymous with *D. Columnæ*.
 -- *dentatum*. May. 1825.
 -- *macrophyllum*. 2. July. Europe. 1828.
 -- *orientale*. See *D. caucasicum*.
 -- *pardalichnes*. 2. May. Britain. Eng. Bot. ed. 3, t. 761.
 -- *peruvia num*. See *Werneria frigida*.
 -- *plantaginum*. 2. May. South Europe. 1870. Eng. Bot. ed. 3, t. 762.
 -- *excelsum*. 5. Yellow. March to October. Syn., *D. hybridum*, of *Harpur Crewe*.
 -- *scorpioides*. 1. May. Germany.

Dorstenia. (Named after *T. Dorsten*, a German botanist. Nat. ord., *Urticaceæ*; Tribe, *Moreæ*. Allied to the Fig and Mulberry.)

Curious little tufted stove plants, cultivated for the remarkable way they produce their inconspicuous 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.

- D. argentata*. Leaves with central silvery band. S. Brazil. 1869.
 -- *Bowmaniana*. Rio Janiero. 1872.
 -- *cordifolia*. ½. June. W. Indies. 1822.
 -- *Houstonia*. ½. June. S. America. 1747.
 -- *maculata*. Mexico. 1863.
 -- *Maunii*. 1. Green. W. Tropical Africa. 1863.
 -- *tubicina*. June. Trinidad. 1817.

Doryanthes. (From *dory*, 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., *Amaryllidæ*; Tribe, *Agaveæ*. Allied to the American Aloe, but not with succulent leaves.)

This gigantic half-lily and half-palm looking plant, with its bundled fleshy roots, seems rather out of place among Amaryllids. This, with its fellows, *Littsea* and *Fourcroya*, can only find head-room in the loftiest conservatories. Green-house evergreen. Suckers and seeds at times; peat and rich loam.

- D. excelsa*. 20. Bracts bright red. Cream. July. N. S. Wales. 1800. B. M. t. 1685.
 -- *Palmeri*. 8. Rich crimson, with white centre. New S. Wales. 1874. B. M. t. 6665.

Dorycnium. (From *dory*, a spear; adopted from Pliny, who applied the name to "a poisonous herb wherewith they poisoned arrow-heads, darts, etc." Nat. ord., *Leguminosæ*; Tribe, *Loteæ*. Allied to *Lotus* and *Trifolium*.)

Pretty, hardy, subshrubby, or herbaceous perennials. Seeds in March; herbaceous ones also by division; common garden-soil.

HARDY HERBACEOUS.

- D. herba-ceum*. 1½. White. July. South Europe. 1802.
 -- *ibericum* and *intermedium* are synonymous with *D. latifolium*.
 -- *latifolium*. 1½. White. July. Iberia. 1818.

HARDY EVERGREEN.

- D. hirsutum*. 3. Red, white. July. South Europe. 1683.

- D. hirsutum inca num*. 3. Red, white. July. S. Europe. 1817. Syn., *D. tomentosum*.
 -- *reticum*. 2. Red. July. South Europe. 1640.
 -- *suffruticosum*. 1½. White. July. South Europe. 1640. Half-hardy. Syn., *D. monspeliense*.
 -- *tomentosum*. See *D. hirsutum*, var. *inca num*.

Doryophora decemlineata. The Colorado Beetle. This beetle, which is a native of the Western United States, committed great havoc among the potato-crops in this country in 1877, but owing to the strenuous measures then adopted, it may now be deemed to be eradicated. An Order in Council then made rendered any persons keeping or distributing living specimens liable, on conviction, to a penalty not exceeding ten pounds. The beetle is of small size, and an orange colour with ten longitudinal black stripes, and an arrow-shaped black mark on the head. Its eggs are laid on the young shoots or leaves of the potato. Paris green, if applied at an early stage, will prevent further mischief.

Doryopteris. (From *dory*, a spear, and *pteris*, a fern; spear-leaved Fern. Nat. ord., *Filices*. Now united to **Pteris**.)

Pretty stove ferns, with yellowish-brown spores. Division, chiefly in spring; peat and loam.

- D. collina*. August. Brazil.
 -- *cordifolia*.
 -- *hastata*. June. W. Indies. 1823.
 -- *palmeta*. ½. July. Caraccas. 1821.
 -- *pedata*. Brazil.
 -- *sagittifolia*. ½. July.
 -- *Walkchii*. E. Ind.

Dossinia. (After *E. P. Dossin*, a Belgian botanist. Nat. ord., *Orchidææ*; Tribe, *Neottieæ*.)

Stove terrestrial orchid, with beautifully marked leaves. For cultivation, see ANECTOCHILUS.

- D. marmorata*. ½. Leaves velvety-green, tinged orange-brown, veined gold. Borneo. Syns., *Anæctochilus Lowii* and *Cheirostylis marmorata*.
 -- *viréscens*. Leaves brighter green. Syn., *Anæctochilus Lowii*, var. *viréscens*.

Double flowers. Hybridizing, aided by cultivation and selection 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 *Ranunculus acronitifolius*; nor bachelor's buttons from the common butter-cup; yet so they are. Double flowers, as they are properly called, are more correctly discriminated as the full flower, the multi-plicate 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 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 (*Aquilegia*) 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 multiplication of the florets of their rays to the exclusion of the florets of the disk. On the contrary, various species of the daisy, matricaria, etc., become full by the multiplication of the florets of the disk.

The *multiply 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. Linnaeus gives instances of the conversion of the calyx into petals, and these are to be observed in the pink (*Dianthus caryophyllus*), and a few of the alpine grasses.

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, 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 characterize double flowers.

By those 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.

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.

Doucain Stock. See **Stock.**

Dougla'sia. (In memory of the unfortunate *D. Douglas*, botanical traveller in North West America. Nat. ord., *Primulaceae*; Tribe, *Primuleae*. Allied to *Androsace*.)

Extremely rare, hardy, evergreen, alpine plants. Seeds, division; peat and loam. They require protection from excessive moisture during winter.

D. lewigata. One-twelfth. Brilliant purple. Rocky Mountains. B. M. t. 6996.
— *nivalis*. $\frac{1}{2}$. Purple. June. Rocky Mountains. 1827. B. E. t. 1886.

Dove Flower. *Peristéria alata.*

Down'ngia. (Dedicated to *A. J. Downing*, a promoter of horticulture. Nat. ord., *Campanulaceae*; Tribe, *Lobeliaeae*. Allied to *Pratia*.)

Very ornamental hardy annuals. Seeds may be sown in a frame in March, or in the open border in April. *D. pulchella* is used for hanging baskets.

D. elegans. $\frac{1}{2}$. Blue, white. Summer. N.W. America. 1827. Syn., *Clintonia elegans*. B. R. t. 1241.
— *pulchella*. $\frac{1}{2}$. Blue, white, yellow. California. 1827. Syn., *Clintonia pulchella*, B. R. t. 1909.

Dra'ba. (From *drabe*, acrid; referring to one of the universal characters of its Nat. ord., *Cruciferae*; Tribe, *Alyssinoae*. Connected with *Aubretia*, *Alyssum*, and *Cochlearia*.)

Hardy rock or alpine plants. Yellow-flowered, except where otherwise mentioned. Perennials, seeds, and by dividing the roots. Annuals and biennials, by seeds in spring, and under a hand-light, in summer; gritty soil for the tenderest; sandy loam and dry situation for the hardiest. They make interesting pot-plants, treated as alpinists.

ANNUALS.

D. graecibus. $\frac{1}{2}$. June. Kamtschatka. 1827.
— *lu'ca*. $\frac{1}{2}$. June. South Europe. 1920.
— *muralis*. $\frac{2}{3}$. White. June. England. Eng. Bot. ed. 3, t. 135.
— *nemoralis*. $\frac{1}{2}$. June. Europe. 1759.

BIENNIALS.

D. aurea. $\frac{1}{2}$. June. Denmark. 1820. B. M. t. 2934.
— *cine'ra*. $\frac{1}{2}$. White. July. Siberia. 1818.
— *confusa*. $\frac{2}{3}$. White. July. North Europe.
— *dau'rica*. $\frac{1}{2}$. White. July. Dania. 1824.
— *incana*. $\frac{2}{3}$. White. May. Britain. Eng. Bot. ed. 3, t. 136. Syn., *D. contorta*.

HERBACEOUS PERENNIALS.

D. Adami. $\frac{1}{2}$. White. May. Siberia. 1820. Syn., *D. lasiocarpa*.
— *aizoides*. $\frac{1}{2}$. March. Wales. Eng. Bot. ed. 3, t. 138.

- D. aizoon.* ½. May. Carinthia. 1823.
- alpi'na. ½. April. Lapland. 1820.
- silv'culis-pilo'sis. ½. August. Greenland. 1820.
- a'spera. June. Siberia.
- austr'aca. ½. White. June. Austria. 1824.
- brachyst'e'mon. ½. March. Switzerland. 1819.
- brunsi'fo'lia. Yellow. Caucasus. 1820. Gf. t. 780.
- bryoi'des. ½. March. Tauria. 1820.
- cilia'ris. See *D. Wahlenbergii.*
- cilia'ta. ½. White. E. Alps. 1873.
- corymbo'sa. ½. White. May. Baffin's Bay. 1823.
- crassifo'lia. ½. June. N. Amer. 1826.
- cuspid'a'ta. ½. March. Iberia. 1820.
- dasyca'rpa. White. May. Altai. 1837.
- ericæfo'lia. ½. June. Caucasus. 1821.
- Fladnice'nsis. ½. White. June. Switzerland. 1819.
- glacia'lis. ½. June. Siberia. 1826.
- Gmel'ni. ½. June. Siberia. 1823.
- grandif'o'ra. ½. White. May. Altai. 1832.
- helve'tica. ½. August. Switzerland. 1819.
- hirt'a. ½. White. June. North Europe. 1823.
- inco'mpta. ½. April. Caucasus. 1821.
- lappo'nica. ½. White. April. Lapland. 1810.
- lasioc'a'rpa. See *D. Adamsii.*
- Ma'vii. ½. White. Spring. Spain. 1823. B. M. t. 6186.
- murice'lla. ½. White. June. Lapland. 1810.
- niva'lis. ½. White. June. Switzerland. 1824.
- oblonga'ta. ½. White. May. Baffin's Bay. 1823.
- pilo'sa. ½. White. June. Siberia. 1825.
- pyrena'ica. ½. White to purple. May. S. Europe. B. M. t. 713. Syn., *Petrocallis pyrenaica.*
- repens. ½. June. Siberia. 1818.
- rup'e'stris. ½. June. Scotland. Eng. Bot. ed. 3, t. 137.
- Saute'ri. ½. Spring. Switzerland.
- siliquo'sa. ½. White. June. Caucasus. 1822.
- stella'ta. ½. White. June. Pyrenees. 1820. B. C. t. 32.
- tomento'sa. ½. White. June. Switzerland. 1819.
- tridenta'ta. 1. August. Russia. 1838.
- viola'cea. Purple. Quito Andes. 1867. Hardy perennial. B. M. t. 5650.
- Wahlene'rgii. ½. March. Switzerland. 1731. Syn., *D. ciliaris.*

EXCLUDED SPECIES.

- D. præcox.* See *Erophila præcox.*
- verna. See *Erophila verna.*

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., *Liliaceæ.*)

Stove ornamental foliated evergreens, with white flowers, except *D. nutans*. Large pieces of the branches strike when put in strong bottom-heat; rich, fibry loam, well drained.

For numerous other plants known in gardens as *Dracænas*, see under *CORDYLINA*.

GREENHOUSE.

- D. nodo'sa.* 4. 1820.
- nu'tans. 4. Brown. July. N. Holland. 1820.
- undula'ta. 6. Cape of Good Hope. 1816.

STOVE.

- D. angustifo'lia.* India.
- arbo'rea. 30. May. Sierra Leone. 1800.
- argen'teo-stria'ta. Leaves bright green, striped creamy-white and silvery grey. S. Sea Islands. 1888. Perhaps a *Cordylina*.

- D. austr'alis.* B. M. t. 2835. A synonym of *Cordylina australis*.
- Barte'tii. Leaves reddish bronze. Garden variety. 1886.
- Barte'ti. Garden variety. 1888.
- bi'color. White; bracts purplish. Fernando Po. 1861.
- borea'lis. Andr. Rep. t. 206. See *Clintonia borealis*.
- Bo'scii. A synonym of *Agave geminiflora*. B. R. t. 1145.
- brazilie'nsis. 6. Brazil. 1825.
- cannæfo'lia. See *Cordylina cannæfolia*.
- cernua. Jacq. H. Schœnb. t. 96. See *D. reflexa*.
- cincta. Linn. Journ. xiv. p. 530. Syn., *D. gracilis*.
- concinna. 6. Mauritius. 1870.
- cristula. Liberia. 1879.
- cyli'ndrica. 5. White. W. Tropical Africa.
- Dia'na.
- Douce'tii. 1890. A form of *Cordylina indivisa*.
- Dra'co. 40. Greenish-white. Summer. Canary Islands. 1640. B. M. t. 4571. Dragon Tree.
- elliptica. 2½. Yellow. March. Amboyna.
- macula'ta. Leaves spotted. India. B. M. t. 4787.
- ensifo'lia. A synonym of *Dianella ensifolia*.
- Gre'gii. Leaves variegated.
- excel'sa. Garden hybrid.
- fe'rrea. 8. April. China. 1771. B. M. t. 2053.
- floribu'nda. 8. Greenish. Summer. 1879.
- Fontanesia'na. White. Madagascar. 1859. Syn., *D. nigra*.
- fra'grans. 6. White. April. Tropical Africa. 1768. B. M. t. 1081.
- latifo'lia. Pale green. 1862.
- frutico'sa. 10. White. 1862. Syns., *D. guttensis*, *D. cochinchinensis*, *D. ensifolia* and *D. exzelsa* of some gardens.
- Goldie'na. Leaves greyish, with dark green transverse bands. W. Tropical Africa. 1872.
- gra'cilis. See *D. cincta*.
- hy'brida. 1876.
- indivi'sa. See *Cordylina indivisa*.
- interr'u'pla. 2. White. June. Sierra Leone. 1798.
- java'nica. A synonym of *D. elliptica*.
- Lai'ngii. Garden hybrid. 1882.
- latifo'lia. S. Africa.
- Schmidtia'na. White; leaves variegated. 1850.
- leone'nsis. 3. White. June. Sierra Leone. 1824.
- Linde'ni. S. Brazil. 1831. III. Hort. t. 384. Perhaps a variety of *D. fragrans*.
- macula'ta. A synonym of *D. elliptica*.
- madagascari'e'nsis. Madagascar.
- margina'ta. 4. White. August. Madagascar.
- marmora'ta. Leaves bright green, marbled with grey. Singapore. B. M. t. 7078.
- Massangea'na. Belg. Hort. 1881, p. 327, t. 16. Said to be a variety of *D. fragrans*.
- mauritia'na. 4. White. May. Mauritius. 1825.
- mira'bilis. Polynesia. 1880.
- ova'ta. 2. White. August. Sierra Leone. B. M. t. 1180.
- phryni'o'des. White, purple. Fernando Po. 1863.
- pla'cida.
- Ponbellei. Garden variety. Rev. Hort. 1888, p. 530.
- purpu'rea. 15. June. E. Indies. 1820.
- reflex'a. 12. White. June. Mauritius. 1819. Syn., *D. cernua*.
- satific'o'lia. Java. *D. satificifolia* of Gf. 1871, p. 141, is *D. reflexa*.

- D. Saposchnikowii*. 10. Whitish. Spring. 1870.
 — *sepiaria*. White; berries yellow. Fiji. 1887.
 — *Smilthii*. 15. Yellow. W. Tropical Africa? 1875.
 — *spicata*. A synonym of *D. elliptica*.
 — *strophylla*. 1861. Syn., *D. punctata*.
 — *stria*. 4. White. April. S. Africa. 1820.
 — *stricta*. B. M. t. 2575. A synonym of *Cordylone stricta*.
 — *suroculosa*. 4. White. July. Sierra Leone. 1821. B. R. t. 1169.
 — *maculata*. Yellowish. Old Calabar. 1867.
 — *terminalis*. 10. White. S. Sea Islands. Jacq. Ic. t. 448. A synonym of *Cordylone terminatis*.
 — *rubra*. Leaves reddish.
 — *ternstroemia*. A synonym of *D. elliptica*.
 — *tesellata*. Madagascar. 1816.
 — *thalioides*. White. Gaboon. 1860. Syn., *D. Aubryana*.
 — *Thomsoniana*. W. Coast of Africa. 1882.
 — *umbraclifera*. 10. Mauritius. 1788. Jacq. H. Schenb. t. 95.
 — *venosa*. Borneo.
 — *Willdchii*. A synonym of *D. elliptica*. *Willdmsii*. Polynesia.

Dracoc'ephalum. Dragon's Head. (From *drakon*, a dragon, and *kephale*, a head; referring to the gaping flower. Nat. ord., *Labiatae*; Tribe, *Nepeteae*. Allied to *Nepeta*.)

Showy hardy herbaceous perennials and annual plants unless where otherwise mentioned. Annuals by seed in the open ground at the end of March; perennials, by seeds and division; evergreens, by cuttings of young shoots under a hand-glass, in April or May; light rich soil.

HARDY ANNUALS.

- D. canescens*. Swt. Fl. Gard. t. 38. See *Lallemantia canescens*.
 — *moldavicum*. 2. Blue. July. Moldavia. 1596.
 — *albiflorum*. 2. White. July. Moldavia. 1596.
 — *peregrinum*. ½. Purple. July. Siberia. 1759. B. M. t. 1084.
 — *thymiflorum*. ½. Purple. July. Siberia. 1752.

GREENHOUSE EVERGREENS.

- D. canariense*. See *Cedronella triphylla*.
 — *chamaedryoides*. See *Sphaecle campanulata*.
 — *origanoides*. ½. July. Siberia. 1829. Trailer.

HARDY PERENNIALS.

- D. altaic'ense*. Swt. Fl. Gard. ser. 2, t. 57. See *D. grandiflorum*.
 — *argente'ne*. 1½. Blue. July. Siberia. 1822. B. C. t. 797.
 — *austriacum*. 1. Blue. June. Austria. 1597. Jacq. Ic. t. 112.
 — *botryoides*. ½. Purple. July. Siberia. 1822.
 — *cordatum*. See *Cedronella cordata*.
 — *denticulatum*. B. M. t. 214. See *Physostegia virginica*.
 — *grandiflorum*. 1. Blue. May. Siberia. 1801. B. M. t. 1009. Syn., *D. altaic'ense*.
 — *ibericum*. See *Lallemantia iberica*.
 — *imberbe*. Siberia. Gf. t. 1080, f. 4-5.
 — *integriflorum*. Blue. July. Siberia. 1827.
 — *mexicanum*. See *Cedronella mexicana*.
 — *nivtans*. 1. Blue. July. Siberia. 1731. B. R. t. 841.
 — *palmatum*. 1½. Purple. July. Siberia. 1815.
 — *parviflorum*. ½. Blue. July. N. Amer. 1825.
 — *pellatum*. See *Lallemantia peltata*.

- D. pinna'tum*. Blue. June. Siberia. 1822.
 — *Ruprechtii*. 1½. Blue. Turkestan. 1880. Gf. t. 1018.
 — *Ruyschii'num*. 2. Blue. July. North Europe. 1699.
 — *japonicum*. White, blue. Japan. 1879.
 — *sibiricum*. B. M. t. 2185. See *Nepeta macrantha*.
 — *speciosum*. 1½. Purple, white. June. Himalaya. 1877. B. M. t. 6281.
 — *virginiana*. B. M. t. 467. See *Physostegia virginiana*.

Drac'ontium. Dragon. (From *drakon*, a dragon; referring to its spots and streaks being like those on serpents. Nat. ord., *Aroideae*; Tribe, *Orontieae*. Allied to *Pothos* and *Orontium*.)

Stove tuberous perennials. Dividing the roots; fibry loam, and a little decayed dung and leaf-mould. More curious than beautiful.

- D. albobis'pes*. 3. Antioquia. 1877.
 — *annulatum*. 3. Antioquia. 1877.
 — *asperum*. 5. Spathe purple; spadix purple-brown. Syn., *D. elatum*, *Amorphophallus nivosus*, Ill. Hort. t. 424, and *Sauroratum asperum*.
 — *Carderi*. 3. Spathe green outside, purple-brown within. Spring. Antioquia. 1877.
 — *faecundum*. Purple. British Guiana. 1882. B. M. t. 6808.
 — *gigas*. 10. Dark brownish-red. Nicaragua. 1869. Syn., *Godwinia gigas*. B. M. t. 6048.
 — *lanco'sofolium*. Jacq. Ic. t. 612. See *Spathiphyllum lanco'sofolium*.
 — *pertusum*. Jacq. H. Schenb. t. 184-5. See *Monstera pertusa*.
 — *polyphyllum*. 2. May. India. 1759. B. R. t. 700.
 — *sculpturatum*. 3. Antioquia. 1879.
 — *spinosum*. 2. April. Ceylon. 1759.

Dracophyllum. (From *drakon*, a dragon, and *phyllo'n*, a leaf; referring to the long bracts, which resemble the young leaves of the Dragon-plant, *Draca'ena dra'co*. Nat. ord., *Epacridaceae*; Tribe, *Epacraeae*. Allied to *Richea*.)

Greenhouse evergreens, from Australia. Cuttings of young wood, getting firm at the base, in April; peat and loam, both fibry, with a little silver sand.

- D. capitatum*. 1½. White. Summer. West Australia. 1830. B. M. t. 3624. Syn., *Sphenotoma capitatum*. B. R. t. 1515.
 — *gracile*. 3. White. June. West Australia. 1826. B. M. t. 2678. Syn., *Sphenotoma gracile*.
 — *longiflorum*. 2. White. June. 1824.
 — *secundum*. 2. White. June. New South Wales. 1823. B. M. t. 3264.

Drac'opis amplexicaulis and var. *minor* (B. M. t. 3716). See *Rudbeckia amplexicaulis*.

Dracu'neulus. (A name used for the plants of this genus from very ancient times. Nat. ord., *Aroideae*; Tribe, *Arineae*. Allied to *Arum*.)

Half-hardy tuberous perennials. Light rich soil.

- D. cre'ticus*. 1½. Spathe purple-brown. Crete. 1860.
 — *vulgaris*. 1½. Spathe purple-brown. June. S. Europe. 1548. Syn., *Arum Dracunculus*.

Dragon. *Draco'ntium* and *A'rum draco'ntium*.

Dragon's-blood. *Ca'lamus Dra'co*, *Dracæ'na Dra'co*, and *cinnabari'na*, and *Pterocarpus Dra'co*.

Dragon's-Head. *Dracoc'e'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 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., *Orchideæ*; Tribe, *Neottieæ - Diurideæ*. Allied to *Caleana*.)

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. elat'ica*. Variegated. September. Swan River.

Drawn. A plant is said to be drawn when it is unnaturally increased in length. This is usually by an access of heat and moisture, and a deficiency of air and light.

Drege'ra. (Derivation not explained. Nat. ord., *Acanthaceæ*.)

Stove evergreen. Seeds. Rough loam, peat, and sand.

D. Willdenowia'na. 3. July. Vera Cruz. 1802. Syn., *Dicliptera scorpioides*.

Drepanocar'pus. The Sickie-pod. (From *drepanon*, sickle, and *carpos*, a

fruit; referring to the shape of the seed-vessel. Nat. ord., *Leguminosæ*; Tribe, *Dalbergiæ*.)

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 fibry.

D. luna'tus. 12. White. Tropical 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 couler-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.

Drimi'a. (From *drimys*, acrid; referring to the juice of the bulbs. Nat. ord., *Liliaceæ*; Tribe, *Scilleæ*. Allied to *Lachenalia*.)

Little greenhouse bulbous plants, from South Africa; elegant, though less showy than the *Ixias*. Offsets; peat, or leaf-mould, and sandy loam. Potted when beginning to grow, and until then kept dry after the withering of the leaf.

D. acumina'ta. See *Scilla lanceæfolia*.

— *altissima*. See *Urginea altissima*.

— *apertifl'ra*. See *Scilla torata*.

— *cilia'ris*. 1½. Purple, white. August. 1800.

— *Cooperi*. Ref. Bot. t. 18. See *Scilla concolor*.

— *ela'ta*. 2. Red, green. October. 1799.

— *haworthio'ides*. ½. White, green. S. Africa. 1875.

— *lanccæfol'ia*. See *Scilla lanceæfolia*. B. C. t. 278 is *Scilla revoluta*.

— *lanccola'ta*. See *Scilla lanceolata*.

— *longipeduncul'a'ta*. Green, purple. September. 1800.

— *me'dia*. White. August. 1820.

— *purpura'scens*. ½. Purple. August. 1818.

— *pusilla*. ¼. Green. May. Cape of Good Hope. 1793.

— *robu'sta*. 3. Green. S. Africa. 1862.

— *undula'ta*. See *Scilla undulata*.

— *villo'sa*. Green. August. 1826. B. R. t. 1346.

Drimio'psis. (From *Drimia*, and *opsis*, resemblance; alluding to its like-

ness to that genus. Nat. ord., *Liliaceæ*; Tribe, *Scilleæ*.)

Greenhouse bulbs. For cultivation, see DRIMIA.

- D. botroyodes*. $\frac{1}{2}$. Greenish-white. Zanzibar. 1875.
- *Ki'riki*. $\frac{1}{2}$. White. Summer. Zanzibar. 1871. B. M. t. 6276.
- *macula'ta*. $\frac{1}{2}$. Green, white. Cape of Good Hope. 1851. Ref. Bot. t. 191.
- *mi'nor*. $\frac{1}{2}$. Pink. Natal. 1862. Ref. Bot. t. 192.
- *perfolia'ta*. $\frac{1}{2}$. Greenish-white. Zanzibar. 1878.

Drimys. (From *drimys*, acrid; referring to the "bitter tonic taste" of the bark, one of the characteristics of its Nat. ord., *Magnoliaceæ*; Tribe, *Winteraceæ*.)

The Winter Bark of commerce is that of *D. Winteri*, a good substitute for cinnamon. Half-hardy or 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; fibry peat and sandy, lumpy loam.

- D. aroma'tica*. 10. White, pink. April. Tasmania. Syn., *Tasmania aromatica*. B. R. 1845, t. 48.
- *chilensis*. June. S. America. Syn. *D. Winteri* of B. M. t. 4800.
- *granatensis*. S. America. Syn., *D. mexicana*.
- *Winteri*. 25. Pure white. S. America. 1827. Syn., *Wintera aromatica*.

Dropwort. *Spiræa filipe'ndula* and *Potentilla filipe'ndula*.

Dro'sera. Sundew. (From *droseros*, dewy. Nat. ord., *Droseraceæ*.)

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 dew-drops. We have often viewed *D. rotundifolia* with amazement, on the opposite side of a little pool, arrayed in hundreds of little stars, and sparkling beneath a midday 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. Greenhouse unless otherwise stated.

- D. acutis*. $\frac{1}{2}$. White. July. Cape of Good Hope. 1823.
- *americana*. See *D. intermedia*, var. *americana*.
- *anglica*. $\frac{1}{2}$. White, red. July. England. Hardy.
- *binda'ta*. $\frac{1}{2}$. White. July. New S. Wales, etc. 1821. B. M. t. 3082.
- *capensis*. $\frac{1}{2}$. Purple? S. Africa. 1875. B. M. t. 6585.
- *cistiflora*. Rose-red, scarlet, violet, or white. S.W. Africa. 1889. B. M. t. 7100. Syn., *D. violacea*.
- *dichotoma*. $\frac{1}{2}$. White. Australia. G. C. 1875, iv. p. 184.
- — *rubra*. Red-leaved var. $\frac{1}{2}$. White. 1880.
- *erythrorhiza*. White. July. Swan River. 1843.
- *filicaulis*. Rose. May. Swan River. 1841.
- *filiformis*. $\frac{1}{2}$. Purple. July. New Jersey. 1811. B. M. t. 3540.
- *gigantea*. White. July. Swan River.
- *intermedia*. $\frac{1}{2}$. White, red. July. Britain. Eng. Bot. ed. 3, t. 184. Syn., *D. longifolia*. Hardy.
- — *americana*. $\frac{1}{2}$. White. July. N. America. Syn., *D. americana*.

- D. linearis*. $\frac{1}{2}$. Purple. July. Canaan. 1818. Hardy.
- *longifolia*. See *D. intermedia*.
- *macrantha*. Rose. July. Swan River.
- *macrophylla*. White. July. Swan River. 1842. Ic. Pl. t. 376.
- *pa'llida*. White. July. Swan River. 1843.
- *pauciflora*. $\frac{1}{2}$. White. July. Cape of Good Hope. 1823.
- *pelta'ta*. White. New S. Wales. G. C. 1883, xix. p. 463. Syn., *D. lunata*. Ic. Pl. t. 54.
- *rotundifolia*. $\frac{1}{2}$. White. July. Britain. Eng. Bot. ed. 3, t. 182. Hardy.
- *spathulata*. Purple. Australia. 1861. B. M. t. 5240.
- *stolonifera*. White. July. Swan River. Ic. Pl. t. 389.
- *viola'cea*. See *D. cistiflora*.
- *Wittakerii*. White. Australia. 1862.

Drosophyllum. (From *drosos*, dew, and *phyllon*, a leaf; referring to the minute dew-like drops that exude from the glands which everywhere cover the leaf. Nat. ord., *Droseraceæ*.)

A pretty greenhouse plant, with linear leaves and bright yellow flowers. It is interesting as forming one of the group of carnivorous plants; the dew-like drops are very viscid, and flies that settle upon the leaves are held tight by this sticky matter, and the juices of their bodies absorbed and digested by the glands, in a similar way to the process of digestion in animals. Light sandy loam; keep rather dry. Seeds. No shade required.

- D. lusitanicum*. 1. Bright yellow. April Spain, Portugal. 1869. B. M. t. 5796.

Drummondia mitelloides. See *Mitella pentandra*. B. M. t. 2933.

Drupe. A fruit with succulent mesocarp, and bony endocarp, e.g., cherry, apricot, etc.

Dryandra. (Named after *Dryander*, a Swedish botanist. Nat. ord., *Proteaceæ*; Tribe, *Banksiæ* 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; fibry peat and fibry loam, with a portion of sand, broken potsherds, and a few pieces of charcoal; pots particularly well drained.

- D. aretoides*. 1830. B. M. t. 4035.
- *armata*. 3. 1803. B. M. t. 3236. Syn., *D. javosa*.
- *Baetleri*. 3. 1824.
- *bipinnatifida*. 1840.
- *blechnifolia*. See *D. pteridifolia*.
- *calophylla*. 1830.
- *cardua'cea*. 3. April.
- — *angustifolia*. 3. April. B. M. t. 4317.
- *cuneata*. 3. June. 1803.
- — *brevifolia*. 3. June. 1803.
- — *longifolia*. 3. June. 1803.
- *falca'ta*. 3. June. 1824. Syn., *Hemistidia Baetleri*.
- *favo'sa*. See *D. armata*.
- *floribunda*. 3. 1808.
- *foliolata*. 1830.
- *formosa*. 4. 1803.
- *Fraseri*. 1840.
- *longifolia*. 2. 1803.
- *mucronata*. 3. 1824.

- D. nervosa*. B. M. t. 3063. See *D. pteridifolia*.
- *ni'oca*. 2. 1805.
- *no'bilis*. 1840. B. M. t. 4633.
- *obtu'sa*. 2. 1803.
- *plumo'sa*. 3. 1803.
- *protoi'des*. 1840.
- *pteridifolia*. 1½. 1824. B. M. t. 3500. Syns.,
D. blechnifolia and *nervosa*.
- *runcinata*. 1852.
- *seneciifolia*. 3.
- *se'rra*.
- *stupo'sa*. 1840.
- *tenuifolia*. 2. April. 1803. B. M. t. 3513.

Dry'as. (From *Dryades*, the goddesses of the woods, to whom the oak was sacred. The leaves of *D. octope'ala*, 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., *Rosaceæ*; Tribe, *Potentilleæ*. 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 calcareous soil on the rockery suit them best.

HARDY EVERGREENS.

- D. interme'dia*. ½. N. Amer. 1832.
- *octope'tala*. ½. Britain. Eng. Bot. ed. 3, t. 460.
- — *america'na*. ½. N. Amer. 1800.

HARDY HERBACEOUS.

- D. decape'tala*. N. Amer. 1839.
- *geoi'des*. Jacq. Vind. iii. t. 68. See *Coluria geoides*.
- *mi'nor*. ½. N. Amer.
- *octope'tala depr'e'ssa*. ½. Ireland.

HALF-HARDY EVERGREENS.

- D. Drummo'ndi*. ½. Yellow. N. Amer. 1828. B. M. t. 2979.
- *integrifolia*. ½. Greenland. 1824.
- *tene'lia*. ½. Canada. 1820.

Drymo'da. (From *drymodes*, woody; probably because the plants grow on the branches of trees. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Dendrobieæ*.)

A minute stove epiphytcal orchid which requires to be grown on blocks. For cultivation, see ORCHIDS

- D. pi'cta*. Greenish, purple. March. Moulmein. 1870. B. M. t. 5904.

Drymoglo'ssum. The Wood-tongue. (From *drymos*, a wood, and *glossa*, a tongue; alluding to the place of growth and form of the fronds. Nat. ord., *Filices*. Allied to *Polypodium*.)

Stone creeping ferns; spores yellow. Division; peat and loam.

- D. carno'sum*. Australia.
- — *subcordatum*. China and Japan.
- *lanceola'tum*. June. India. 1843.
- *piloselloi'des*. June. E. Ind. 1823.
- *ri'gidum*. Borneo.
- *spatula'tum*. E. Ind.

Drymo'nia. (From *drymonia*, woodland; their habitation. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandrea*. Allied to *Besleria*.)

Stove evergreen climbers. Cuttings in sandy soil, in bottom-heat; rich sandy loam.

- D. bi'color*. B. R. 1838, t. 4. See *D. serrulata*.
- *crista'ta*. Green. October. Guiana. 1843. Fl. Ser. t. 388.
- *marmora'ta*. Pale yellow, suffused with pink. June. Tropical America. 1882. B. M. t. 6763.
- *puncta'ta*. B. M. t. 4089. See *Episcia punctata*.
- *serrula'ta*. 6. Purple. W. Indies. 1806. Syn., *D. bicolor*.
- *turid'loæ*. White. Veragua. 1870.
- *villo'sa*. B. M. t. 4866. See *Episcia villosa*.

Drymophloe'us. (From *drumos*, wood, and *phloeos*, bark. Nat. ord., *Palmeæ*.)

- Ornamental stove palms. Strong loam; seeds.
- D. ceras'e'nis*. A synonym of *D. olivæformis*.
- *olivæ'rmis*. 30. Moluccas. Syn., *Ptychosperma Rumphii*.
- *Ru'mphii*. Buitenzorg. Syn., *D. leprosus*.
- *singapore'nis*. Singapore. Syn., *Ptychosperma singaporensis*.

Dryna'ria. (From *drys*, a tree; dwelling among trees. Nat. ord., *Filices*. A section of *Polypodium*.)

A larg genus of stove Ferns, with brownish-yellow spores. Allied to *Polypodium*. Division; peat and loam.

- D. a'lbido-squama'ta*. June. Isle of Luzon.
- *Billardi'ri*. 1. June. N. Holland. 1824.
- *cæspito'sa*. April. India. 1841.
- *capitela'ta*. July. S. Amer. 1822.
- *cori'cea*. June. India. 1840.
- *có'romans*. June. W. Ind.
- *crassifolia*. August. W. Ind. 1823.
- *cuspidiflora*. June. Isle of Luzon.
- *diversifolia*. July. Australia.
- *du'bia*. June. Isle of Luzon.
- *glau'ca*. Isle of Luzon.
- *hemioniti'dea*. 2. Yellow. March. E. Ind. 1843.
- *Horsfe'ldii*. Yellow. Java.
- *trioi'des*. 3. June. E. Ind. 1824.
- *juglandifolia*. 1½. May. S. Amer. 1822.
- *leiorhi'za*. March. E. Ind.
- *lomarioi'des*. Isle of Luzon.
- *longifrons*. Isle of Luzon.
- *longipes*. E. Ind. 1823.
- *longissima*. Isle of Luzon.
- *lorifl'ormis*. March. E. Ind.
- *morbilo'sa*. Malay Archipelago.
- *muscefo'lia*. Malay Archipelago.
- *negle'cta*. Isle of Luzon.
- *norma'lis*. March. Nepaul.
- *palma'ta*. Isle of Luzon.
- *plantagi'nea*. June. E. Ind. 1842.
- *propinqua*. May. E. Ind.
- *pustula'ta*. 1. March. Manilla. 1840.
- *quercifolia*. 1½. March. Isle of Luzon. 1824.
- *ru'bia*. Isle of Luzon.
- *rupe'stris*. Isle of Luzon.
- *sesquipedalis*. May. Nepaul.
- *stenophylla*. March. Java.
- *subfalca'ta*. Isle of Luzon.
- *tenuilo'ris*. Mindanao.
- *undula'ta*. Isle of Luzon.
- *vulga'ris*. March. W. Ind. 1816.
- *Walli'chii*. March. E. Ind.

Dryoba'lanops. Camphor-tree. (From *drys*, a tree, and *ballo*, to flow; from the tree yielding much sap. Nat. ord., *Dipterocarpeæ*.)

A stove evergreen tree, which produces the chief of the natural camphor imported. We say natural

camphor, because camphor is now manufactured from turpentine. Rich loam. Seeds.

D. aromatica. 100. Yellow. Sumatra. Syn., *D. camphora*.

Dryopteris. (From *drys*, a tree, and *pteris*, a fern. Nat. ord., *Filices*. A genus of stove Ferns. Allied to *Pteris*.)

Division; peat and loam.

D. sagittifolia. Yellow. April. E. Ind.

Dryostachyum. (From *drys*, a tree, and *stachys*, a spike. A genus of Stove Ferns, with yellow spores. Nat. ord., *Filices*. Allied to *Drynaria*.)

Divisions; peat and loam.

D. caudatum. May. Celebes. 1842.

— *pilosum*. May. Isle of Luzon. 1841.

— *splendens*. May. Isle of Luzon. 1842.

Drypetes. (From *drypto*, to lacerate; being a spiny shrub. Nat. ord., *Euphorbiaceæ*; Tribe, *Phyllanthææ*. Allied to *Sarcococca*.)

Stove evergreen shrub. Cuttings in sandy loam, under a glass, in heat; peat and loam, both fibry and sandy.

D. crocea. 6. June. W. Ind. 1820.

Drypis. (From *drypto*, to lacerate; leaves armed with spines. Nat. ord., *Caryophyllaceæ*; Tribe, *Silenææ*. 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. spinosa. 3. Pale blue. June. Italy. 1775. B. M. t. 2216.

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**.

Dubbing is a gardener's term for clipping. The *dubbings* of a hedge are the parts clipped off with the shears.

Duck's-foot. *Podophyllum*.

Duma'sia. (Named after *M. Dumas*, one of the editors of *Annales des Sciences Naturelles*. Nat. ord., *Leguminosæ*; Tribe, *Phaseolææ*. Allied to *Clitoria*.)

Greenhouse evergreen twiner from Nepal, both introduced in 1824. Seeds sown in a hot-bed, in spring; cuttings of young shoots getting firm, under a glass, and in sand, in a little bottom-heat, in April; sandy peat and fibry loam.

D. pubescens. 6. Yellow. October. B. R. t. 962.

— *villosa*. 6. Pale yellow. October.

Dumb-Cane. *Cala'divum Seguinum*.

Dumeri'lla *paniculata*. See *Jungia spectabilis*.

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 fertilizing 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 fertilizers, 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 pulverized, 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, etc., 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."

Foul-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 fertilizers.

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. Sausurre 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), 6¼; chalk (carbonate of lime), 1; silica (flint), 61½; metallic oxide (principally iron), 1; loss, 7.45ths. 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, etc., 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 farm-

yard, 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 farm-yards 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 dung-hill 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 fertilizer employed by the Peruvians, almost as long as that part of the New World has been recognized 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 analyzed by Dr. Ure, who reports it as composed of the following proportional constituents: Azotized 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, etc., 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.

Dura'nta. (Named after *C. Durantes*, a physician and botanist. Nat. ord., *Verbenaceæ*; Tribe, *Verbenææ*.)

Handsome stove evergreen shrubs, with blue flowers. Cuttings in sand, under a bell-glass, in bottom-heat; loam and peat.

- D. argentea*, 6. E. Ind. 1824.
- *dentata*. See *D. Plumieri*.
- *Ellisia*. B. M. t. 1759. See *D. Plumieri*.
- *inermis*. See *D. Plumieri*.
- *macrocarpa*. 6. W. Ind. 1818.
- *microphylla*. Blue. Autumn.
- *Mutisii*. 6. W. Ind. 1820.
- *Plumieri*. 15. October. Tropical America and W. Indies. 1733. Jacq. Ic. t. 502. B. R. t. 244. Syns., *D. dentata*, *D. Ellisia*, *D. inermis*, and *D. xalapensis*.
- — *alba*. White; fruit amber. G. C. 1888, iii. p. 45, f. 9.
- *stenostaehya*. 10. Whites. Brazil. 1876.
- *xalapensis*. See *D. Plumieri*.

Du'rio. (From *Duryon*, the Malay name of the fruit, "one of the most

delicious productions of nature." Nat. ord., *Malvaceæ*; Tribe, *Bombaceæ*. 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, under a glass, and in bottom-heat; peat, loam, and leaf-mould.

- D. zibethinus*. 60. Whites. E. Ind. 1825. Linn. Trans. vii. tt. 14-16.

Duvalia. (Named after *H. A. Duval*, of Paris; author of a work on succulent plants. Nat. ord., *Asclepiadaceæ*; Tribe, *Stapelieæ*. Allied to *Stapelia*.)

Very dwarf greenhouse succulent perennials, natives of South Africa. All with dark purple-brown flowers, unless otherwise stated. For cultivation, see *STAPELIA*, under which generic name they are usually cultivated, though they are very distinct in the structure of their flowers.

- D. angustiloba*. Chocolate brown, white. Karoo, S. Africa. 1875.
- *cæspitosa*. S. Africa. 1790. Syn., *Stapelia cæspitosa*.
- *Corderoyi*. Olive-green, or purple-brown, with lilac hairs on the central part. 1874. B. M. t. 6082. Syn., *Stapelia Corderoyi*.
- *elegans*. † Purple. August. S. Africa. 1795. Syn., *Stapelia elegans*, B. M. t. 1184.
- *glomerata*. † Brown. August. S. Africa. 1804. Syn., *Stapelia glomerata*.
- *hirtella*. † Brown. August. S. Africa. 1800. Syn., *Stapelia hirtella*.
- *Jacquiniana*. † Purple. August. S. Africa. 1802. Syn., *Stapelia Jacquiniana*.
- *levigata*. † Brown. August. S. Africa. 1800. Syn., *Stapelia levigata*.
- *mastodes*. 1800.
- *poliata*. 1876. B. M. t. 6245.
- *radiata*. Syn., *Stapelia radiata*, B. M. t. 619.
- *reclinata*. 1795. Syn., *Stapelia reclinata*, B. M. t. 6082.
- *replicata*. 1806.
- *tuberculata*. 1774.

Duvau'a. (After *Duvau*, a French botanist. Nat. ord., *Anacardiaceæ*; Tribe, *Anacardiææ*. Allied to *Schinus*.)

Fine evergreens, requiring greenhouse protection north of London.

- D. dentata*. 20. White. Juns. Owyhee. 1795. Syn., *Schinus dentatus*, B. R. t. 620.
- *dependens*. 20. Whites. Chili. 1790. B. R. t. 1673.
- *latifolia*. 20. Yellowish. June. Chili. 1830. B. R. t. 1580.
- *longifolia*. 3. Pale yellow. Juns. Buenos Ayres. 1835. B. R. 1843, t. 59.
- *ovata*. 6. Greenish. Chili. 1824. B. R. t. 1568.

Dwarf Fan-palm. *Chamaerops humilis*.

Dwarf Standard is a fruit-tree on a very short stem, with its branches untrained.

Dyckia. (Named in honour of *Prince Salm-Dyck*, a German author of a splendid work on Succulents. Nat. ord., *Bromeliaceæ*; Tribe, *Pitcairniææ*. 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.

- D. altissima*. Orange. September. Buenos Ayres.
 — *argentea*. 2. Leaves covered with hoary scales.
 — *brevifolia*. Yellow. Brazil. 1869.
 — *frigida*. Orange. February. S. Brazil. 1877. B. M. t. 6294. Syns., *Pourretia frigida* and *Dyckia regalis*.
 — *Lemaireana*. Orange-red. S. Brazil. 1874.
 — *leptostachya*. Scarlet. Paraguay. 1867.
 — *raviflora*. 2. Orange. June. Brazil. 1832.
 — *regalis*. See *D. frigida*.

Dyer's Green-weed. *Geni'sta tinctoria*.

Dyer's Yellow-weed. *Reseda luteola*.

Dy'spis. (From *dup'to*, to dip. Nat. ord., *Palmeæ*.)

Stove Palms.

- D. Hildebrandtii*. Madagascar.
 — *madagascariensis*. Madagascar.
 — *pinnatifrons*. Madagascar.

Dyso'dia. (From *dusodes*, ill-smelling; a characteristic of this genus. Nat. ord., *Compositæ*; Tribe, *Helenoideæ*.)

- D. chrysanthemoides*. S. United States and Mexico. Syns., *Tagetes papposa* and *T. pumila*.
 — *grandiflora*. 1. Deep orange. Central America. Syns., *Berbera incana*, B. R. t. 1602, *Clomenocoma montana*, *Comacelinum aurantiacum*, Fl. Ser. t. 756, and *Dysodia pubescens*.

Dysophylla. (From *dusodes*, fetid, and *phyllon*, a leaf; referring to the strong peppermint-like smell of the leaves. Nat. ord., *Labiatae*; Tribe, *Satureineæ*. Allied to Mint.)

Division of the roots, just as fresh growth is commencing, in spring; common, sandy soil.

- D. pumila*. ½. Purple. August. Nepal. 1826. Hardy herbaceous. Syn., *Mentha verticillata*, of B. M. t. 2907, but not elsewhere.
 — *quadriflora*. 2. Purple. July. Nepal. 1820. Greenhouse evergreen.
 — *stellata*. 1. Purple. India. 1816. Greenhouse herbaceous. B. R. 1845, t. 23.
 — *verticillata*. Lilac. Nepal. 1828. Greenhouse herbaceous.

Dyssochro'ma. (From *dussoos*, sickly, and *chroma*, colour; in reference to the sickly green colour of the flowers. Nat. ord., *Solanaceæ*; Tribe, *Cestrineæ*. Allied to *Juanulloa*.)

Greenhouse shrubs. Seeds. Cuttings in heat under a glass; rich loam and sand.

- D. eximia*. Green. June. Syns., *Brugsmansia eximia* and *Juanulloa eximia*, B. M. t. 5092.
 — *viridiflora*. 3. Green. S. America. 1815. Syn., *Solandra viridiflora*, B. M. t. 1948.

E.

Eari'na. (From *earinos*, the spring, the time of their blooming. Nat. ord.,

Orchideæ; Tribe, *Epidendreae-Caelogynae*.)

Stove orchids, from New Zealand. Division of the plants when fresh growth is commencing; sphagnum-moss and fibry 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. mucronata. White. May. 1845. Ic. Pl. t. 481.

— *suaveolens*. White. May 1843

Ear-shelled Slug. See *Testacella haliotidea*.

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 magnesia. See **Soil**.

Earthing-up, or drawing the soil in a ridge to the stems of plants, is beneficial to those which are 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 hypogaea*.

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. (From *ebenos*, ebony. Nat. ord., *Leguminosæ*.)

Hardy or half-hardy herbs or sub-shrubs. For cultivation, see **ANTHYLLIS**.

E. cretica. 1½. Pink. June. Candia. 1737. Swt. Fl. Gard. ser. 2, t. 260. Syn., *Anthyllis cretica*, B. M. t. 1092.

— *Sibthorpii*. ½. Pink. June. Greece. 1786. Syn., *E. pinnata*, Sibth. Fl. Gr. t. 740.

Ebermaie'ra. (Named after *Karl Heinrich Ebermaier*, author of a work

on medicinal plants. (Nat. ord., *Acanthaceæ*; Tribe, *Nelsoniæ*.)

Stove herbs. For cultivation, see *ERANTHEMUM*.

E. nitida. Brazil, 1879. Syn., *Chamæranthemum nitidum*.

E'bony. *Diospyros ebe'num*.

Ecastaphyllum. See *Pterocarpus*.

Ecballium. Squirted Cucumber. (From *ekbalo*, to cast out; because the seeds are violently expelled from the ripe fruit. Nat. ord., *Cucurbitaceæ*; Tribe, *Cucumerinæ*.)

The Squirted Cucumber is so called from the remarkable way in which it squirts out the seeds, along with the semi-fluid contents of the fruit. When the fruit is quite ripe a very slight touch causes it to separate from its stem, and by the violent elastic contraction of the pericarp, or rind of the fruit, the contents are ejected from the opening made by its separation from the stem. It is a native of S. Europe, and is usually treated as a hardy annual, though it is really a perennial, and if its roots are protected from the frost they will produce stems annually.

E. Elaterium. Yellowish. Trailer. Bent and Tr. t. 115. Syns., *E. agreste* and *Momordica elaterium*, B. M. t. 1914.

Eccremocar'pus. (From *ekkremes*, pendent, and *karpos*, fruit; referring to the position of the seed-pods. Nat. ord., *Bignoniaceæ*; Tribe, *Jacarandææ*. Syn., *Calampelis*.)

Half-hardy evergreen climbers, with orange flowers. Seeds sown in heat, in February, will produce plants that 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 in a dry place, and plant again in May; any light, fertile soil.

E. longiflorus. 6. July. Peru. 1825.
— *scaber*. 6. July. Chili. 1824. B. M. t. 6408. Syn., *Calampelis scaber*, Swt. Fl. Gard. ser. 2, t. 30.

Echardia. See *Peristeria*.

Echeandia. (Derivation unknown. Nat. ord., *Liliaceæ*; Tribe, *Asphodeleæ*. Allied to *Anthericum*.)

Division, and, it is believed, by seeds; peat and loam; greenhouse and cold pit culture.

E. ternstro'ra. Golden. July. Mexico. 1837. Red. Lil. t. 313.

Echeve'ria. (After *M. Echeveri*, a botanical draughtsman. Nat. ord., *Crassulaceæ*. Now united 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; a bell-glass, if not kept close, will do them good, and also a little bottom-heat; sandy loam, peat, and lime-rubbish

E. abyssinica. See *Sempervivum chrysanthum*.
— *acutifolia*. Scarlet. Mexico. B. R. 1842, t. 29.
— *agavoides*. Fl. Ser. t. 2003. See *Cotyledon agavoides*.
— *atropurpurea*. See *Cotyledon atropurpurea*.
— *bracteolata*. A synonym of *Cotyledon bracteolata*.
— *cæspitosa*. See *Cotyledon cæspitosa*.
— *californica*. See *Cotyledon californica*.
— *campanulata*. See *Cotyledon cæspitosa*.
— *carnicolor*. See *Cotyledon carnicolor*.
— *coccinea*. See *Cotyledon coccinea*.
— *Corderoyi*. See *Cotyledon Corderoyi*.
— *Desmetiana*. A synonym of *Cotyledon Peacockii*.
— *farinosa*. A synonym of *Cotyledon farinosa*.
— *fulgens*. Lem. Jard. Fl. t. 244. See *Cotyledon fulgens*.
— *gibbiflora*. B. R. t. 1247. See *Cotyledon gibbiflora*, var. *metallica*.
— *glauca*. See *Cotyledon glauca*.
— *glauco-metallica*. Hybrid between *Cotyledon glauca* and *C. gibbiflora* var. *metallica*. 1868.
— *grandiflora*. Swt. Fl. Gard. t. 275. See *Cotyledon gibbiflora*.
— *la'za*. See *Cotyledon cæspitosa*.
— *hurida*. B. R. 1841, t. 1. A synonym of *Cotyledon lurida*.
— *metallica*. See *Cotyledon gibbiflora*, var. *metallica*.
— *Peacockii*. } See *Cotyledon Peacockii*.
— *peruviana*. }
— *pulverulenta*. A synonym of *Cotyledon pulverulenta*.
— *pumila*. See *Cotyledon pumila*.
— *racemosa*. B. M. t. 3570. A synonym of *Cotyledon lurida*.
— *retusa*. B. R. 1847, t. 57. See *Cotyledon retusa*.
— *rosea*. A synonym of *Cotyledon secunda*.
— *rosea*. B. R. 1842, t. 22. See *Cotyledon roseata*.
— *scaphylla*. A hybrid between *Cotyledon agavoides* and *C. linguifolia*. 1872.
— *Scheeri*. B. R. 1845, t. 27. A synonym of *Cotyledon Scheeri*.
— *secunda*. B. R. 1840, t. 57. A synonym of *Cotyledon secunda*.
— *stolonifera*. See *Cotyledon stolonifera*.

Echi'dnium. (From *echidnion*, a young viper; because of its relationship to *Dracontium*. Nat. ord., *Araceæ*.)

Stove tuberous-rooted perennial. For cultivation, see *ANCHOMANES*.

E. Regelianum. 1½-3. Purplish-brown. June. Brazil. 1866. Syn., *E. Spruceanum* of gardens.

Echidno'psis. (From *echidne*, a viper, and *opsis*, appearance; from a fancied resemblance of the stems to a serpent. Nat. ord., *Asclepiadaceæ*. Allied to *Boucerosia*.)

Greenhouse succulent perennial. For cultivation, see *STAPELIA*.

E. cereifloris. ½. Yellow. Summer. Abyssinia. 1871. B. M. t. 5930. Syn., *Boucerosia tessellata*.

Echina'cea. (From *echinos*, a hedgehog; referring to the involucre, or scaly envelope of composite flowers. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. Now united to *Rudbeckia*.)

Hardy herbaceous perennials. Division and seeds in spring; common or sandy soil.

- E. angustifolia*. 3. Pink. Texas. 1861. B. M. t. 5281.
 — *columnaris*. Yellow. August. Missouri. B. M. t. 1601.
 — *Dicksonii*. 1. Lilac. August. Mexico. B. R. 1838, t. 27.
 — *du'bia*. Kn. and West, t. 131. See *Isostephane heterophylla*.
 — *heterophylla*. 1½. Purple. October. Mexico. 1829. Swt. Fl. Gard. ser. 2, t. 32.
 — *intermedia*. Paxt. Mag. xv., p. 79. See *Rudbeckia purpurea*, var. *intermedia*.
 — *napifolia*. See *Rudbeckia napifolia*.
 — *purpurea*. See *Rudbeckia purpurea*.
 — *serotina*. See *Rudbeckia serotina*.
 — *speciosa*. See *Rudbeckia speciosa*.
- Echinocactus.** (From *echinos*, hedgehog, and *cactus*. Nat. ord., *Cactaceæ*.)
- Like the genus *Mammillaria*, this of *Melocacti* is encumbered by one-half too many names of species, founded on trifling variations, peculiar either to different ages of the same plants, or to accidental forms from seeds. For culture, see CACTUS.
- E. bota'nsis*. 1. Red. Mexico. Gfl. 1889, p. 106.
 — *centetes*. Yellow. July. Mexico. 1840. B. M. t. 3974.
 — *ceratioides*. Yellow. Chili. 1837.
 — *chlorophthalmus*. Purple. June. Rio del Monte. B. M. t. 4373.
 — *cinnabari'nis*. Red. Bolivia. 1840. B. M. t. 4386.
 — *concoloratus*. Yellow. March. Monte Video. 1828. B. M. t. 4115.
 — *corymbodes*. Yellow. October. S. America. 1837. B. M. t. 3906.
 — *crispatus*. Purple. Summer.
 — *Cum'ngii*. ½. Yellow. Bolivia. 1847. B. M. t. 6097.
 — *cylindraceus*. Yellowish. Colorado. 1877.
 — *durangensis*. Brownish-red. Mexico. 1890.
 — *echidne*. Yellow. Mexico.
 — *echinoides*. Yellow. Bolivia.
 — *electracanthus*. Yellow.
 — *ellipticus*. Rose. Lem. Jard. Fl. t. 270.
 — *excelsus*. White. July. Chili. 1830.
 — *Eyre'sii*. White, yellow. September. Mexico. 1829. B. M. t. 3411.
 — *glaucescens*. White, green. July. B. R. 1838, t. 81.
 — *gibbosus*. ¾. White. West Indies. 1808. B. R. t. 137.
 — *no'bilis*. 2. White. July. Mexico. 1796.
 — *Haselbergii*. Orange-red. 1888. B. M. t. 7009.
 — *Haynii*. 1. Purplish-red. Peru.
 — *helophorus*. Pink.
 — *hexaedrophorus*. White. June. Tampico. B. M. t. 4311.
 — *hystriacanthus*. Yellow.
 — *Jo'dii*. Yellow; stigmas crimson. Uruguay? B. M. t. 6867.
 — *Leed'nis*. Pale sulphur. May. Buenos Ayres. 1840. B. M. t. 4184.
 — *Lin'kii*. Yellow. Mexico.
 — *longhamatus*. ¾. Yellow. July. Mexico. B. M. t. 4632.
 — *Mackia'eus*. Yellow. Chili. 1836. B. M. t. 3561.
 — *macrodiscus*. Mexico.
 — *Malletia'nis*. Yellow.
 — *Mirbe'lii*. Yellow. Summer. Mexico. 1873.
 — *Monvi'llii*. White. Paraguay.
 — *multiflorus*. White. June. B. M. t. 4181.
 — *myriostigma*. B. M. t. 4177. See *Astrophytum myriostigma*.
 — *napi'nis*. Yellow. Chili. 1872.
 — *obovatus*. ¾. Purple, white. S. Mexico.
 — *ornatus*. Yellow. Mexico.
 — *Otto'nis*. Yellow. Mexico. B. M. t. 3107.
- E. pectiniferus*. Pale green, rose. April. Mexico. 1844. B. M. t. 4190.
 — *Pentlandii*. Rose. July. B. M. t. 4124.
 — *Pepinia'nis*. Pink.
 — *Pfeifferi*. Yellow. Mexico.
 — *platyceros*. Yellow.
 — *recl'rusus*. White. June. Mexico.
 — *rhodacanthus*. Mendoza. 1835.
 — *rhodophthalmus*. Crimson. August. Potosi. 1850. B. M. t. 4486.
 — *robu'stus*. Yellow. Mexico.
 — *so'pa*. Yellow. April. Brazil. B. R. 1839, t. 24.
 — *se'nilis*. Light pink. Chili. Gfl. t. 1230, fig. a.
 — *sessiliflorus*. Yellow. B. M. t. 3569.
 — *setispinus*. Yellow. Red. Texas.
 — *Simpso'ni*. Yellowish-green, or purplish. Colorado. 1876.
 — *spira'lis*. June. Mexico. 1838.
 — *streptocaulon*. 1½. Yellow. August. Bolivia. 1845. B. M. t. 4562.
 — *tenuispinus*. Lemon-yellow. July. B. M. t. 3963.
 — *tetraxipus*. Mexico.
 — *texensis*. Rosy-pink. Texas. 1888. Gfl. 1286.
 — *tubiflorus*. White. Mexico. 1836. B. M. t. 3627.
 — *viridescens*. 5. Greenish. California. 1877.
 — *Viana'ga*. Yellow, pink. Mexico. 1844. B. M. t. 4559.
 — *Willia'msii*. White. June. Mexico. 1845. B. M. t. 4296.
 — *Zuccari'ni*. White. Mexico. 1836.
- Echinocereus.** (From *echinos*, a hedgehog, and *Cereus*. Nat. ord., *Cactaceæ*. Now united with *Cereus*.)
- E. pectinatus*. See *Cereus pectinatus*.
 — *robu'stus*. 1. Rose, white. Mexico. 1890. Gfl. t. 1331.
- Echinops.** Globe Thistle. (From *echinos*, hedgehog, and *opsis*, like; referring to the spiny scales of the involucre, or envelope of composite flowers. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*. Allied to *Carlina*.)
- Beautiful hardy perennials. Bees are very partial to these plants. Seeds, division in March; common soil.
- E. banna'ticus albus*. White. Hungary. 1832.
 — *cristatus*. Cream, white. July. Bolivia.
 — *dahuricus*. 3. Blue. August. Dahuria. 1828.
 — *exaltatus*. 6. White. July. Austria. 1817. Syn., *E. strictus*.
 — *glaberrimus*. Blue. August. Sinai. 1830.
 — *Gmel'ni*. White, blue. 1835.
 — *græ'cus*. 2. Blue. July. Levant. 1736. Syn., *E. lanuginosus*.
 — *hu'milis*. 1½. Blue. June. Caucasus. 1816.
 — *lanuginosus*. Sibth. Fl. Gr. t. 925. See *E. græ'cus*.
 — *paniculatus*. B. R. t. 356. See *E. sphærocephalus*, var. *glabratus*.
 — *pe'rscicus*. White. August. Persia. 1821. Syn., *E. pungens*.
 — *platylepis*. September. 1835.
 — *pungens*. See *E. persicus*.
 — *Ri'tro*. 3. Blue. July. S Europe. 1570. B. M. t. 932.
 — *ruthenicus*. 3. Blue. July. Russia. 1816. G. C. 1873, p. 331.
 — *tenuifolius*. 2. Blue. June. Europe. 1820. Syn., *E. tenuifolius* and *virgatus*.
 — *sphærocephalus*. 1-4. Pale blue. Summer. E. Europe.
 — *glabratus*. 3. Blue. July. Spain. 1815. Syn., *E. paniculatus*.

- E. striatus*. B. M. t. 2457. See *E. exaltatus*.
 — *strigosus*. Blue. Spain. 1729. B. M. t. 2109.
 — *tauricus*. 4. Blue. August. Tauria. 1816.
 — *tenuifolius*. Se. *E. Ritro*, var. *tenuifolius*.
 — *Tournefortii*. Caucasus. 1835.
 — *virgatus*. See *E. Ritro*, var. *tenuifolius*.

Echinoglossum. The species are included under **Cleisostoma**.

Echinospsis. (From *echinos*, hedgehog, and *opsis*, like; referring to the spines which clothe its globular stem. Nat. ord., *Cactaceæ*. A synonym of **Cereus**.)

Stove cacti. Light loam, a little leaf-mould, and a few lumps of lime-rubbish, and well drained. Water sparingly in winter, during which the air must be kept dry.

- E. campylacantha*. B. M. t. 4567. Synonymous with *Cereus leucacanthus*.
 — *cristata*. 3. Purple. May. Bolivia. B. M. t. 4521 and 4637. 1846. There is a white-flowered variety.
 — *leucaantha*. See *Cereus leucacanthus*.
 — *multiflex*. See *Cereus multiplex*.
 — *rhodacantha*. Brazil.
 — *Schellhaasia*. Pink. Country unknown. 1873.
 — *Zuccariniana*. Country unknown.

Echinostachys *Pineliana*. See **Echmea** *Pineliana*.

Echites. (From *echis*, a viper; referring to the snake-like coils of the twining shoots. Nat. ord., *Apocynaceæ*.)

Pretty stove and greenhouse, mostly evergreen climbers. Cuttings in sand, in bottom-heat, in spring; lumpy loam and peat. Others, usual greenhouse temperatures.

- E. argæa*. S. America. Stove climber.
 — *biflora*. 20. White. July. W. Ind. 1783.
 — *botivienis*. White, orange. Bolivia. 1882.
 — *domingensis*. 10. Yellow. June. W. Ind. 1820. Jacq. Ic. t. 53.
 — *franciscoea*. Rose, green. September. Brazil. 1845. B. M. t. 4547.
 — *grandiflora*. 8. Pink. E. Ind. 1823.
 — *Heynii*. 5. Yellow. June. E. Ind. 1818.
 — *hirsuta*. 10. Yellow, rose. September. Brazil. 1843. B. M. t. 3997. Syn., *C. Richardii*.
 — *longiflora*. 6. White. June. Brazil. 1816.
 — *malabarica*. 6. Red. June. Malabar. 1822.
 — *paniculata*. 10. Yellow. July. S. Amer. 1823. Wight Ic. t. 398.
 — *peltata*. 10. Trinidad. 1826. Fl. Ser. t. 390.
 — *reticulata*. 6. Yellow. July. E. Ind. 1818.
 — *Richardii*. See *E. hirsuta*.
 — *rubricaulis*. 6. Yellow. July. Gniana. 1824.
 — *rubro-venosa*. Midribs yellowish. S. America. 1867.
 — *splenens*. White, rose. September. Brazil. 1841. B. M. t. 3976.
 — *stellaris*. 10. Rose, yellow. July. Rio Janiero. B. E. t. 1664.
 — *suaveolens*. White. Buenos Ayres. Fl. Ser. t. 1142. Syn., *Mandevilla suaveolens*. B. R. 1840, t. 7.
 — *suberecta*. 10. Yellow. July. Jamaica. 1759. B. M. t. 1064. Savannah flower.
 — *torosa*. 10. Yellow. Jamaica. 1778.
 — *umbellata*. 15. Yellow. July. Jamaica. 1738.

EXCLUDED SPECIES.

- E. antidysenterica*. See *Holarrhena antidysenterica*.
 — *atro-purpurea*. B. E. 1843, t. 27. See *Dipladenia atro-purpurea*.
 — *bispinosa*. See *Pachypodium bispinosum*.
 — *caryophyllata*. B. M. t. 1919. See *Ichnocarpus*.
 — *caudata*. See *Strophanthus dichotomus*.
 — *crassinoda*. See *Dipladenia crassinoda*.
 — *cymosa*. Wight Ic. t. 395. See *Ichnocarpus*.
 — *difformis*. See *Forsteronia difformis*.
 — *frutescens*. Wight. Ic. t. 430. See *Ichnocarpus frutescens*.
 — *nutans*. B. M. t. 2473. See *Hæmadietyon nutans*.
 — *sanguineolata*. See *Hæmadietyon venosum*.
 — *scholaris*. See *Alstonia scholaris*.
 — *splenens*. See *Dipladenia splendens*.
 — *succulenta*. See *Pachypodium succulentum*.
 — *tuberosa*. See *Pachypodium tuberosum*. B. R. t. 1321.

Echium. Viper's Bugloss. (From *echis*, a viper; seeds like the viper's head. Nat. ord., *Boraginaceæ*; Tribe, *Borageæ*. 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. During winter they require protection.

HARDY ANNUALS.

- E. angustifolium*. Blush. July. Spain. 1826.
 — *arenarium*. Purple. July. Calabria. 1826.
 — *calycinum*. Blue, yellow. July. South Europe. 1829.
 — *creticum*. 1. Reddish-violet. July. S. Europe. 1683. B. M. t. 1934.
 — *macranthum*. 1. Violet. July. Barbary. 1818.
 — *Simsii*. Red, blue. August. South Europe. 1816.

HARDY BIENNIALS.

- E. amœnum*. Blue. July. Caucasus. 1826.
 — *aspernum*. Blue. July. Caucasus. 1826.
 — *dahuricum*. Blue. July. Dauria. 1827.
 — *italicum*. 4. White. July. Jersey.
 — *Sibthorpii*. 1. Red. June. Europe. 1824.
 — *teuicæ*. 1. Blue. July. Sicily. 1824.
 — *tuberculatum*. 1. Violet. August. Spain. 1820.
 — *violaceum*. 3. Blue. June. Austria. 1858.
 — *vulgaris flore-albo*. 1. White. July. Britain.

HERBACEOUS PERENNIALS.

- E. arborescens*. 5. Red, blue, purple.
 — *australe*. 1½. Red-purple. August. S. Europe. Swt. Fl. Gard. t. 101.
 — *caudatum*. 1. Red. July. Cape of Good Hope. 1819. Greenhouse.
 — *Lagascanum*. Lilac. July. Spain. 1826. Hardy.
 — *Mertensii*. 1½. Blue. June. Spain. 1824. Hardy.
 — *prostratum*. 1. Red. July. Egypt. 1825. Hardy.
 — *rubrum*. 1-2. Red. May. Hungary. B. M. t. 1826.
 — *spicatum*. 3. White. July. Cape of Good Hope. 1791. Greenhouse.

GREENHOUSE EVERGREENS.

- E. aculeatum*. 4. White. June. Canaries. 1815.
 — *ambiguum*. 3-5. White, red. July. Canaries. 1820.
 — *argenteum*. Andr. Rep. t. 154. See *Lobostemon*.

- E. bifrons*. 3. White, red. June. Canaries. 1820.
 — *brachyanthum*. 1½. White. June. Cape of Good Hope. 1819.
 — *caudicans*. 3. Blue. June. Madeira. 1777.
 — *capitata*. 2. Red. June. Cape of Good Hope. 1819.
 — *cynoglossoides*. 3. Blue. July. Canaries. 1816.
 — *densiflorum*. 2. Blue. June. Canaries. 1820.
 — *fastuosum*. 4. Purple. April. Canaries. 1779.
 — *ferocissimum*. Andr. Rep. t. 39. See *Lobostemon*.
 — *foliosum*. 3. White. July. Canaries. 1815.
 — *fruticosum*. B. M. t. 1772. See *Lobostemon*.
 — *giganteum*. 10. White. June. Canaries. 1779. Paxt. Mag. v. p. 149.
 — *glabrum*. 2. White. May. Cape of Good Hope. 1791.
 — *glaucophyllum*. Andr. Rep. t. 165. See *Lobostemon*.
 — *grandiflorum*. Andr. Rep. t. 20. See *Lobostemon*.
 — *hispidum*. 2. White. June. Cape of Good Hope. 1818.
 — *incanum*. Blue. June. Cape of Good Hope. 1816.
 — *lævigatum*. 2. Blue. July. Cape of Good Hope. 1774.
 — *lasiophyllum*. 2. White. May. Cape of Good Hope. 1819.
 — *lineatum*. 2. White. July. Canaries. 1815.
 — *longiflorum*. 3. Blue. July. Cape of Good Hope. 1806.
 — *macrophyllum*. 3. Blue. July. Canaries. 1823.
 — *molle*. 6. White. Teneriffe. 1820.
 — *nervosum*. 4. Purple. July. Madeira. 1777.
 — *paniculatum*. 3. White. July. Cape of Good Hope. 1815.
 — *petraeum*. B. R. 1843, t. 26. See *Lithospermum petraeum*.
 — *pyramidatum*. 3. Blue. July. Cape of Good Hope. 1820.
 — *scabrum*. 2. Purple. Blue. July. Cape of Good Hope. 1820.
 — *simplex*. 1. White. June. Teneriffe. 1820.
 — *sphaerocephalon*. White. July. Cape of Good Hope. 1824.
 — *strictum*. 3. Blue. June. Canaries. 1779.
 — *strigosum*. 2. Violet. August. Cape of Good Hope. 1821.
 — *Suaresii*. Blue. June. Cape of Good Hope. 1816.
 — *verrucosum*. 3. White. July. Cape of Good Hope. 1822.
 — *virescens*. 2. Bluish. July. Canaries. 1820.

Edelwe'iss. *Leontopodium alpinum*.

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, tiles set edgewise form the best edging. In peaty, or any light soils, the common heath (*Eri'ca vulgari's*) is very advantageously employed; it requires to be clipped 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 few years. *Gentiana'lla* makes a very beautiful edging, but refuses to grow in many gardens. It may be planted in September. Various other substitutes have been, from time to time, recommended, amongst them, *Saxi'fraga hypno'ides*, which is, however, a little troublesome. Sprigs have to be planted a few inches apart, they soon spread out and unite. 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. *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.

Edgewor'thia. (Named after Mr. Edgeworth. Nat. ord., *Thymelaeaceae*; Tribe, *Euthymelaeae*. Allied to Dais.)

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 *Edgewor'thia* of Falconer, now called *Reptonia*. 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.

E. chrysa'ntha. 3. Yellow. June. China. 1845.

Edraia'nthus. See **Wahlenbergia**.

Edwa'rdsia. (After Mr. Edwards, botanical draughtsman. Nat. ord., *Leguminosae*; Tribe, *Sophoreae*. 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. nitida* will do against a wall.

E. chil'ensis. May. Chili. 1822. B. R. t. 1798.

— *chryso'phylla*. 12. May. New Zealand. B.

R. t. 738.

— *grandiflora*. 12. May. New Zealand. 1772.

B. C. t. 1162. Syn., *Sophora tetra'ptera*.

B. M. t. 167.

— *Macnab'iana*. 6. July. Australia. 1820.

B. M. t. 3735.

— *micro'phylla*. 6. May. New Zealand. 1772.

B. M. t. 1442.

— *mi'nima*. 4. May. New Zealand. 1818.

— *myr'thophylla*. 5. May. New Zealand.

— *nitida*. 8. Bourbon. 1820.

— *pu'che'lla*. New Zealand. 1870.

Eel Fern. *Elaphoglossum Herminie'ri*.

Egg-plant or bearer. *Solanum ovigerum*.

Egg-shells. See **Animal Mat-
ters.**

Eglantine. *Rosa lu'tea* and *Ru'bus
Eglan'teria.*

Egyptian Lotus. *Nymphœa lo'-
tus.*

Egyptian Thorn. *Aca'cia ve'ra.*

Ehretia. (After *Ehret*, a German
botanical draughtsman. Nat. ord.,
Boraginæ; Tribe, *Ehretieæ*. Allied to
Tournefortia and *Heliotropium*.)

All of them unfold their flowers from twisted
(gyrate) stalks, like the *Heliotrope*. All ever-
greens and white-flowered. Cuttings in sandy
soil, in April, under a bell-glass, and in bottom-
heat; loam and peat. The Australian species
will do in a temperature in winter of 35° to 45°.

E. acuminata. 15. July. Australia. 1820.

— *buzifolia.* 8. E. Ind. 1823.

— *divaricata.* A synonym of *Bourreria divari-
cata.*

— *internodis.* 6. Antilles. 1819.

— *la'vis.* 12. E. Ind. 1823. Wight Ic. t. 1382.

— *laxa.* Jacq. H. Schtenh. t. 41. A synonym
of *Bourreria laxa.*

— *microphylla.* 10. July. E. Ind. 1818.

— *serrata.* 6. E. Ind. 1823.

Eichor'nea. (In honour of *F.*
Eichorn, a learned Prussian. Nat. ord.,
Pontederiaceæ.)

Stove aquatics. Divisions of the rhizomes in
spring.

E. azurea. 1. Light blue, yellow. Summer.

Tropical America. 1879. B. M. t. 6487.

— *crassipes.* Violet. Summer. S. America.

Syn., *Pontederia azurea* of B. M. t. 2932.

— *paniculata.* 1½. Purple, blue. Summer.
S. America. Syn., *E. tricolor.* B. M.
t. 5020.

Ekebe'rgia. (After *Capt. Ekeberg*,
a Swede. Nat. ord., *Meliaceæ*. Allied
to *Trichilia*.)

A fine greenhouse evergreen tree, with the
aspect of a large *Me'lia*, which see for culture.

E. cape'nsis. White. July. Uitenhage and
Caffraria. 1789.

Elæagnus. Oleaster, or Wild Olive.
(From *elæagnos*, Dioscorides's name for
the Wild Olive. Nat. ord., *Elæagnaceæ*.
Allied to *Shepherdia*.)

Ornamental deciduous and evergreen shrubs
or small trees. The flowers of *E. orientalis* are
highly fragrant, and the fruit is esteemed in
Persia. The deciduous species and their varie-
ties, by seeds sown in spring, and cuttings inser-
ted in the open ground, in autumn; the ever-
green 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. acuminata. 4.

— *latifolia.* 4. July. E. Ind. 1712.

— *orientalis.* 10. July. Levant. 1748.

HARDY DECIDUOUS.

E. angustifolia. Yellow. July. South Europe.

1633. B. E. t. 1166.

— *dactyliformis.* White, July.

E. arge'ntea. 10. N. Amer. 1813. Wats. Dendr.
t. 161.

— *canade'nsis.* White. Canada. 1848.

— *conferta.* 10. White. Nepal. 1825.

— *crispa.* See *E. longipes.*

— *e'dulis.* Yellowish-white. Japan. 1869.

— *glabra.* 3-6. Whitish. Japan.

— *horte'nsis.* 20. Yellow. July. South Europe.
1633.

— *longipes.* Berries orange. Japan. 1873.
There are several varieties of this. Syn.,
E. crispa.

— *macrophylla.* 6. Greenish-yellow. Autumn.
Japan.

— *parvifolia.* 10. White. June. India. 1843.
Evergreen. B. E. 1843, t. 51.

— *pu'ngens.* 6. Yellowish. Japan.

— *reflexa auréo-variegata.* Leaves variegated
with gold. 1884.

— *rotundifolia.* Yellow. 1871.

— *Simo'ni.* White; sweet scented. Late
autumn. China. 1869.

— *tricolor.* Leaves dark green, variegated
with golden and greenish yellow. 1889.

— *spinosa.* White. July. Egypt. 1826.

— *song'rica.* Pale yellow. July. Siberia.
1821.

— *triflora.* White. July. Nepal. 1825.

— *umbellata.* White. July. Nepal. 1829.

Elæ'is. The Oil Palm. (From *elaia*,
the olive; similarity of expressing oil
from the fruit. Nat. ord., *Palmææ*;
Tribe, *Cocoinææ*. Allied to *Cocos*.)

The best kind of palm wine is from this palm.
Palm oil, so much used in the manufacture of
soap, and as a sort of grease, is chiefly the pro-
duce of *E. guinee'nsis* and *melanoco'cca*. Stove
Palms, with greenish-white flowers. Snickers
and seeds; rich, sandy soil.

E. guinee'nsis. 30. Guinea. 1730.

— *melanoco'cca.* 30. New Grenada. 1821.

— *occidentalis.* 30. Jamaica. 1820.

— *pernambuca'na.* 50. Brazil. 1825.

— *spectabilis.* E. Ind. 1831.

Elæocar'pus. (From *elaia*, the
olive, and *karpos*, fruit; resemblance of
fruits. Nat. ord., *Tiliaceæ*; Tribe,
Elæocarpeæ.)

The rough, hony fruit, or stone, divested of the
pulp and polished, makes handsome necklaces.
Handsome stove or greenhouse evergreens, with
white flowers. Seeds in a hotbed, in spring;
cuttings of ripened young shoots, with the
leaves attached, in sandy soil, under a bell-
glass, and bottom-heat; loam and a little fibry
peat.

E. cya'neus. 10. July. Australia. 1803. B.

M. t. 1737. Syn., *E. reticulatus*.

— *dentalis.* Straw-coloured. 1853.

— *grandiflorus.* 20. White, crimson. E. Ind.

1829. Syn., *E. lanceolatus*.

— *grandinis.* Queensland.

— *peduncularis.* A synonym of *Aristolia*
peduncularis.

— *reticulatus.* B. M. t. 657. See *E. cyaneus*.

— *serratus.* 20. Tropical Himalayas. 1774.

Elæode'ndron. Olive Wood.
(From *elaia*, olive, and *dendron*, a tree;
alluding to the resemblance. Nat. ord.,
Celastrææ; Tribe, *Celastrææ*. Allied
to *Hartogia*.)

For culture, see **ELÆOCARPUS**.

GREENHOUSE EVERGREENS.

E. Ar'gan. See *Argania siderocylon*.

— *australe* 3 Green, white. July. N.S.

Wales? 1790.

- E. cape'nsis*. 18. Green. June. Cape of Good Hope. 1828.
 — *cro'ceum*. 20-40. White. June. Uitenhage. 1794. B. M. t. 3835.
 — *integrifolium*. 3. Green, white. July. N. Holland.
 — *sphaerophyllum pubescens*. S. Africa. Syn., *Guevina avellana*.

STOVE EVERGREENS.

- E. glaucum*. See *E. pedunculatum*.
 — *orientale*. 12. Green, yellow. Mauritius. 1771.
 — *pedunculatum*. 6. Green. Ceylon. 1824. Syn., *E. glaucum*.
 — *xylocarpum*. 3. Green, yellow. Antilles. 1816.

Elaphoglossum. (From *elaphos*, an elephant, and *glossa*, a tongue; alluding to the form of the fronds. Nat. ord., *Filices—Polypodiaceae*.)

Stove ferns. See FERNs.

- E. Bachousia'num*. Mexico. G. C. 1882, xvii. p. 672.
 — *brachyneuron*. Tropical America.
 — *Hernandezii*. 3. S. America. 1871. The Eel Fern.
 — *latifolium*. Tropical America.
 — *lepidotum*. Tropical America.
 — *microlepia*. Venezuela.
 — *muscosum*. Madeira.
 — *Prestonii*. Brazil. 1873.
 — *rubiginosum*. Tropical America.

Olfersia apodum, *callaefolium*, *conforme*, *longifolium*, and *scotopendrifolium* are now included in this genus.

Elater. See Wire-Worm.

Elder. *Sambucus nigra*.

Varieties.—There are several kinds in cultivation, but the old *S. nigra* is in most general esteem, being the best adapted for wine-making. The White-berried (*S. albidia*) is much esteemed by some, especially as an ornamental shrub. *S. viridis*, or the Green-berried, and *S. nigra variegata*, the Silver-striped, and *S. nigra aurea*, the Golden-edged, are interesting varieties. One with scarlet berries is said to be very handsome. Most of the varieties of *S. nigra* 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.

Elecampane. *Inula helennium*.

Elettaria. (The native name in Malabar. Nat. ord., *Scitamineae*; Tribe, *Zingibereae*.)

A genus of stove plants, requiring liberal treatment. Cardamoms of commerce are the produce of *E. Cardamomum*.

- E. Cardamomum*. 6-9. Greenish-white. August. Malabar. 1815. Syn., *Alpinia Cardamomum*.
 — *costata*. 6. Red. July. E. Indies. 1815. Syn., *Alpinia media*.
 — *linguiformis*. 4-6. Yellow, red. Bengal. Syn., *Alpinia linguiformis*.
 — *punicaea*. Reddish. E. Indies. Syn., *Alpinia punicea*.

Eleusine. (From *Eleusis*, a temple of Ceres. Nat. ord., *Gramineae*.)

Half-hardy grasses. The inflorescences are very beautiful, and are largely used in winter bouquets. Seeds. Sandy soil.

- E. barcinonensis*. 2. September. Spain. Annual.
 — *oligostachya*. Brazil.

Elchrysum. See **Helichrysum**.

Elisena. (Ancient name of romance. Nat. ord., *Amaryllidaceae*; Tribe, *Amaryllae*. Allied to *Pancreatum*.)

Handsome greenhouse bulbs, with a flower-scape a yard high, with six to eight large white flowers, more like a Peruvian Daffodil (*Isme ne*) than a *Pancreatum*. They require more than one-half sand, with light loam, to flower well. Seeds. Offsets; peat and very sandy loam.

- E. longipetala*. May. Lima. 1837. B. M. t. 3873.
 — *subtilis*. Andes of Peru.

Elisma. (Derivation not explained. Nat. ord., *Alismaceae*.)

A very pretty dwarf water plant. It may be planted in shallow water, or grown in pots in the tank. Division.

- E. natans*. White, yellow. July. Britain. Syn., *Alisma natans*, Eng. Bot. ed. 3, t. 1441.

Elea nthus. (Derivation not explained.)

Nat. ord., *Orchidæ*; Tribe, *Epidendree*—*Cælogyneæ*.)

This is an older name for *EVELYNA*, the species of which should now be included here.—Stove epiphytes. For cultivation, see ORCHIDS.

- E. bracteæscens*. Red. July. Merida. Syn., *Evelyna bractescens*.
 — *capitata*. White. August. Sierra Nevada. Syn., *Evelyna capitata*.
 — *Caravata*. 1. Yellow. November. Guiana. 1858. Syn., *Evelyna Caravata*. B. M. t. 5141.
 — *columnaris*. White, purple. June. Sierra Nevada. Syn., *Evelyna columnaris*.
 — *ensata*. Carmine. August. Sierra Nevada. Syn., *Evelyna ensata*.
 — *flavescens*. Yellow. May. Truxillo. Syn., *Evelyna flavescens*.
 — *furfuracea*. Scarlet. June. Merida. Syn., *Evelyna furfuracea*.
 — *kermesina*. Bright carmine. January. Mariquita. 1843. Syn., *Evelyna kermesina*.
 — *lupulina*. Rose. August. Sierra Nevada. Syn., *Evelyna lupulina*.
 — *zanthocamus*. 1. Yellow. May. Peru. 1872. B. M. t. 6016.

Elliotia. (After *S. Elliot*, an American botanist. Nat. ord., *Cyrtolacæ*; Tribe, *Rhodoreæ*.)

A dwarf evergreen bush, with spikes of Andromeda-looking flowers. It requires the protection of a greenhouse, or in the south a warm situation on a peat border. Cuttings of small shoots under a hand-light in spring, or layers at the end of summer; sandy loam and peat.

E. racemosa. 2. White. June. Georgia.

Ellobocarpus. Pod Fern. (From *en*, in, *lobus*, a pod, and *carpos*, a seed-vessel; alluding to the appearance of the divided fronds. Nat. ord., *Filices*.)

A beautiful stove Fern. Divisions; peat and loam, rather most of the latter. By some botanists called *Ceratopteris thalictroides*.

E. oleraceus. $\frac{1}{2}$. Brown. August. Tranquebar. 1818.

Elm. *Ulmus campestris*.

Elm-beetle. See *Scolytus*.

Elodea. (From *elodes*, a marsh, the native place of the species. Nat. ord., *Hydrocharidæ*.)

E. canadensis. 1. Green. N. America. 1836. Eng. Bot. ed. 3, t. 1446. This is the only species of this genus and is remarkable for the extremely rapid manner in which it has become naturalized in this country. It has increased to such an extent in some rivers and canals as to be a great impediment to navigation.

— *guianensis*. A synonym of *Apalantha guianensis*.

— *pulchella*. See *Hypericum*.

Embelia. (From *Embelia*, its name in Ceylon. Nat. ord., *Myrsinæ*.)

Like *Ardisia*, the chief beauty resides in the leaves and berries. The pungent berries of *Embelia ribes* 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.

E. Kraussii. Pale green. Natal. Ref. Bot. t. 345.

E. ribes.
 — *robusta*. 20. White, green. India. 1823.

Emblia. See *Phyllanthus*.

Embothrium. (From *en*, in, and *bothrion*, a little pit; referring to the anthers. Nat. ord., *Proteaceæ*; Tribe, *Embothriæ*.)

Very ornamental greenhouse evergreen shrubs. Cuttings in sandy soil, taken when the wood is ripe, under a bell-glass; sandy peat, with a little fibry loam. They may be planted against a wall in the south, but require protection during winter.

E. buxifolium. Andr. Rep. t. 218. See *Grevillea*.
 — *coccineum*. 3. Scarlet. May. S. America. 1851. B. M. t. 4856.

- *lanceolata*. Scarlet. Chili.
 — *lineare*. Andr. Rep. t. 272. See *Grevillea*.
 — *salignum*. Andr. Rep. t. 215. See *Hakea*.
 — *sericeum*. Andr. Rep. t. 100. See *Grevillea*.
 — *speciosissimum*. B. M. t. 1128. See *Telopea*.
 — *speciosum*. Salis Parad. See *Telopea*.
 — *strobiliferum*. 3. Green, yellow. April. 1824.

Emilia. (Derivation unexplained, probably commemorative. Nat. ord., *Compositæ*; Tribe, *Senecionidæ*. Allied to *Senecio*.)

Half-hardy annual. Seeds sown in a hotbed in early spring, or in the open border in April. Ordinary garden-soil.

E. sonchifolia. 2. Purple. India.

Empetrum. Crow Berry. (From *en*, in, or upon, and *petros*, a rock; plants growing in stony places. Nat. ord., *Empetrææ*.)

Low, spreading, heath-like plants, better suited for damp peat-beds than rock-work. The berries are wholesome and very 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; healthy soil, and rather moist situation.

E. nigrum. 1. April. Britain. Eng. Bot. ed. 3, t. 1251.

— *scoticum*. $\frac{1}{2}$. April. Scotland.
 — *rubrum*. Brown, purple. S. Amer. 1833. B. R. t. 1783.

Empleurum. (From *en*, in, and *pleuron*, a membrane; referring to the seed being suspended from the seed-cord by a thin membrane. Nat. ord., *Rutaceæ*; Tribe, *Diosmeæ*. 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 fibry loam, two parts.

E. serrulatum. 3. Pink. June. 1774. S. W. Africa.

Encelesia. (From *egchelson*, a little eel; formation of the seeds. Nat. ord., *Compositæ*; Tribe, *Helianthoidæ*. Allied to *Sclerocarpus*.)

Greenhouse evergreens. Seeds, when obtainable, in spring; cuttings, a little hard at the

base, in sand, under a glass, and shaded; sandy, fibry loam, with a little peat.

E. cane'escens. 1½. Orange. July. Peru. 1786. B. R. t. 909.

— *halimifolia*. 1½. Yellow. July. Mexico. 1826.

Encephalartos. (From *en*, within, *kephale*, the head, and *artos*, bread; the inner part of the top of the trunk being farinaceous. Nat. ord., *Cycadaceae*; Tribe, *Encephalartea*. Allied to *Zamia*.)

For cultivation, see *ZAMIA*. All natives of S. Africa.

E. Altenstei'nii. 1835.

— *brachyphyllus*.

— *cycadifolius*. 1853

— *elongatus*. 1840.

— *Frederi'ci-Guiliel'mi*. 1879. Syn., *E. acantha*.

— *Ghelli'nokii*. 1867. Syn., *E. gracilis* and *Zamia Ghellinckii*.

— *gra'ndis*. 1869.

— *Hildebra'ndtii*. Zanzibar. 1877.

— *ho'rridus*. 5. S. Africa. 1800. Syn.,

Zamia horrida.

— — *trispinosus*. Leaves less spiny than in the type. S. Africa.

— *latifolius*. 1844.

— *Lehma'nii*.

— *M'Ke'nii*. S. Africa. 1869.

— *Mo'o'ri*. See *Macrozamia*.

— *plumosus*. S. Africa. 1869.

— *regalis*. 6-7. Zululand. 1879.

— *spinulosus*. 1849.

— *Verschaffe'l'tii*. S. Africa. 1875.

— *villosus*. 4. Natal. 1866. Syn., *Zamia villosus*.

— *ampliat'us*. S. Africa. 1874.

— *Vroo'mi*. S. Africa. 1871.

Zamia caffra, *lanuginosa*, *longifolia*, *pub'ngens*, and *tridentata* have been added to this genus.

Enchanter's Nightshade. *Circæa*.

Encholi'ron. See *Vriesia*.

Ency'elia. See *Polystachya*.

E'ndera. See *Lysistigma*.

Endive. (*Cichor'rium endi'via*.) Used in salads.

Varieties.—The *green-curved* is cultivated for the main crops, as it best endures wet and cold; the *white-curved*, chiefly grown for summer and autumn; the *broad-leaved*, or *Batavian*, is preferred for soups and stews, but is seldom used for salads. Other varieties are:—Italian green curled, Large green curled (very hardy, and ties up well), Moss curled, Picus curled, Stag's horn, etc.

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, etc.

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.

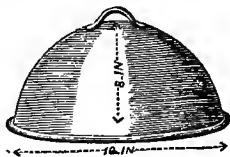
Planting.—Set them in rows twelve or fifteen inches apart each way; the Batavian requires the greatest space. Water must be given moderately every evening until the plants are established, after which only in excessive and protracted drought. Those which are left in the seed-bed, in general, attain a 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, it is sometimes practised 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 ex-

cessive 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 bass-mat, 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 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, like the annexed figure, is to be preferred; and if made of zinc or other metal, it would be better, because not porous and admmissive 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 pailings, 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.

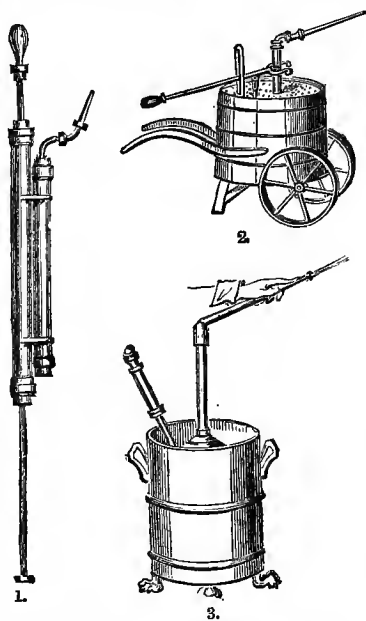
Engelma'nnia. (After Prof. Engelmann, an American botanist. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)

A useful hardy annual. Seeds in March in the open border.

E. pinnatifida. 1-2. Yellow. July. Prairies of N. America. 1879. B. M. t. 6577.

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* is represented in the next figure. It 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, etc., 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.

There are now many new forms of water-engines for gardens, but the principles are much the same.

Enkia'nthus. (From *enkuos*, enlarged, and *anthos*, a flower; the flowers swollen in the middle. Nat. ord., *Eriaceæ*; Tribe, *Andromedææ*. Allied to *Pieris*.)

Greenhouse 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 fibry peat one part.

E. campanulatus. Small tree. Dark red. N. Japan. 1888. B. M. t. 7059. Hardy against a wall.

— *himalaius*. 20. Dull orange, red. June. Sikhim. 1879. B. M. t. 6460.

— *japonicus*. White. February. Japan. 1870. B. M. t. 5822.

— *quinquestrobus*. 3. Pink. May. Hong Kong. 1812. B. R. t. 884. Syn., *Melidora pellucida*.

— *reticulatus*. 3. Pink. January. Hong Kong. 1822. B. R. t. 885.

Ensle'nia. (Named after A. Enslin, a botanist. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynancheæ*. Allied to *Asclepias*.)

Hardy herbaceous climber. Seeds and divisions in spring; common soil.

E. albidia. White. July. United States. 1828.

Enta'da. (The Malabar name. Nat. ord., *Leguminosæ*; Tribe, *Adenanthereæ*. 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. Pursætha*. 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.

E. adena'nthera. 20. South Sea Islands. 1817.

— *monostachya*. 20. Malabar. 1800.

— *polystachya*. 26. Martinique. 1816.

— *Pursætha*. 20. Moluccas. 1780.

— *scandens* Jamaica. 1881.

Ente'lea. (From *enteles*, perfect; the stamens all fertile. Nat. ord., *Tiliaceæ*. Allied to *Grewia*.)

Greenhouse evergreens, from New Zealand, except *E. Bakeri*. Cuttings of half-ripened shoots in sand, under a glass; sandy loam and little peat.

E. australis. 20. White. May. 1820. Syn.,

E. arborescens. B. M. t. 2480.

— *Bakeri*. Australia. 1869.

— *palmata*. 4. White. May. 1830.

— *pube'scens*. White. May. 1836.

Entrances. The approach or 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 build-

ings, 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.

Es'mecon. (From *eo*, dawn, and *mechon*, a poppy. Nat. ord., *Papaveraceæ*.)

A handsome, hardy perennial. Rich, peaty soil. Division in spring.

E. chionantha. 1-2. White; stamens yellow. China. 1889. B. M. t. 6871.

Eope'pon. Does not appear to differ from *Trichosanthes*, under which it is included.

Epa'cris. (From *epi*, upon, and *akros*, the top. The *Epacris* grows on the tops of hills and rising grounds. Nat. ord., *Epacridaceæ*; Tribe, *Epacreeæ*.)

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; a few round a small pot. Sandy, fibry 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.

- E. acuminata*. 2-3. Syn., *E. mucronatula*.
 — *andromedaeflora*. 2. White, rose. 1848.
 — *apiculata*. 2. May. 1825.
 — *attenuata*. B. C. t. 38. See *Lysinema pungens*.
 — *autumnalis*. 3-4. Red, tipped with white. October. Paxt. Mag. xi. p. 195.
 — *bicolor*. 2. Deep crimson, white. 1848.
 — *campanulata*. 3. Deep blush. April. 1830. B. C. t. 1931.
 — *alba*. 2. White. April. 1830.
 — *maxima*. 3. Dark crimson. February. 1848.
 — *cerceiflora*. B. M. t. 3243. See *E. impressa*.
 — *coctinea*. Bright crimson. A seedling. Paxt. Mag. vi. t. 123.
 — *delicata*. 2. Blush, white. April. 1848.
 — *densiflora*. 2. Blush. April. 1848.
 — *diosmoxifolia*.
 — *dubia*. B. R. 1846. t. 38. A variety of *E. heteronema*.
 — *exserta*. 2. White. May. Tasmania. 1812.
 — *grandiflora*. 3. Scarlet. March. 1803. B. M. t. 3257.
 — *heteronema*. 3. White. June. 1823.
 — *dubia*. 3. White. April. Syn., *E. dubia*.
 — *hyacinthiflora carminata*. Red. Flor. Mag. t. 486.
 — *impressa*. 3. Crimson. June. 1824. B. M. t. 3407. Syns., *E. cerceiflora*, *E. nivalis*, and *E. variabilis*.
 — *ardens*. Pink. Gfl. t. 695.
 — *fulgens*. A seedling. 1843.
 — *parviflora*. 3. Red. April. 1836. B. R. 1839, t. 19.
 — *longiflora*. 2-4. Crimson, tipped with white. May. Syns., *E. grandiflora* of B. M. t. 982, and *E. miniata* of B. R. 1845, t. 5.
 — *microphylla*. 2. White. May. 1822. B. M. t. 3658. Syn., *E. pulchella*.
 — *minuta*. B. R. 1845, t. 5. See *E. longiflora*.
 — *multiflora*. Crimson, white. 1860. Ill. Hort. 1860, t. 266.
 — *nivalis*. B. M. t. 3253. See *E. impressa*.
 — *obtusifolia*. White. October. Port Jackson. B. M. t. 3775.
 — *onosmeflora*. 2. Red. June. 1823. B. M. t. 3168. Sometimes regarded as a form of *E. purpurascens*.
 — *floré ple'no*. 14. White. Australia. 1876.
 — *paludosa*. 3. Pale red. May. 1825. B. C. t. 1226.
 — *pulchella*. B. M. t. 1170. See *E. microphylla*.
 — *pungens* of B. M. t. 844 is *E. purpurascens*; of B. M. t. 1199 is *Lysinema pungens*.
 — *purpurascens*. 3. Purple. February. 1803. B. C. t. 237 and 876. Syn., *E. pungens* of B. M. t. 844.
 — *rubra*. 3. Red. February. 1803.
 — *rosea*. B. C. t. 862. See *Lysinema pungens*.
 — *rubra*. B. C. t. 876. See *E. purpurascens*, var. *rubra*.
 — *squarrosa*. White. Australia. 1865.
 — *Tauntoniensis*. Crimson. A hybrid between *E. grandiflora* and *E. impressa*. Paxt. Mag. xiv. t. 196.
 — *variabilis*. B. C. t. 1816. See *E. impressa*.

Eperua. (The native name for sword; referring to the shape of the seed-pods. Nat. ord., *Leguminosæ*.)

Stove treatment.

E. grandiflora. Guiana. Syn., *Dimorpha grandiflora*.

Ephedra. Joint Firs. (The Greek for the Hippuris, or Horsetail, which it resembles. Nat. ord., *Gnetaceæ*.)

Evergreens. *E. monostachya* 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. distachya* would live on the sea-shore, and bear clipping.

E. altissima. 24. Barbary. 1825. Half-hardy twiner.

— *distachya*. 2. June. France. 1570.

— *minor*. 1833.

— *monostachya*. 2. October. Siberia. 1772.

Ephippium. A synonym of **Cirrhopetalum**.

Epidendrum. (From *epi*, upon, and *dendron*, a tree; air-plants attached to trees. Nat. ord., *Orchidææ*; Tribe, *Epidendree-Lælieæ*. Allied to *Lælia*.)

Stove orchids. Division of the plant before active growth commences; fibry 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 80°, with more dryness.

E. aciculare. Purple, white. Bahamas. 1841. Syn., *E. bractescens*.

— *adenorrhynchum*. Syn., *E. papillosum*. B. M. t. 3631.

— *adventum*. Yellow, brown, purple. Brazil. 1872.

— *æmulum*. B. R. t. 1898. See *E. fragrans*.

— *aggregatum*. Peru. 1841.

— *alatum*. Green, white, pink. B. R. 1847, t. 53. Syn., *E. calochelidum*.

— *alotolum*. B. M. t. 387. See *E. Parkinsonianum*.

— *amabile*. See *Phalenopsis amabilis*.

— *amethystinum*. Amethyst. Tropical America. 1867.

— *a'nceps*. Brownish. Demerara. 1836. Syns., *E. muscifurum* and *E. fuscatum*. B. M. t. 2844.

— *antenniferum*. ½. Brownish. May. Rio Janeiro. Syn., *E. longipetalon*.

— *arachnoidesum*. Violet. New Grenada. 1882.

— *ca'ndidum*. White, orange. 1886.

— *armeni'acum*. Apricot-colour. Brazil. 1835. B. R. t. 1867.

— *aromat'icum*. 3. Yellow. May. Guatemala. 1835.

— *asperum*. Yellowish. Mexico.

— *atro-purpureum oculatum*. Brown, purple, white. Venezuela. 1865.

— *Randi*. Brown, edged with yellowish; lip white, red. Amazons. Syn., *E. Randerianum*. Lind. t. 49.

— *auranti'acum*. Orange. Guatemala. 1835.

— *auricul'gerum*. Yellowish, purple. G. C. 1885, iv. p. 34.

— *auritum*. Pale green. Guatemala. 1843. Syn., *E. paleaceum*.

— *au'reo-purpureum*. See *E. macrochilum*.

— *Barkeri'ola*. Pale rose, lip white. 1884. Syn., *Barkeria Barkeri'ola*.

— *bicameratum*. Ochre. 1871.

— *bicornu'tum*. B. M. t. 3332. See *Hormidium*.

— *bididum*. Green, white, crimson, yellow. July. W. Indies. 1835. B. R. t. 1879.

— *Boothia'num*. ½. Green. September. Cuba. 1835.

— *brachio'tum*. Yellow. Mexico. 1880.

— *brachychil'um*. Yellow, brown. Sierra Nevada.

— *bracte'scens*. See *E. aciculare*.

— *Brassa'voles*. Straw, purple. Guatemala. 1887.

— *cæspit'ium*. White, rose. Peru.

— *caliga'rum*. Mexico. 1869.

- E. calochetum*. B. M. t. 3898. See *E. alatum*, — *campestre*. Brazil. 1844.
 — *campylostachya*. $\frac{1}{2}$. Greenish, brown, white. Central America. 1869.
 — *Candollei*. Brown, yellow. Mexico. 1836. Syn., *E. cepiforme*.
 — *carnosum*. Yellow. Brazil.
 — *Catiellus*. Cinnabar, yellow. Columbia. 1872.
 — *cauliflorum*. Yellow. Rio Janeiro. 1830.
 — *cephiforme*. B. M. t. 3765. See *E. Candollei*.
 — *chionemum*. White. New Grenada.
 — *chloroleucum*. Green, white. Demerara. 1838. B. M. t. 3557.
 — *chlopopa*. Green. Mexico. 1880.
 — *Christyanum*. Green, brown. Bolivia. G. C. 1884, xxii. p. 38.
 — *cikare*. 1. White. July. Martinique. 1798. B. M. t. 463. Syn., *E. cuspidatum*.
 — *cingulum*. Ochre; lip spotted with mauve and purple. G. C. 1882, xvii. p. 330.
 — *cinnabarinum*. 1. Crimson. Pernambuco. 1837. H. R. 1842, t. 25.
 — — *latifolium*. Trinidad. 1836.
 — — *minus*. Trinidad. 1836.
 — *citricum*. B. M. t. 3742. See *Cattleya citrina*.
 — *clavatum*. B. R. t. 1870. See *Saccolabium clavatum*.
 — *Clouesii*. Yellow, white. Guatemala. 1835.
 — *cnemidophorum*. Yellow, brown, rose. Guatemala. 1867.
 — *cochlearium*. 1. Purple. July. W. Indies. 1799. Jacq. Ic. t. 605.
 — — *latifolium*. Xalapa. 1828.
 — *collare*. 1 $\frac{1}{2}$. White. Guatemala. 1843.
 — *colrans*. See *E. polyanthum*.
 — *conopseum*. Green, white. Florida. B. M. t. 3457.
 — *conspicuum*. White, rose, purple. Brazil. 1869.
 — *Cooperianum*. Green, rose. Bengal. 1867. B. M. t. 5654.
 — — *caloglossum*. Lip bright purple. G. C. 1882, xvii. p. 460.
 — *cordatum*. See *E. cordifolium*.
 — *cordifolium*. Peru. Syn., *E. cordatum*.
 — *coriaceum*. B. M. t. 3595. See *E. variegatum*, var. *coriaceum*.
 — *corifolium*. 1. Green. March. Central America. 1850.
 — *Coxia*. Brownish, yellow, green. 1877.
 — *crassifolium*. B. M. t. 3543. See *E. ellipticum*.
 — *criniferum*. Yellowish-green, brown, white. Costa Rica. 1871.
 — *crispatum*. See *Dendrobium crispatum*.
 — *cubense*. Yellow, purple. June. Cuba. 1842.
 — *cucullatum*. B. M. t. 643. See *Brassavola cucullata*.
 — *cuspidatum*. B. C. t. 10. See *E. ciliare*.
 — *cyclotella*. Mauve, purple. 1880. Syn., *Barkeria cyclotella*.
 — *Delle* nse. Hybrid between *E. xanthinum* and *E. radicans*. 1891.
 — *densiflorum*. Green, brown. Mexico. 1836. B. M. t. 379. Syn., *E. rubro-cinctum*.
 — *dichrosum amabile*. Rose, crimson. Bahia. 1865.
 — — *strictum*. White; veins purple. Bahia. 1866.
 — *diffusum*. B. M. t. 3565. See *Seraphyta diffusa*.
 — *diffusum*. B. R. 1845, t. 4. See *E. nutans*.
 — *discolor*. See *E. nocturnum*.
 — *durum*. Yellow. Guiana.
 — *eburneum*. Cream. White. Panama. 1867.
 — *ellipticum*. Pink. April. W. Indies. B. C. t. 1276. Syn., *E. crassifolium*.
 — *elongatum*. Jacq. Ic. t. 604. See *E. secundum*.
 — *Endresii*. White, green, orange, mauve. Costa Rica. 1883.
 — *ensatum*. Mexico.
 — *ensifolium*. Andr. Rep. t. 344. See *Oymbidium ensifolium*.
 — *erubescens*. Rose. Mexico. 1837.
 — *evecium*. Rose-purple. Columbia. 1871.
 — *falcatum*. Yellow. Oaxaca. 1838. Syn., *E. lactiflorum*.
 — *falsilogum*. Pale ochre; lip white, with three mauve keels. G. C. 1885, xxiii. p. 566.
 — *favosia*. Yellowish, brown. Mexico. 1874.
 — *fenbriatum*. White, violet. Peru.
 — *flavidum*. Yellow. Pamplona.
 — *flavum*. Yellow. Brazil.
 — *flexuosum*. White, green. Demerara. 1836.
 — *floribundum*. 1. Greenish. October. Mexico. B. M. t. 3637.
 — *fragrans*. $\frac{3}{4}$. White. September. Jamaica. 1778. B. M. t. 1669. Syn., *E. amulum*.
 — — *cinnamomeum*. White. September. Jamaica. 1836.
 — *fraudulentum*. Rosy, yellow. G. C. 1886, xxv. p. 64.
 — *Frederici-Guillielmi*. Crimson, white. Peru. 1871.
 — *fuscatum*. Yellow, pink, white. Cuba.
 — *fuscatum*. B. M. t. 2844. See *E. anceps*.
 — *Ghiesbreghtianum*. Claret, white, purplish. Mexico.
 — *gigantheum*. Brazil. 1843.
 — *glaucum*. A synonym of *Dichaea glauca*.
 — *glumaceum*. White. Brazil. 1839. B. R. 1840, t. 6.
 — *glutinatum*. 1. Green, purple, white. Rio Janeiro. 1843.
 — *gracile*. 3. Red, green. March. Bahamas. B. R. t. 1765.
 — *Grahami*. B. M. t. 3885. See *E. phæniceum*.
 — *grandiflorum*. See *Stanhopea bucephalus*.
 — *graniticum*. See *E. oncidoides*.
 — *guatemalense*. See *E. oncidoides*.
 — *Hanburii*. 2. Rose. August. Mexico. 1843.
 — *Harrisianum*. Pale green, white. Brazil. B. M. t. 3209.
 — *Hartwegii*. Peru.
 — *havane* nse. Havana. 1836.
 — *herbaceum*. Brazil. 1837.
 — *Hormidum*. Yellow, green. August. Mexico. 1836.
 — *ibaguense*. Orange, sennabar, yellow. New Grenada. 1868. Sometimes spelt *ibaguense*.
 — *imantophyllum*. Rose. Demerara.
 — *ionocentrum*. Lemon, greenish-brown; lip white, with violet centre. G. C. 1883, xx., p. 8.
 — *ionosum*. Yellow, green. June. Guiana. 1836.
 — *Karwinskii*. Ochre, brown, white. Mexico. 1869.
 — *Kienastii*. Rose, veined with purple; lip white, with purple lines. G. C. 1887, ii. p. 126.
 — *lacertinum*. 3. Pale pink. November. Havannah. 1835.
 — *lactiflorum*. See *E. falcatum*.
 — *lacustre*. Yellow, green. March. Caraccas. 1840. Syn., *E. leucochilum*.
 — *lamellatum*. See *E. stenopetalum*.
 — *lanceifolium*. Pale yellow. March. Mexico. 1839. B. R. 1842, t. 50.
 — *latilabrum*. Green. March. Brazil. 1840.
 — *ledifolium*. Yellow. Mexico.
 — *lentiginosum*. Yellow, green. March. Demerara. 1837.
 — *leucochilum*. See *E. lacustre*.
 — *Lindleyi*. Rose. Merida.
 — *Lindleyana*. 2. Rosy-purple; lip white purple. Costa Rica. 1842. Syn. *Barkeria Lindleyana*. B. M. t. 6098.
 — — *Centrae*. Rosy-lilac. Costa Rica. 1873. Syn., *Barkeria Lindleyana*, var. *Centrae*.

- E. lineare*. Andr. Rep. t. 445. See *Isochilus linearis*.
- *linearifolium*. 1. White, purple. June. Mexico. 1850. B. M. t. 4572.
- *Linkia* num. Yellow, white. March. Mexico. 1840. Syn., *E. pastoris*.
- *longibulbon*. Guiana. 1839.
- *longicollis*. White, yellow. February. Demerara. 1844. B. M. t. 4165.
- *longipetalum*. See *E. antenniferum*.
- *macrochaetum*. †. Brown, white. July. Mexico. 1836. B. M. t. 5534.
- *album*. White, rose. May. S. America. 1824.
- *roseum*. Rose. May. Guatemala. 1842.
- *macrochaetum*. Green, white. Ceylon.
- *marmoratum*. White, purple-brown. Mexico. 1876.
- *Matthewsii*. Purplish. G. C. 1836, xxvi., p. 458.
- *meliosmum*. Mexico. 1869.
- *michuacatum*. Pale yellow. Mexico. 1840.
- *microchaetis*. Yellow, purple. Guatemala. 1870.
- *monophyllum*. White. Demerara.
- *Monroea* num. White, pink. July. Guatemala. 1840.
- *Mocrea* num. 1. Green, purple. Costa Rica. 1891.
- *Mosei*. Vermilion. Columbia. 1880.
- *muscifera*. See *E. anceps*.
- *myrianthum*. Lilac. June. Guatemala. 1866.
- *naevosum*. White, yellow. February. Oaxaca. 1846.
- *neomora* le. Purple. June. Mexico. 1840.
- *nocturnum*. 1. White. September. Martinique. 1836. B. M. t. 3298.
- *angustifolium*. W. Indies. 1835.
- *latifolium*. 1. Yellow, white. October. W. Ind. 1836.
- *palmitum*. Esquisibo. 1835.
- *nutans*. 1. Green. July. Jamaica. 1793. B. R. t. 17. Syn., *E. dipus*.
- *O'Brienia* num. Garden hybrid. G. C. 1888, iii., p. 770, fig. 103.
- *ochraceum*. †. Yellowish-white. Mexico. 1838. B. R. 1838, t. 26.
- *odoratissimum*. 1. Dingy green. August. Rio Janeiro. 1827. B. R. t. 1415.
- *oncidioides*. 3. Yellow, brown. S. Amer. B. R. t. 1623. Syns., *E. graniticum* and *E. guatemalense*.
- *orchidiflorum*. Brown. Bahia.
- *orgyale*. Yellow. St. Bogota.
- *ovalifolium*. Green, white. April. Mexico. 1835.
- *ovulum*. Green, white. July. Bolanos. 1842.
- *oxyptalum*. Yellow. April. Cuba.
- *pachyanthum*. Green. Guiana. 1837.
- *pallidum*. See *E. auritum*.
- *pallidiflorum*. †. White, rose, purple. May. W. Indies. 1829. B. M. t. 2980.
- *palpitulum*. Lilac. Mexico. 1879.
- *paniculatum*. 2-4. Lilac. April. Peru and Columbia. 1868.
- *papillosum*. B. M. t. 3631. See *E. adenocarpum*.
- *Parkinsonia* num. 2. Green, yellow. September. Mexico. 1838. B. M. t. 3778.
- *pastoris*. See *E. Linkianum*.
- *patens*. White. October. St. Vincent. B. M. t. 3800.
- *paysonense*. Scarlet, vermilion, orange. Columbia and Peru. G. C. 1885, xxiii., p. 726.
- *phoeniceum*. †. Cream, purple, green. June. Cuba. 1840. Lindl. Ser. t. 46.
- *physodes*. Whitish-brown. Costa Rica. 1873.
- *picatum*. Yellow, crimson. July. Demerara. 1838.
- *piperinum*. Quito. 1846.
- *placatum*. Green, violet, purple, yellow. Cuba. B. R. 1847, t. 35.
- *polyanthum*. Brown, white, yellow. Mexico. 1851.
- *polybulbon*. Yellow, lip white. Jamaica. B. C. t. 1230.
- *polystachyum*. Yellow. June. Peru. 1840.
- *primitivum*. Yellow, brown. Bahamas. 1837.
- *prismatocarpon*. Yellow, pink, purple. Central America. 1862.
- *pristes*. Cinnabar; lip yellow, spotted with cinnabar. G. C. 1886, xxvi., p. 262.
- *propinquum*. Brown. Mexico.
- *pseudepidendrum*. 2. Green, orange-vermillion. Central America. 1871.
- *pterocephalum*. Brownish-green; lip yellow, white. December. Mexico. B. R. 1842, t. 34.
- *pugioniformis*. Greenish, changing to yellow; lip white, changing to yellow. Mexico. 1890.
- *punctatum*. See *Cyrtopodium punctatum*.
- *punctulatum*. Brown, green; lip sulphur, with brown spots. Mexico. G. C. 1885, xxiv., p. 70.
- *purpureum*. Greenish-yellow; lip white. Caraccas. 1842.
- *pusillum*. †. Yellowish-green, spotted with brown. Brazil. 1891.
- *pyrifera*. Red, yellow. January. Cuba. B. R. 1847, t. 50.
- *pygmaea* num. B. M. t. 3232. See *Hormidium pygmaeum*.
- *quadrum*. Green, brown. Central America. 1850.
- *radiale* num. 1. Green. Purple. Mexico. 1835. B. R. 1844, t. 45.
- *fuscatum*. Purple. G. C. 1889, v. p. 43.
- *radicans*. Orange, yellow. October. Mexico. 1839. Paxt. Mag. xii. p. 145. Syn., *E. rhizophorum*.
- *ramosum*. 1. Pale yellow. June. Jamaica. 1836. Syn., *E. rigidum*.
- *raniferum*. †. Green, brown. May. Mexico. 1839. B. R. 1842, t. 42.
- *recurvatum*. Rose. April. Columbia.
- *refractum*. Dark red. May. Caraccas.
- *replicatum*. Yellowish, pink. July. New Grenada. 1881.
- *rhizophorum*. See *E. radicans*.
- *rigidum*. Ic. Pl. t. 314. See *E. ramosum*.
- *rubrocinetum*. See *E. densiflorum*.
- *rubrum*. Red. Brazil. 1845.
- *saxatile*. Red, purple. Guiana.
- *septentrionale*. Yellow, purple. Jago.
- *Schomburgkii*. 2. Scarlet. Guiana. 1837. B. R. 1838, t. 53.
- *scutellata*. Green, yellow. Guayana.
- *selligerum*. Pale white. April. Mexico. 1836.
- *seriatum*. Olive-green, brown, white, violet. Guatemala. 1870.
- *serpens*. Violet. Peru.
- *sinense*. Andr. Rep. t. 216. See *Cymbidium sinense*.
- *Skinneri*. †. Green, white. July. Cumana. 1834. B. M. t. 3951.
- *major*. 1. Light purple. November. 1847.
- *Sophonitis*. Greenish, purple. Peru. 1867.
- *squaridum*. Yellow, brown. June. Mexico. 1840.
- *Stamfordianum*. White, red. April. Guatemala. 1836. B. M. t. 4759.
- *Leednum*. Ochre, rose, spotted with purple. G. C. 1888, iii. p. 521.
- *Wallacei*. Mountains of S. Bogota. G. C. 1887, i. p. 543.
- *Stangerianum*. †. Green. Panama. G. C. 1881, xv. p. 462.
- *stenopetalum*. 1. Rose. March. Jamaica. B. M. t. 3410. Syn., *E. lamellatum*.
- *striatum*. White, red. May. Mexico. 1838.

- E. subulatifolium*. Yellow. Mexico.
 — *springothyrsum*. Rosy-purple, white, yellow. Bolivia. 1868.
 — *tampé nse*. †. Yellowish-brown; lip white, with purple veins. Florida.
 — *tessellatum*. Guatemala. B. M. t. 3638.
 — *tibi cinia*. 8. Rose. Honduras. 1836.
 — *tigrinum*. Yellow, red. Merida.
 — *tolmé nse*. Yellow. Tolima.
 — *torpaatum*. Peru.
 — *trachychilium*. Olive-green, dotted with red; lip yellow, dotted with red. Mexico. Gf. t. 1205.
 — *tridens*. White, green. April. Demerara. 1836.
 — *tripunctatum*. Greenish-yellow, purple, orange. Mexico.
 — *turialoe*. Costa Rica. 1871.
 — *umbellatum*. Green. June. Jamaica. 1793. B. M. t. 2030.
 — *undulatum*. B. M. t. 777. See *Oncidium carthagenense*.
 — *vandiflorum*. Purple. April. Mexico.
 — *variegatum*. 1. Green, white. January. Rio Janeiro. 1829. B. M. t. 3151.
 — *coriaceum*. 1. Green, purple. Demerara. Syn., *E. coriaceum*. B. M. t. 3895.
 — *venosum*. White, violet. Mexico.
 — *verrucosum*. 1. Green, brown. Jamaica. 1825. B. R. 1844, t. 51.
 — *vincetinum*. St. Vincent. 1840.
 — *violaceum*. B. C. t. 337. A synonym of *Cattleya Loddigesii*.
 — *virens*. Green. Serampore.
 — *viridescens*. Green, brownish-yellow. July. Dominica. B. C. t. 1867.
 — *viridiflorum*. Green, purple. May. Brazil.
 — *viridipurpureum*. Jamaica. B. M. t. 3666.
 — *vittatum*. 1. Orange, yellow. September. Mexico. 1840. B. R. 1840, t. 35.
 — *floré-pléno*. Vermilion. Flowers regular. July. G. C. 1890, viii. p. 123.
 — *majus*. Orange, yellow. September. Oaxaca. 1841. Syn., *E. vitellinum*, var. *giganteum*. Warn. Orch. Alb. ser. 3, t. 27.
 — *viviparum*. White. January. Guiana. 1838.
 — *vulvibile*. Peru.
 — *Wagenérii*. Yellow. Venezuela. 1851.
 — *Walkérsii*. Yellow, brown, white. Columbia. 1875.
 — *Xiphéres*. †. Brownish-yellow, sulphur. Columbia. 1853.

Epidermis. The membrane which covers leaves and the younger parts of stems. It is frequently furnished with pores, called stomata.

Epigæa. (From *epi*, upon, and *gaia*, the earth; referring to its trailing habit. Nat. ord., *Ericaceæ*; Tribe, *Andromedæ*.)

Hardy evergreen sweet-scented trailers, suitable for rock-works, and delighting in moist, peaty soil in shade; propagated chiefly by layers. *E. repens*. †. White. July. Canada and United States. 1736. Andr. Rep. t. 102.
 — *rubicunda*. †. Red. March. 1836. Swt. Fl. Gard. ser. 2, t. 384.

Epigynium. (From *epi*, upon, and *gyné*, a female; stamens apparently attached to the pistil. Nat. ord., *Vacciniaceæ*.)

Slove evergreens. Cuttings under a hand-glass in heat. Rich sandy loam.

- E. acuminatum*. 4. Red. Khasia. B. M. t. 5010. A synonym of *Corallobotrys acuminata*.
 — *leucobotrys*. B. M. t. 5103. See *Vaccinium*.

Epilobium. Willow herb. (From *epi*, upon, and *lobos*, a pod; flowers superior, or seated on the seed-pod. Nat. ord., *Onagraceæ*. Syn.; *Chamænerium*. Allied to *Clarkia* and *Zauschneria*.)

Hardy herbaceous perennials. Divisions, and many by seeds; common, light garden-soil. *E. pilosum* requires the greenhouse or a cold pit.

- E. alpestre*. †. Purple. June. Switzerland. 1820.
 — *angustifolium*. 4. Purple. July. Britain. Eng. Bot. ed. 3, tt. 495-6.
 — *alatum*. 4. White. July. Britain.
 — *angustissimum*. B. M. t. 76. See *E. Dodonæi*.
 — *cane-scens*. See *E. junceum*.
 — *coloratum*. 3. Purple. June. N. Amer. 1805.
 — *crassifolium*. 1. Red. June. 1829.
 — *cyllindricum*. Red. June. N. India. 1837.
 — *dahuricum*. †. White. June. Dahuria. 1822.
 — *Dodonæi*. 1‡. Purple. July. France. 1700. Syn., *E. angustissimum*.
 — *hirsutum*. 4. Purple. July. Britain. Eng. Bot. ed. 3, t. 497. Codlins and Cream.
 — *variegatum*. 4. Rosy. June. England.
 — *hypericifolium*. Red. June. South Europe. 1837.
 — *juinceum*. Rose. June. Australia. 1826. Syn., *E. canescens*.
 — *lanceolatum*. 1‡. Purple. July. Italy. 1810. Eng. Bot. ed. 3, t. 500.
 — *mirum*. 1. White. August. Russia. 1838.
 — *nitens*. Bluish. June. Bohemia. 1827.
 — *obcordatum*. †. Bright rose. California. 1885.
 — *rosmarinifolium*. 2. Purple. June. North Europe. 1800.
 — *sine-nse*. See *E. concinnum*.
 — *spicatum*. 4. Purple. June. N. Amer.
 — *strictum*. 1‡. Purple. July. Pennsylvania. 1817.
 — *tomentosum*. 3. Purple. June. Asia. 1818.
 — *variegatum*. G. C. 1881, xvi. p. 302.
 — *villosum*. 2. Purple. July. Cape of Good Hope. 1799.
 — *virgatum*. 2. Purple. July. Sweden.
- Epimedium.** Barrenwort. (From *epimedium*, a name used by Pliny. Nat. ord., *Berberidæ*; Tribe, *Berbericæ*. Allied to *Jeffersonia*.)
- Hardy herbaceous perennials. Seeds, divisions; sandy loam. *E. alpinum* does best in moist, peaty soil.
- E. alpinum*. †. Crimson. May. England. Eng. Bot. ed. 3, t. 507.
 — *puberulum*. Yellowish-red, yellow. Caucasus. 1880.
 — *concinnum*. †. Purplish. Spring. Japan. 1872. Syn., *E. sinense*.
 — *diphyllum*. †. Red. May. Japan. 1830. B. M. t. 3448. A synonym of *Aceranthus diphyllus*.
 — *grandiflorum*. White. April. Japan 1836.
 — *hexandrum*. See *Vancouveria hexandra*.
 — *macranthum*. 1. White, violet. April. Japan. 1836.
 — *Muschia-num*. 1. White. March. Japan. 1836. B. M. t. 3745.
 — *sine-nse*. See *E. concinnum*.

- E. versicolor*.
— *viola ceum*. $\frac{3}{4}$. White, violet. April. Japan. 1837. B. M. t. 3751.
— *Perralderia num.* $\frac{3}{4}$. Yellow, red. Algeria. June. 1879. B. M. t. 6509.
— *pinna tum.* $\frac{3}{4}$. Yellow. March. Persia. B. M. t. 4456.
— *ptero'ceras.* $\frac{3}{4}$. Yellow. Levant.
— *ru'brum.* 1. Crimson, yellow. May. Japan?

Epipa'ctis. (From *epipegnuo*, to coagulate; its effect on milk. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Limodoreæ*. Allied to *Cephalanthera*.)

Pretty British orchids, not difficult to grow. Divisions; common soil; kept rather dry during the resting period.

E. ensifolia. See *Cephalanthera ensifolia*.

- *latifolia.* 1 $\frac{1}{2}$. Purple. July. Eng. Bot. ed. 3, t. 1450. Syn., *E. purpurata*.
— — *rubiginosa.* Dingy red-purple. Syns., *E. media*, *E. ovalis*, and *E. rubiginosa*.
— *media* and *ovatis.* See *E. latifolia*, var. *rubiginosa*.
— *pall'istris.* 1-1 $\frac{1}{2}$. Green, purple. July. Eng. Bot. ed. 3, t. 1482.
— *purpura'ta.* See *E. latifolia*.
— *rubiginosa.* See *E. latifolia*, var. *rubiginosa*.
— *ru'bra.* See *Cephalanthera rubra*.

Epi'phora. (From *epiphora*, inflammation of the eyes. A Cape terrestrial or ground Orchid. Nat. ord., *Orchideæ*; Tribe, *Vandeeæ-Cymbideæ*.) See *Polystachya*.

E. pubescens. See *Polystachya pubescens*.

Epiphroni'tis. (A combination formed from *Epidendrum* and *Sophronitis*, from which genera this has been produced by hybridization. Nat. ord., *Orchideæ*.)

A pretty orchid. For culture, see SOPHRONITIS.

- E. Veitchii.* $\frac{3}{4}$. Orange, yellow. A hybrid between *Epidendrum radicans* and *Sophronitis grandiflora*. 1890. Journ. Hort. ser. 3, xxi. p. 513, f. 68.

Epiphyllum. (From *epi*, upon, and *phyllon*, a leaf; flowers borne on the edges of the leaf-like branches. Nat. ord., *Cactaceæ*.)

Stove or Greenhouse fleshy-leaved 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 *Cereus speciosissimus*, etc.

- E. Alentei'nis.* Brazil.
— *crue'ntum.* White.
— — *Ackerma'nsi.* Scarlet, flushed with violet-purple. 1880.
— *Gaertneri.* Brazil. 1884. B. M. t. 7201. Syns., *E. Makoyanum* and *E. Russellianum* var. *Gaertneri*.
— *Gibsoni.* Dark orange-red. 1886.
— *Guad'neyi.* Reddish, cream, white. 1883.
— *Makoyanum.* Journ. Hort. 1889, p. 362. See *E. Gaertneri*.
— *Russellia'num.* Rose. May. Brazil. B. M. t. 3717.
— — *Gaertneri.* See *E. Gaertneri*.
— — *ru'brum.* Rosy-red.
— — *super'bum.* Purple, white.
— *spl'ndidum.* See *Cereus splendens*.

- E. truncatum.* Red or rose. June. Brazil. 1818. Syn., *Cactus truncatus*. B. M. t. 2562.
— — *bi'color.* White edged with rose.
— — *coccineum.* Deep scarlet.
— — *elegans.* Orange-red, purple.
— — *magniflorum.* White, rose.
— — *Ruckeria'num.* Reddish-purple, violet.
— — *salmoneum.* Reddish-salmon.
— — *spectabile.* White, purple.
— — *viola ceum.* White, pale purple.
— — *super'bum.* White, deep purple.

Epipre'mnum. Tonga Plant. (From *epi*, upon, and *premnon*, a trunk; the plant attaches itself to the trunks of trees. Nat. ord., *Aroidæ*; Tribe, *Calleeæ*.)

Ornamental stove climber.

- E. mirabile.* Leaves dark green, the young ones entire, mature ones pinnatifid. Fiji. 1882.

Epi'scia. (From *epi*, upon, and *scia*, a shadow; the species growing in shady places. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*.)

Stove herbaceous perennials. For cultivation, see GESNEREA.

- E. bicolor.* $\frac{3}{4}$. Purple, white. New Grenada. B. M. t. 4390.
— *bracte'ens.* 2. White. June. New Grenada. 1852. Syn., *Centrosolenia bractesens*. B. M. t. 4675.
— *chontale'nsis.* $\frac{3}{4}$. White. Nicaragua. 1867. Syns., *Cyrtodeira chontalensis* and *Achimenes chontalensis*.
— *cuprea'ta.* 1 $\frac{1}{2}$. Scarlet, yellow. June. Mexico. 1844. Syn., *Achimenes cupreata*. B. M. t. 4312.
— — *met'lica.* Orange-scarlet. Columbia. 1869.
— — *viridifolia.* Leaves tinged with copper. New Grenada. 1860. Syn., *Cyrtodeira cupreata*. B. M. t. 5195.
— *erythro'pus.* Flesh, yellow, purple-orange. Columbia. 1876. B. M. t. 6219.
— *fulgida.* $\frac{3}{4}$. Scarlet. July. Columbia. 1873. B. M. t. 6136.
— *glabra.* 1. White. October. La Guayra. 1846. Syn., *Centrosolenia glabra*. B. M. t. 4552.
— *Lucia'na.* Red. Columbia. 1876. Ill. Hort. 1876, t. 236.
— *macula'ta.* Yellow, brown. British Guiana. 1890. B. M. t. 7131.
— *melittifolia.* 1. Crimson. March. Dominica. 1852. B. M. t. 4720. Syn., *Achimenes melittifolia*.
— *pi'cta.* $\frac{3}{4}$. White. Banks of the Amazon. 1851. Syn., *Centrosolenia picta*. B. M. t. 4611.
— *pulche'lla.* 2. Yellow, red. July. Trinidad.
— *spl'ndens.* Pale red. Columbia. 1857. Syns., *Achimenes splendens* and *Tapina splendens*.
— *tessella'ta.* See *Centrosolenia bullata*.

Epise'ma cæru'leo-ce'phala. The



Figure-of-eight Moth appears early in

October. The bluish-grey upper wings have a yellowish-white spot in their centres. The spot being shaped like a double kidney, or 8, gives the popular name to the insect. It should be destroyed whenever observed, as its caterpillars, at the end of the following spring very often destroy the young leaves of plums and peaches.

Epistephium. (From *epi*, upon, and *stephas*, a crown. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Vanilleæ*.)

Terrestrial orchid. For cultivation, see ORCHIDS.

E. Willia'nsii. Rosy purple. Bahia. 1865. B. M. t. 5485.

Equisetum. Horse-tail. (From *equus*, a horse, and *seta*, a hair. Nat. ord., *Equisetaceæ*.)

Hardy perennials, many of which are cultivated in Botanic Gardens. *E. maximum* is an excellent plant for the margins of ponds and damp shady woods; divisions.

E. maximum. 3-6. Britain. Syn., *E. Telmateia.*

— *sywa'ticum.* 1-2. Britain.

Eragrostis. Love grass. (From *eros*, love, and *agrostis*, grass. Nat. ord., *Gramineæ*; Tribe, *Festuceæ*.)

Hardy and half-hardy grasses, of no particular beauty.

E. cegypti'aca. Egypt.

— *capilla'ris.* W. Indies.

— *cilia'ris.* Tropical America. Syn., *Poa ciliaris.* Jacq. Ic. t. 304.

— *e'legans.* Brazil.

— *megasta'chya.* Europe. Syn., *E. major.*

— *peruvia'na.* S. America. Syn., *Poa peruviana.* Jacq. Ic. t. 18.

Eranthemum. (From *erao*, to love, and *anthos*, a flower; referring to the beauty of the flowers. Nat. ord., *Acanthaceæ*.)

Warm greenhouse and stove perennials. Cuttings of points of shoots when a little firm, in sandy loam, in bottom-heat, under a hand-glass; peat one part, loam two parts.

E. acanthophorum. Lilac. July. China. 1822. Synonymous with *Barleria acanthophora.*

— *albiflorum.* 2½. White. July. B. M. t. 4225.

— *albo-marginatum.* Leaves white-margined. Polynesia. 1880.

— *ambiguum.* 2. Bed. July. 1821. Syn., *Anthacanthus acicularis.*

— *Andersoni.* White, purple. November. India. 1868. B. M. t. 5771.

— *asperum.* White, spotted with purple. March. Solomon Isles. 1867. B. M. t. 5711.

— *atro-purpureum.* Leaves and stems dark lurid purple. Polynesia. 1875.

— *barlerioides.* Blue. August. E. Ind. 1824. A synonym of *Dædalacanthus suffruticosus.*

— *Beyrichii.* 1. Pale lilac. Leaves dark green. Brazil. Gf. t. 535.

— *variegatum.* Leaves variegated. Syn., *Chamæranthemum Beyrichii*, var. *variegatum.* B. M. t. 5557.

— *bicolor.* ¾. White, red. July. Lucona.

1802. Syn., *Justicia bicolor.* B. M. t. 1423.

E. borneense. May. N. W. Borneo. B. M. t. 6701.

— *cape'ense.* 1. Purple. May. E. Ind. 1818. A synonym of *Dædalacanthus purpurascens.*

— *cinnabarinum.* Scarlet. Martaban. 1880. Gf. t. 910.

— *ocellatum.* Crimson, with white eye. Monlmein. 1871. B. M. t. 5921.

— *Cope'ri.* White, purple. June. New Caledonia. 1864. B. M. t. 5467.

— *crenulatatum.* 1. Lilac. October. Nepal. 1824. B. R. t. 879.

— *grandiflorum.* B. M. t. 5440. See *E. Parishii.*

— *eboracense.* White. Duke of York Island. 1881.

— *eldorado'.* Leaves yellow, mottled and veined with green. Polynesia. 1877.

— *e'legans.* 3. Scarlet. June. Guinea. 1824.

— *fœcundum.* 1½. Lilac. June. Brazil. 1829. B. R. t. 1494.

— *Gaudichan'dii.* Gf. t. 535, f. 2. A variegated form of *E. Beyrichii.*

— *hypocrateriforme.* Red. W. Tropical Africa. 1870. B. M. t. 6181.

— *igneum.* See *Chamæranthemum igneum.*

— *laxiflorum.* 2-4. Purple. Polynesia. 1877. B. M. t. 6336.

— *leuconeuron.* Lilac. Gf. t. 174.

— *longiflorum.* 1. Scarlet. November. Gf. t. 536, f. 1.

— *macrophyllum.* Light blue. Winter. India.

— *marmoratum.* New Hebrides. 1874. Gf. t. 536, f. 2.

— *Moo'rei.* Leaves mottled. Polynesia.

— *montanum.* B. M. t. 4031. See *Dædalacanthus montanus.*

— *nervosum.* See *Dædalacanthus nervosus.*

— *nigræscens.* Leaves blackish-purple. Polynesia. 1878.

— *nigrum.* Leaves purplish. Solomon Islands. 1880. Ill. Hort. new ser. t. 404.

— *palati'ferum.* Scarlet or lilac, yellow. India. 1871. B. M. t. 5957.

— *Parishii.* Pinkish lilac. Monlmein. 1864. Syn., *E. crenulatum*, var. *grandiflorum*, B. M. t. 5440, and *Asystasia Parishii.*

— *pulchellum.* Andr. Rep. t. 88. See *Dædalacanthus nervosus.*

— *racemosum.* Blush. August. E. Ind. 1826.

— *reticulatum.* Leaves with yellow venation. Polynesia. 1875.

— *roseum.* Rose-purple. Amazons. 1876. Ill. Hort. new ser. t. 235.

— *rubroneurium* and *rubrovenosum.* See *Fittonia Verschaffeltii.*

— *sanguinolentum.* Leaves red-veined. Madagascar. 1864. Fl. Ser. t. 1583.

— *Schomburgkii.* Leaves green, with yellow veins. Australia. 1878. Ill. Hort. new ser. t. 349.

— *spinosum.* 3. July. W. Ind. 1733. Syn., *Anthacanthus spinosus.*

— *strictum.* B. E. t. 867. See *Dædalacanthus strictus.*

— *tricolor.* Leaves olive-green, with purplish and salmony-pink blotches. Polynesia. 1876.

— *tuberculatum.* White. New Caledonia. 1863. B. M. t. 5405.

— *variabile.* 2. Purple. June. Port Jackson. 1820.

— *velutinum.* Rosy pink.

— *verbena euum.* Silvery variegated. Brazil. 1862.

— *Verschaffeltii.* See *Fittonia.*

— *versicolor.* Leaves variegated. Polynesia. 1875.

Eranthis. Winter Aconite. (From

er, spring, and *anthos*, a flower; referring to its early flowering. Nat. ord., *Ranunculaceæ*; Tribe, *Helleboreæ*.)

Hardy tuberous perennials; offsets; common soil.

E. hiemalis. †. Yellow. February. Cent. and S. Europe, 1596. Naturalized in England Eng. Bot. ed. 3, t. 43.

— *sibirica*. †. Yellow. March. Siberia. 1826.

Ercilla. (From *ercis*, creeping. Nat. ord., *Phytolaccaceæ*.)

Hardy evergreen creeper, adhering, like ivy, to walls, etc.

E. spicata. Purple. Chili. 1840.

Eremæ'a. (From *eremos*, solitary; referring to the female organ, or solitary style. Nat. ord., *Myrtaceæ*; Tribe, *Leptospermeæ*. Allied to *Calothamnus*.)

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.

E. ericifolia. Synonymous with *E. pilosa*.

— *imbriata*. Purple. June. 1841

— *villosa*. Pink. June. 1842.

Ere'mia. (From *eremos*, solitary; referring to the seed being but one in a cell. Nat. ord., *Ericaceæ*; Tribe, *Ericaceæ*. Allied to *Erica*.)

Greenhouse evergreens, from South Africa. Cuttings of the points of shoots when young growth has extended beyond an inch or so; sandy peat.

E. Totta. 2. Red. June. 1810.

— *tuberculata*. Syn., *Erica tubercularis*.

Eremosta'chys. (From *eremos*, solitary, and *stachys*, a spike. Nat. ord., *Labiatae*; Tribe, *Stachydeæ*.)

Hardy perennial. Cuttings in spring. Light rich loam.

E. laciniata. 6. Yellow, purple. July. Caucasus. 1731. B. R. 1845, t. 52. Syns., *E. iberica*, and *Phlomis laciniatus*, Swt. Fl. Gard. t. 24.

Eremu'rus. (From *eremos*, solitary, and *oura*, tail; referring to the flower-spike. Nat. ord., *Liliaceæ*; Tribe, *Asphodeleæ*. Allied to *Asphodel*.)

Very showy herbaceous perennials. Divisions and seeds. Rich sandy loam, in warm sunny positions.

E. aurantiacus. †. Yellow. Afghanistan. 1876. Gf. t. 1168, fig. 6.

— *buchariensis*. 3. White with reddish-brown central line. Buchara. 1890. Gf. t. 1315, fig. 1.

— *Bu'ngelii*. 1. Yellow. Persia. 1879. Gf. t. 1168, fig. a.

— *caucasicus*. Yellow. May. Caucasus. 1834.

— *himalaiensis*. 2. White. W. Himalayas. G. C. 1881, xvi, p. 49.

— *O'lgæ*. White. Summer. Central Asia. Gf. t. 1048.

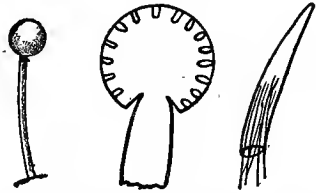
— *robustus*. Rose. Turkestan. 1874.

— *spectabilis*. 2. Yellow. May. Siberia. 1800.

— *turkestanicus*. 4. Reddish-brown, white. Turkestan. 1800.

Ergot. *Claviceps purpurea*. A

fungus which attacks grasses, especially rye, by destroying the ovary, and forming in its place a hard mass of fungoid filaments (*sclerote*). From this sclerote drum-stick shaped bodies are, at length, formed, in the head of which are numerous cavities containing elongated bags, each of which holds linear spores, by which the fungus is reproduced. These structures are shown, much magnified, in the accompanying figures.



E'ria. (From *erion*, wool; referring to the down on the leaves of some of the species. Nat. ord., *Orchideæ*; Tribe, *Epidendreeæ*—*Eriaceæ*. Allied to *Dendrobium*.)

Stove orchids. Divisions; fibry peat and chopped, decayed moss; the plant to be raised, roots and all, above the surface of the pot or shallow basket. Abundance of moisture during summer.

E. acerata. †. White. E. Indies.

— *acutifolia*. White, veined violet; lip purple, yellow. India. 1842.

— *acutissima*. Yellow, brownish. 1876.

— *armeniaca*. 1. Bracts apricot; flowers greenish. Phillipines. B. R. 1841, t. 42.

— *barbata*. Yellow, purple. Khasia. 1856.

— *Barringtoniana*. Yellowish. Borneo. 1872.

— *bicolor*. †. White. Ceylon. 1888.

— *bigibba*. Pale red, green, white, yellowish, purple. Borneo. G. C. 1884, p. 680.

— *bracteata*. White, crimson. Singapore. B. R. 1844, t. 29.

— *carinata*. See *E. Fordii*.

— *clavicularis*. White, yellow. Chirra. 1837.

— *convallarioides*. White, yellow. India. B. R. 1841, t. 62.

— *ma'jor*. Ivory-white. B. R. 1847, t. 63.

— *Corne'ri*. Greenish, white, purplish. Formosa. 1878.

— *coronaria*. Yellow. Khasia. 1837. Syn., *Cœlogyme coronaria*.

— *Curtisii*. Yellowish-white. Borneo. 1880.

— *Dayana*. Honey-yellow, brown. India. 1877.

— *Dillwynii*. White or cream. Phillipines. B. M. t. 4163.

— *Elwe'sii*. Brownish-ochre. Himalayas. G. C. 1888, xix, p. 402.

— *excavata*. †. White, yellow, pink. Nepal.

— *extincta*. White, purple. Burmah. 1871.

— *ferox*. Brownish, white. Java. 1869. Syn., *Trichotosia ferox*.

— *ferruginea*. †. White, pink. Khasia. B. R. 1839, t. 35.

— *flava*. 1. Yellow, marked with purple. Trop. Himalayas. Syns., *E. pubescens* and *Dendrobium pubescens*.

— *floribunda*. 1. White, crimson. Singapore. 1842. B. R. 1844, t. 20.

— *Fordii*. 1. Light yellowish-green. Hong

- Kong. G. C. 1886, xxvi, p. 584. Syn., *E. carinata*.
- E. t'gnea*. Vermilion. Borneo. G. C. 1881, xv, p. 782.
- *leucoza'ntha*. White, yellow, brownish.
- *lineoli'gera*. White, purple. Siam. G. C. 1885, xxiv, p. 262.
- *longicav'lis*. White. Chirra. 1837.
- *longila'bris*. White, purple. Philippines. 1838.
- *margin'a'ta*. †. White; lip pale yellow, edged with red. Burmah. G. C. 1889, v, p. 200.
- *mei'raz*. † inch. Purple-brown. Autumn. Burmah. 1880. Syn., *Cryptochilus meiraz*.
- *mergue'nsis*. Sulphur-yellow. Burmah. 1880.
- *monosta'chya*. Greenish-yellow. Java. G. C. 1885, xxiii, p. 532.
- *musci'cola*. Yellowish-green. Ceylon. 1887.
- *myristicea'for'mis*. White. Moulmein. 1863.
- *nu'tans*. White, red, tipped yellow. Singapore.
- *obe'sa*. White, tinged pale pink. February. Malay Peninsula. 1863. B. M. t. 5391.
- *panteula'ta*. Greenish-yellow. Sikkim and Khasia Mountains.
- *pa'nnea*. Singapore. 1842.
- *polyu'ra*. Pink, purple, yellow. Manilla.
- *pulche'lla*. Yellow. India. 1840.
- *reticula'ta*. † inch. Purple-brown. India. Syn., *Porpax reticulata*.
- *rhodo'ptera*. Pale ochre, purple. G. C. 1882, xviii, p. 586.
- *Rima'nui*. Pale yellow, purple. Burmah. G. C. 1885, xxiv, p. 712.
- *ro'sea*. Pink. October. China. 1824. B. R. t. 978.
- *sphaerochi'la*. Ochre-yellow, violet-purple. Khasia. 1878.
- *stella'ta*. 2. Yellowish-red. February. Java. B. R. t. 978.
- *striola'ta*. Ochre, purple. New Guinea. 1888. III. Hort. xxxv, t. 48.
- *veluti'na*. Singapore.
- *vesti'la*. 1. Red, brown. India. 1842. B. R. 1845, t. 2.
- *vitta'ta*. Green, striped with red. Ceylon. G. C. 1882, xvii, p. 330.

Eria'nthus. (From *erion*, wool, and *anthos*, a flower; in allusion to the tuft of hairs at the base of each spikelet. Nat. ord., *Gramineæ*; Tribe, *Andropogoneæ*. Allied to *Andropogon*.)

Ornamental perennial grasses.

E. Monstie'rii. 10. Mount Olympus. 1872. Hardy.

— *Rave'nnae*. Useful in subtropical gardening.

Eri'ca. Heath. (From *erico*, to break; referring to the brittle nature of the wood. Nat. ord., *Ericaceæ*; Tribe, *Ericæe*.)

All natives of South Africa, except where otherwise mentioned, many, however, of those mentioned below are of garden origin. Cuttings of the points of shoots, when fresh growth enables the handling of them easily, 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 fibry 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. Abundance of air when possible during winter.

HARDY EVERGREEN.

- E. arbo'rea*. 5. White. May. South Europe. 1658. Sibth. Fl. Gr. t. 351.
- — *mi'nima*. White. April. South Europe.
- — *squarro'sa*. 4. White. April. South Europe. 1800.
- — *stylo'sa*. 5. White. May. South Europe. 1658.
- *ca'rnea*. †. Pale purple. February. Germany. 1763. B. C. t. 1452.
- — *herba'cea*. †. Pink. February. Germany.
- *cine'rea*. 1-2. Crimson-purple. July. Britain.
- — *atropurpu'rea*. Purple. Summer. Scotch Highlands. B. C. t. 1409.
- — *pa'llida*. Pale pink. Scotland. B. C. t. 1505.
- *herba'cea*. Flesh. May. South Europe. 1763.
- *Mackia'na*. Purple. July. Ireland.
- *mediterra'nea*. 4. Purple. April. Portugal. 1648. B. M. t. 471.
- — *alba*. 3. White.
- *stami'nea*. 2. Red. June. 1799. Andr. Heath. t. 193.
- *viridipurpu'rea*. 3. Green, purple. May. Portugal.

GREENHOUSE EVERGREEN.

- E. acumina'ta*. 1‡. Red. August. 1800. Andr. Heath. t. 101.
- — *pa'llida*. 1. Pale red. June. 1820.
- *acu'ta*. †. Red. June. 1799. Andr. Heath. t. 1.
- *æ'mula*.
- *aggrega'ta*. Pink. July. 1803. B. C. t. 1678.
- *Aitonia'na*. 2. White, purple. August. 1790. B. M. t. 429.
- *alb'ens*.
- *al'vida*. 2. White. July. 1826.
- *alopeuroi'des*. Pink. 1817. B. C. t. 874.
- *ame'na*. 1. Purple. June. 1795.
- *ampulla'cea*. 2. White, red. June, 1790. B. M. t. 303.
- *andromedeo'ly'ra*. 2. Pink. May. 1803. Andr. Heath. t. 151.
- *arbu'scula*. 1. Red. May. 1810. B. C. t. 843.
- *Archeria'na*. 1‡. Dark scarlet. September. 1796. Andr. Heath. t. 3.
- *a'rden's*. 2. Scarlet. May. 1800. Andr. Heath. t. 51.
- *argentifo'ra*.
- *arista'ta*. 1‡. Purple, white. June. 1501. Andr. Heath. t. 152.
- *articula'ris*. Pink. Spring. B. M. t. 423.
- *a'spera*. 2. Yellow. Winter. Andr. Heath. t. 104.
- *assu'rgens*. 1. White. May. 1821.
- *au'rea*. 2. Orange. August. 1799. Andr. Heath. t. 153.
- *australis*. 2. Pale purple. March. Andr. Heath. t. 52.
- *azaleo'ly'ia*. Lilac. June. 1798.
- *ba'ccans*. 1‡. Pink. April to July. B. M. t. 358.
- *Baudonia'na*. 2. Purple. July. 1810. Andr. Heath. t. 205.
- *Banksia'na*. †. White, purple. 1789. Andr. Heath. t. 105.
- — *alba*. †. White. June. 1812.
- — *purpu'rea*. †. Purple. June. 1800. Andr. Heath. t. 106.
- *Beaumontia'na*. †. Purple. June. 1820. Andr. Heath. 253.

- E. Bergia'na* 1½. Purple. June. 1757. B. C. t. 939.
- *bicolor*. 2. Green, red. June. 1790. Andr. Heath. t. 54. B. C. t. 1001.
- *biflora*. White, pink. B. C. t. 683.
- *blannda*. 2. Purple, orange. May. 1798. Andr. Heath. t. 107.
- *Blandfordia'na*. 1½. Yellow. May. 1803. B. M. t. 1793.
- *Bonplandia'na*. 1. Pale yellow. July. 1812. B. C. t. 345.
- *Bordia'na*. 1. White. October. 1822. B. C. t. 842.
- *brevifolia*. 1. April. 1800.
- *Broadleya'na*. 1½. Reddish-purple, yellow. Autumn. Andr. Heath. t. 206.
- *Bruni'ades*. 6. Flesh-colour. Spring. Andr. Heath. t. 6.
- *bucciniflora*. ½. Flesh-coloured. May to September. B. M. t. 2465.
- *Burne'itii*. Red, white. Fl. Ser. t. 845.
- *Ca'fra*. 1½. White. May. 1802. Andr. Heath. t. 7.
- *spica'ta*. 1½. White. September. 1802.
- *Caledo'nica*. Rose. June. 1816.
- *calostoma*.
- *calycina*. ½. Light flesh-colour. Autumn. Andr. Heath. t. 8.
- *campanulata*. 1. Yellow. June. 1791. Andr. Heath. t. 55.
- *campylophylla*. Lilac. April. 1802.
- *canaliculata*. 2. Pale purple. Spring. Andr. Heath. t. 156.
- *mi'nor*. 2. Pale purple. Spring. Andr. Heath. t. 157.
- *canescens*. 1½. Pink. June. 1790.
- *cantharoxfolius*. White. May. B. C. t. 1961.
- *carinata*. 1½. Purple. September. 1820. B. C. t. 1071.
- *carniola*. Pink. July. 1810. B. C. t. 926.
- *Cavendishia'na*. Yellow. May to July. Paxt. Mag. xiii. p. 3.
- *Celsia'na*. 1. Orange, rose. May. 1810. B. C. t. 1777.
- *cerinthoides*. Dark scarlet. September. 1774. B. M. t. 220.
- *major*. 4. Scarlet. May. 1800.
- *na'na*. 1. Scarlet. May. 1800.
- *cernua*. 1. Pink. Late autumn. Andr. Heath. t. 9.
- *Chamisso'nis*. 1½. Rose-pink. S. Africa. 1874.
- *chloroloma*. Crimson, green. November. 1838. B. R. 1838, t. 17.
- *ciliaris*. Purple. July to September. Spain and Portugal. 1773. B. M. t. 484.
- *cinerascens*. 1. Purple. May. 1810.
- *Cliffordia'na*. 1. White. April. 1812. B. C. t. 34.
- *coccinea*. 1½. Scarlet. 1783. Andr. Heath. t. 57.
- *codonoides*. 10-12. Pale pink. February to May. B. R. t. 1698.
- *colorans*. 2. White, red. May. 1817. B. R. t. 1698.
- *comosa*. ¾. Red. June. 1787. Andr. Heath. t. 10.
- *alba*. ¾. White. June. 1787.
- *rubra*. ¾. Red. June. 1787. Andr. Heath. t. 11.
- *Comptonia'na*. 2. Purple. June. 1802. Andr. Heath. t. 255.
- *conca'va*. 1. Pale pink. Spring. 1808. B. C. t. 134.
- *concinna*. 2½. Flesh-colour. September. 1773. Andr. Heath. t. 58.
- *concolor*. 2. June. 1820.
- *conferta*. 2. White. Winter. Andr. Heath. t. 59.
- *congesta*. White. June. B. C. t. 1743.
- *conica*. 2. Purple. June. 1820. B. C. t. 1179.
- *conspicua*. 2. Dark yellow. July. 1774. Andr. Heath. t. 12.
- *Coventrya'na*. 1. Pink. May. 1801. Andr. Heath. t. 210.
- *crassifolia*. Lilac. May. 1827. Andr. Heath. t. 257.
- *crinita*. Red. Spring and Summer. B. C. t. 1432.
- *crue'nta*. Red. Late Summer. 1774. B. C. t. 1656.
- *cu'bica*. 1. Purple. May. 1790. Andr. Heath. t. 14.
- *major*. 1. Purple. June. 1800.
- *curviflora*. 2. Yellow. August. 1774. Andr. Heath. t. 16.
- *rubra*. 2. Red. August. 1800.
- *Cushinia'na*. 2. September. 1816.
- *cyathifloris*. White. Gfl. t. 43.
- *cydnaria*. 2. Bright-brownish orange. April to July. Andr. Heath. t. 60.
- *daphnestora*. Red. Spring. 1792. B. C. t. 543.
- *daphnoides*. 2. White. May. B. C. t. 154.
- *decipiens*. Flesh-colour. May. 1822.
- *declinata*. Flesh-coloured. Autumn. 1774. B. C. t. 1662.
- *de'cora*. 2. Purple. June. 1790. Andr. Heath. t. 159.
- *de'nsa*. 1½. Red. June. 1810. Andr. Heath. t. 212.
- *denticulata*. 1½. Purple. April. 1821. B. C. t. 1090.
- *depressa*. ¾. Yellow. July. 1782. Andr. Heath. t. 17.
- *dichroma'ta*. 3. Yellow, pink. August. 1800. B. C. t. 1813.
- *Dicksa'ni*. 2. Yellow. June. 1809. B. C. t. 1793.
- *alba*. 2. White. June. 1809.
- *rubra*. 2. Red. May. 1809.
- *diosmaeflora*. 2. May. 1792.
- *discolor*. Flesh-colour, yellow. November to April. Andr. Heath. t. 160.
- *distans*. Violet. November. 1822.
- *droseroides*. Purple. August. 1788. Andr. Heath. t. 18.
- *dumosa*. 1. Purple. May. 1812. Andr. Heath. t. 213.
- *echiflora*. 1½. Scarlet. April. 1798. Andr. Heath. t. 161.
- *coccinea*. 1. Scarlet. April. 1812.
- *elata*. 6. Orange. Autumn. Andr. Heath. t. 112.
- *e'legans*. ¾. Green. August. 1799. Andr. Heath. t. 111.
- *elegantissima*. Pink, white. Garden hybrid.
- *elongata*. White. November. 1810. B. C. t. 738.
- *empetrifolia*. Pink. May. 1774. B. M. t. 447.
- *empetroides*. Pale pink. June. 1796. B. C. t. 1758.
- *epistemia*. 2. Yellow, green. May. 1810. B. C. t. 1186.
- *eriocephala*. White. July. 1816. Andr. Heath. t. 61.
- *erosa*. White, pink. April. B. C. t. 133.
- *erubescens*. 1½. Flesh-colour. May. 1810. Andr. Heath. t. 113.
- *Ewera'na*. 2. Pink. August. 1793. B. C. t. 1303.
- *longiflora*. 2. Red. June. 1792.
- *pliosa*. 2-3. Pink, green. July. 1800. B. C. t. 1092.
- *speciosa*. 2. Red. August. 1782.
- *eximia*. 2. Scarlet. June. 1800. B. C. t. 1105.
- *expansa*. 1. Scarlet. July. 1818.
- *exposita*. Red. August. 1820. B. C. t. 1521.
- *exurgens*. 1½. Dark orange. 1723. Andr. Heath. t. 20.
- *carnea*. 1. Orange. 1800.

- E. ezsu'rgens grandifl'ora*. 1. Orange. 100.
 ——— *ma'jor*. 1. Orange. 1800.
 ——— *pa'lida*. 1. Pale red. 1810.
ezu'dens. B. C. t. 287.
 ——— *fascicula'ris*. 1½. Purple. April. 1787.
 ——— *fastigia'ta*. 1½. White. July. 1797. Andr.
 Heath. t. 62.
 ——— *ferrug'nea*. 1. Red. May. 1793. Andr.
 Heath. t. 162.
 ——— *filament'osa*. 1½. Purple. November. Andr.
 Heath. t. 22.
 ——— *fimbria'ta*. ¾. Spring. Reddish-purple.
 Andr. Heath. t. 63.
 ——— *flagella'ta*. 1½. Deep flesh-colour. Summer.
 Andr. Heath. t. 262.
 ——— *fla'mmea*. 1½. Light yellow. June. 1798.
 Andr. Heath. t. 23.
 ——— *fla'va*. 2. Yellow. July. 1795. Andr. Heath.
 t. 64.
 ——— *umbri'ca'ta*. 2. Yellow. July. 1795.
 B. M. t. 1815.
 ——— *flezu'osa*. 1. White. April to July. Andr.
 Heath. t. 65.
 ——— *floribu'nda*. 1. Pale pink. May. 1800. B. C.
 t. 176.
 ——— *flori'da*. 1. Red. June. 1803. B. C. t.
 234.
 ——— *campanula'ta*. B. M. t. 3639.
 ——— *moscha'ta*. 1. Red. May.
 ——— *folia'cea*. Yellow. Autumn. Andr. Heath.
 t. 263.
 ——— *form'osa*. 2. Red. August. 1795. Andr.
 Heath. t. 114.
 ——— *a'lba*. 2. White. August. 1795.
 ——— *fra'grans*. ¾. Purple. April. 1803. Andr.
 Heath. t. 163.
 ——— *ful'gida*. Red. June. B. C. t. 1633.
 ——— *ge'lida*. 3. Green, white. June. 1799. Andr.
 Heath. t. 24.
 ——— *a'lbens*. 2. White. June. 1820.
 ——— *gemmi'fera*. Orange. August. 1820. B. C.
 t. 457.
 ——— *globo'sa*. 1½. Pink. August. 1789. Andr.
 Heath. t. 116.
 ——— *glomifl'ora*. White. June.
 ——— *gra'cilis*. 1. Purple, red. March. 1794.
 Andr. Heath. t. 68.
 ——— *grandifl'ora*. 3. Yellow. July. 1785. B. M.
 t. 189.
 ——— *hu'milis*. 2. Yellow. May. 1806.
 ——— *grandino'sa*. ¾. White. March. 1810. Andr.
 Heath. t. 265.
 ——— *halicaca'ba*. 1. Yellow. June. 1780. Andr.
 Heath. t. 164.
 ——— *Hartne'lli*. 2. Purple. July. 1820.
 ——— *herba'cea*. Pink. March. Mountains of Ger-
 many. B. M. t. 11.
 ——— *Hibbertia'na*. 2. Orange, yellow. July. 1800.
 Andr. Heath. t. 118.
 ——— *hirsu'ta*. Red, white. Spring. 1800. B. C.
 t. 754.
 ——— *h'irta*. 2. Red, purplish-green. January to
 April. Andr. Heath. t. 165.
 ——— *viridifl'ora*. 1½. Green. Winter. Andr.
 Heath. t. 166.
 ——— *hirtifl'ora*. Red. Autumn to spring. B. M.
 t. 431.
 ——— *hi'spida*. 1. Flesh-colour. August. Andr.
 Heath. t. 69.
 ——— *hispi'dula*. Purple. July. 1790.
 ——— *Humea'na*. 1½. Pink. March. 1808. B. C.
 t. 389.
 ——— *igne'scens*. 1½. Red. May. 1792. Andr.
 Heath. t. 27.
 ——— *imbrica'ta*. ¾. Flesh-colour. July. Andr.
 Heath. t. 119.
 ——— *imperialis*. 2. Scarlet. June. 1802. Andr.
 Heath. t. 266.
 ——— *inca'na*. 1½. White. July. 1810.
 ——— *ru'bra*. 1½. Red. July. 1810.
 ——— *incarna'ta*. Pink. 1793. Andr. Heath.
 t. 168.
- E. incu'ra*. Pink. March. Andr. Heath. t. 169.
 ——— *infa'ta*. 1½. White, red. July. 1809.
 ——— *infundibulifl'ormis*. 2. Pale red. Septem-
 ber. 1802. Andr. Heath. t. 218.
 ——— *interte'ata*. White. Early summer. 1810.
 B. C. t. 1034.
 ——— *Irbya'na*. 1½. White, green. August. 1800.
 Andr. Heath. t. 219.
 ——— *jasmifl'ora*. 2. White, pink. August. 1794.
 Andr. Heath. t. 26.
 ——— *a'lba*. 2. White. August.
 ——— *juba'ta*. 2. August. 1800.
 ——— *Julia'na*. 3. Red. July. 1800. B. C. t.
 799.
 ——— *lachna'ea*. 1. White. May to July. Andr.
 Heath. t. 120.
 ——— *purpu'rea*. 1. Pink. July. Andr. Heath.
 t. 170.
 ——— *lachnaefolia*. 1½. White. June. 1793.
 ——— *lactifl'ora*. White. March. B. C. t. 991.
 ——— *la'vis*. 1. White. March to July. Andr.
 Heath. t. 221.
 ——— *Lambertia'na*. 1. White. June. 1800. Andr.
 Heath. t. 171.
 ——— *lana'ta*. 1½. White. July to December.
 Andr. Heath. t. 121.
 ——— *lanugin'osa*. 1. Dingy yellowish-white and
 purplish-brown. Winter. Andr. Heath.
 t. 122.
 ——— *larici'na*. Pink. July. 1824.
 ——— *lateralis*. 1. Purple. August to December.
 Andr. Heath. t. 71.
 ——— *latifl'ora*. 1. Bright red. May to August.
 Andr. Heath. t. 72.
 ——— *Lauson'ni*. 3. Flesh. May. 1802. B. M.
 t. 1790. Syn., *E. leptocarpa*.
 ——— *la'za*. Rose. September to February. Andr.
 Heath. t. 73.
 ——— *Leed'na*. 2½. Orange, yellow. April. 1788.
 Andr. Heath. t. 74.
 ——— *leptocarpa*. See *E. Lausoni*.
 ——— *leuca'nthera*. 1. White. January to March.
 Andr. Heath. t. 28.
 ——— *Linnæa'na*. 1½. Purple, white. March.
 1790. Andr. Heath. t. 75.
 ——— *Linnæodes*. 1½. Purple, red. April. 1812.
 Andr. Heath. t. 123.
 ——— *longifl'ora*. 2. Red, orange. May. 1812.
 Andr. Heath. t. 222.
 ——— *longifl'ora ca'rnea*. Flesh-colour. May. B. M.
 t. 706.
 ——— *longipedunculata*. 1. Pink. July. 1805.
 ——— *lu'cida*. 2. Pale flesh-colour. April to June.
 Andr. Heath. t. 172.
 ——— *lu'tea*. ¾. Pale-yellow. March. 1774.
 ——— *magnifl'ca*. Purple. August. Andr. Heath.
 t. 223.
 ——— *mammo'sa*. 2. Purple. August. 1762.
 ——— *mi'nor*. 1. Purple. August. 1800.
 ——— *margarita'cea*. 1½. White. June to Septem-
 ber. Andr. Heath. t. 126.
 ——— *marifl'ia*. 1. White. April to July. Andr.
 Heath. t. 127.
 ——— *Masso'ni*. 3. Red, green. August. 1787.
 ——— *mi'nor*. 1. Red, green. August.
 ——— *melanthera*. 3. Pale pink. Spring. 1802.
 B. C. t. 867.
 ——— *melastoma*. 2. Red, brown. June. 1785.
 ——— *metulæfl'ora*. 1. Red. April. 1798.
 ——— *di'scolor*. 1. Rose, white. August to
 October. Andr. Heath. t. 269.
 ——— *minutifl'ora*. Purple. June. 1822.
 ——— *mirabilis*. 1. Purple. May. 1800.
 ——— *molle'ris*. Purple. June. 1803.
 ——— *mo'lis*. 1. Red. Andr. Heath. t. 272.
 ——— *Monsou'na*. 4. White. July. 1787.
 ——— *Moorea'na*. Pink, white. Garden hybrid.
 Lem. Jard. Fl. t. 259.
 ——— *moscha'ta*. 1½. Green. June. 1805.
 ——— *muc'osa*. 3. Brilliant purple. June to Sep-
 tember. Andr. Heath. t. 174.
 ——— *mucosodes*. Lilac. May. 1800.

- E. mucronata*. 1½. Flesh-colour. May to August. Andr. Heath. t. 225.
- *multiflora*. Flesh-colour. Winter. Andr. Heath. t. 175.
- *mundula*. 2. Purple. June. 1810.
- *major*. 2. Purple. June. 1810.
- *Murayana*. Scarlet. Garden hybrid. Paxt. Mag. xi. p. 77.
- *Muscari*. 1½. Pale yellow. March to July. Andr. Heath. t. 130.
- *multibilis*. Deep purple, becoming paler. February to October. Andr. Heath. t. 176.
- *Neillii*. Pink, white. Garden hybrid. Paxt. Mag. ix. p. 185.
- *nidularia*. 1-2. White, pale pink. 1809. B. C. t. 764.
- *nigrita*. 1. White. April to July. Andr. Heath. t. 31.
- *nitida*. 1½. White. July to October. Andr. Heath. t. 131.
- *nivalis*. White. June. 1820.
- *nivea*. 2. White. April. 1816.
- *niveniana*. Purple. February to June. Andr. Heath. 76.
- *longiflora*. Purple. March to June. Andr. Heath. t. 227.
- *oblata*. Red, white. June. 1796.
- *umbellata*. 1. White. May to August. Andr. Heath. t. 132.
- *obliqua*. 1½. Purple. August. 1800.
- *oblonga*. Red. July.
- *obtusata*. 1. Purple. September. 1789.
- *odorata*. 1. Pink. June. 1829.
- *ollula*. 1. Red. May to August. Andr. Heath. t. 275.
- *oppositifolia*. 1. White. April to July. Andr. Heath. t. 178.
- *major*. 1. White. March. Andr. Heath. t. 179.
- *rubra*. 1. Red. May to August. Andr. Heath. t. 180.
- *orbata*. White. 1810.
- *orbicularis*. B. C. t. 153. See *Bleria ericoides*.
- *ostriata*. Red. Spring. B. C. t. 1218.
- *ovalifolia*. White, pink. North India. 1842.
- *ovata*. 1. Purple. June. 1811.
- *paellens*. 1. Yellow. April to July. Andr. Heath. t. 182.
- *paullida*. Flesh-colour, white. May to October. Andr. Heath. t. 77.
- *palustris*. 1. Flesh-coloured. July. 1799.
- *paniculata*. Pink. Late summer. 1774. B. C. t. 1194.
- *Parmenaria*. 1. Pale purple. July. 1810.
- *patens*. 2. Purple. February to June. Andr. Heath. t. 133.
- *Patersoniana*. 2½. Yellow. May. 1791.
- *major*. 3. Yellow. May.
- *patersonioides*. 2. Orange, red. June. 1800.
- *pedunculata*. 1. Pale purple. March to June. Andr. Heath. t. 229.
- *pellucida*. 2. White. September. 1800.
- *rubra*. 1½. Red. August. Andr. Heath. t. 277.
- *pella*. Green, purple. July. 1804.
- *pelviformis carneae*. Flesh-colour. Gf. t. 43.
- *peñdula*. Pale pink. June. 1791. B. C. t. 902.
- *penicillata*. 2. Greenish-yellow. May to August. Andr. Heath. t. 135.
- *persoluta*. 1½. Purple. April. 1774.
- *alba*. 1. White. March. 1800.
- *perseptua*. 2. White, purple. May. 1790.
- *nanana*. 1. Pink. April. 1800.
- *petiola*. White. May to July. Andr. Heath. t. 136.
- *Petivieri*. 2. Yellow. May. 1774.
- *coctinea*. 2. Scarlet. May.
- *Pezi*. 1. White. June. 1812.
- E. physodes*. 1½. White. May. 1788.
- *pilosae*. White. June. 1800. B. C. t. 606.
- *pilularis*. White. November. 1820.
- *pilulifera*. 1. White. May to July. Andr. Heath. t. 278.
- *pitnea*. 2. Red. October. 1790.
- *discolor*. 2. Red. October.
- *favosides*. 2. Red. October.
- *pulchella*. 2. Red. October.
- *purpurea*. Pink. April. B. C. t. 1259.
- *pinifolia*. 1½. White. February to July. Andr. Heath. t. 184.
- *coctinea*. Scarlet. May. Andr. Heath. t. 137.
- *discolor*. Pink, white. May to July. Andr. Heath. t. 138.
- *planifolia*. 1½. Purple. August. Andr. Heath. t. 185.
- *Plukenetii*. 1. Red. May. 1774.
- *albens*. Whitish. 1½. May to September. Andr. Heath. t. 187.
- *nanana*. 1. Reddish-purple. June to November. Andr. Heath. t. 139.
- *paullida*. 1. Pale red. June. 1794.
- *plumosae*. 1. Purple. March to July. Andr. Heath. t. 36.
- *Pohlmanni*. Pale pink. May. 1816. B. C. t. 1852.
- *praecox*. 1. Pink. Spring. 1800. B. C. t. 1413.
- *praegans*. 2. Red. August. 1796.
- *praestans*. 1. White. August. 1810.
- *primuloides*. 1. Purple, red. May. 1802.
- *princeps*. 1½. Scarlet. June. 1800.
- *carnea*. 1. Flesh-coloured. June. 1804.
- *procumbens*. Pink. Summer. B. C. t. 1993.
- *propendens*. 1½. Purple. July. 1800.
- *psuedo-vestita*.
- *pubescens*. 1½. Purple. August to February. Andr. Heath. t. 37.
- *minor*. 1½. Purple. October to March. Andr. Heath. t. 88.
- *pulchella*. 1½. Red. July. 1792.
- *pulverulenta*. 1. Purple. July. 1820.
- *purpura*. 1. Purple. June. 1812.
- *purra*. White. Autumn. B. C. t. 72.
- *purpurea*. 2. Light purple. 1789.
- *pygmaea*. Deep purple. July to October. Andr. Heath. t. 279.
- *pyramidalis*. 1½. Pink. March. 1787.
- *pyriformis*.
- *quadrangulata*. 1½. White, flesh-colour. April to June. Andr. Heath. t. 280.
- *quadra*. White. May. 1829. B. C. t. 1943.
- *quadrifolia*. 1½. Purple. June to August. Andr. Heath. t. 41.
- *racemifera*. 1. Purple. April to June. Andr. Heath. t. 188.
- *racemosa*. 1½. Pink. April. 1795.
- *radicata*. 1. Crimson. September. 1798.
- *discolor*. 2. Rose, white. Autumn. Andr. Heath. t. 281.
- *ramentaeca*. 1½. Dark red. September. 1786.
- *recurvata*. 1. Whitish. March to June. Andr. Heath. t. 282.
- *reflexa*. 1. Flesh-colour. July to October. Andr. Heath. t. 283.
- *refulgens*. 2. Scarlet. May. 1800.
- *regerrimans*. 1½. Red. June. 1701.
- *resinosa*. Yellow, green. May to August. B. M. t. 1139.
- *retorta*. 1. Pink, white. June. 1787.
- *rigida*. Pink, white. July. B. C. t. 1286.
- *Rollinsii*. 2. Purple. June. 1820.
- *rosea*. 1. Red. July. 1810.
- *rubeilla*. 2. Pink. June. 1814.
- *rubens*. 1. Dark red. July. 1810.
- *rubida*. Corolla white; calyx deep red. Summer. B. C. t. 1166.
- *rubrocalyx*. 1. White, changing to rose.

- Spring and summer Andr. Heath. t. 285.
- E. rubrose-pala.* Red, white. June. 1825.
- *rugosa.* 2. Deep red. June to August. Andr. Heath. t. 236.
- *rupe-stris.* White. July to November. Andr. Heath. t. 145.
- — *ru'bra.* 1½. Red. February to November. Andr. Heath. t. 237.
- *Russellia'na.* 1½. Pink. May. 1820.
- *Sainsburya'na.* 2. Purple. July. 1800.
- *Salisburya'na.* Rose. June. 1815.
- *sanguinea.* 1. Crimson. 1815.
- *sanguinole'na.* ¾. Deepblood-red. Summer. B. M. t. 2263.
- *Savileana.* ¾. Red. June. 1800.
- *scabriuscula.* 1. White. May. 1805.
- *scariosa.* Pale pink. Summer. 1812. B. C. t. 477.
- *Scho'llii.* Purple. 1799. B. C. t. 538.
- *Seba'na.* 2. Orange. April. 1774.
- — *aurantia.* 1. Orange. July. Andr. Heath. t. 83.
- — *fulca.* 2. Brown. May. 1812.
- — *luttea.* 2. Yellow. May. 1800.
- — *minor.* 1. Orange. May. 1810.
- — *na'na.* 1. Purple. April. Andr. Heath. t. 189.
- — *spica'ta.* 2. Deep scarlet. September. Andr. Heath. t. 190.
- — *viridis.* 1. Pale green. March to May. Andr. Heath. t. 85.
- *serpyllifolia.* 1. Pale flesh-colour. July to November. Andr. Heath. t. 285.
- *serratifolia.* 1½. Orange-yellow. August to December. Andr. Heath. t. 44.
- *sessiflora.* 2. Pale green. August to October. Andr. Heath. t. 86.
- *setacea.* Whitish. February to April. Andr. Heath. t. 87.
- *sexfaria.* 1. White. March to July. Andr. Heath. t. 88.
- *Shannonia'na.* 1½. White, purple. June. 1816.
- — *scilla.* See *Pentaptera sicula.*
- *Smithia'na.* 2. Purple. April. 1791.
- *Solandra'na.* 2. Pink. June. 1800.
- *solandroides.* 1½. Whitish. April to July. Andr. Heath. t. 290.
- *sordida.* Deep orange. July to January. Andr. Heath. t. 191.
- *sparsa.* Pink. 1800. B. C. t. 1467.
- *speciosa.* 2. Red, green. July. 1800.
- *spica'ta.* 1. Pale yellow, green. November to April. Andr. Heath. t. 45.
- *splen'dens.* 2. Scarlet. July. 1792.
- *Sprengelii.* 2. Yellow, purple. June. 1806.
- *spumosa.* ¾. Red. May. 1786. B. C. t. 566.
- *spuria.* 2. Purple. June. 1796.
- *squamæfolia.* 2. April. 1796.
- *squamosa.* 1½. Purple. April to July. Andr. Heath. t. 91.
- *staminea.* 2. Red, green. June to September. Andr. Heath. t. 193.
- *stellata.* White. 1806. B. C. t. 893.
- *stellifera.* 1. Flesh-colour, white. May to August. Andr. Heath. t. 291.
- *stricta.* 2. Purple. September. South Europe. 1795.
- *suaveolens.* 1½. Pale purple. May to July. Andr. Heath. t. 292.
- *sulphurea.* 2. Yellow. June. 1805.
- *Swainsonii.* 2. Red, purple. August. 1794.
- *taxifolia.* Pink.
- — *major.* 1½. Flesh-colour. July to December. Andr. Heath. t. 243.
- — *Templeana.* 2. Red, purple. July. 1820.
- — *tene'lla.* ¾. Purple. June. 1791.
- *tenuiflora.* 1. Yellow. April to June. Andr. Heath. t. 146.
- — *alba.* 2. White. July to December. Andr. Heath. t. 194.
- E. tenuiflora car'nea.* 1. Flesh-colour. Summer. Andr. Heath. t. 294.
- *teretiuscula.* 2. Reddish-purple, green. February to April.
- *thalictriflora.* White. 1800. B. C. t. 1294.
- *Thomsonii.* Pink, white. Garden hybrid. Lem. Jard. Fl. t. 259, fig. 1.
- *Thunbergia'na.* 1½. Orange. June. 1794.
- *thymifolia.* ¾. Purple. July. 1789.
- *tiaræfolia.* 1½. Flesh-colour. May to July. Andr. Heath. t. 196.
- *toga'ta.* ¾. Red. June.
- *tomentosa.* 2. Purple. June. 1778.
- *tortuosa.* 2. May. 1816.
- *translucens.* 2. Red. June. 1797.
- *transpa'rens.* 1½. White. May. 1800.
- — *blan'da.* Carmine. February. 1843.
- *triceps.* White. Autumn. 1800. B. C. t. 962.
- *tricolor.* 2. Red, green. June. 1810.
- — *major.* 2. Red, green. June. 1810.
- — *minor.* 1. Red, green. June. 1810.
- *triflora.* 1½. White. April. 1774.
- *triumphans.* 2. White. April. 1802.
- *tro'ssula.* 1½. White, pink. April. 1800.
- — *ru'bra.* 1. Red. April. 1810.
- *tubercularis.* See *Bremia tubercularis.*
- *tubiflora.* 2. Pink. May. 1775.
- *tubiuscula.* Pink. Autumn and winter. B. C. t. 1157.
- *tu'mida.* 1½. Scarlet. July. 1812.
- *turbinata.* Flesh-colour. May to July. Andr. Heath. t. 297.
- *tu'rgida.* 1. Purple. May. 1821.
- *U'ria.* 2. Blood-red, green. August. Andr. Heath. t. 149.
- — *pliosa.* 2. Reddish-purple, green. August. Andr. Heath. t. 150.
- *umbellata.* Pale purple. April to July. Portugal. Andr. Heath. t. 99.
- *undulata.* Red. May to July. Andr. Heath. t. 300.
- *urceolaris.* White. Summer. 1778. B. C. t. 1894.
- *varia.* 1. Purple, yellow. July. 1810.
- *ventricosa.* 1. Flesh-coloured. June. 1787.
- — *alba.* 1. White. June.
- — *car'nea.* 1. Flesh-coloured. June.
- — *coccinea.* 1. Scarlet. June.
- — *erecta.* 1. Flesh-coloured. June.
- — *hirsuta.* 1. Flesh-coloured. June.
- — *na'na.* ¾. Flesh-coloured. June.
- — *superba.* 1. Scarlet. June.
- *verecunda.* Pink. Summer. 1820. B. C. t. 1827.
- *vernalis.* 3. Pink. March. 1827.
- *vernix.* 1. Gold, green. January to May. B. C. t. 250.
- — *ru'bra.* 1. Fiery red. Spring and Autumn. Andr. Heath. t. 298.
- — *longiflora.* 1. Gold, tinged with red, edged with deep green. April to July. Andr. Heath. t. 248.
- *versicolor.* 2. Orange, red. August. 1720.
- — *longiflora.* 8. Flesh-colour, green. October to July. Andr. Heath. t. 249.
- — *major.* 2. Scarlet. September. 1800.
- *verticillata.* 3. Scarlet. August. 1774.
- — *major.* 2. Scarlet. September. 1800.
- *vestita.* 3. White. 1789.
- *alba.* 2. White. 1789.
- *blan'da.* 2½. Pink. May. 1827.
- *car'nea.* 2. Flesh-colour. July to October. Andr. Heath. t. 246.
- — *coccinea.* 3. Scarlet. 1789.
- — *elegans.* 2. Purple. 1810.
- — *fulgida.* 3. Orange. 1789.
- — *incarnata.* 2. Pink. 1789.
- — *luttea.* 3. Yellow. 1789.
- — *mutabilis.* 3. Scarlet, white. 1800.
- — *purpurea.* 2. Purple. June. 1789.
- — *rosea.* 3. Light red. August. 1789.

- E. villosa*. White. February to June. Andr. Heath. t. 200.
 — *villosiuscula*. Pale pink. May. B. C. t. 1844.
 — *viridescens*. Yellowish-green. Spring. 1804. B. C. t. 233.
 — *viridiflora*. 2. Orange. July. 1810.
 — *viridis*. 2½. Dark green. July. 1800.
 — *viscaria*. 2. Purple. April to July. Andr. Heath. t. 49.
 — *Walkeriana*. Red. July. 1806.
 — *rubra*. 1. Deep flesh-colour. February to June. Andr. Heath. t. 100.
 — *Willmorei*. Bright, but pale red. Garden hybrid. Kn. and West. t. 73.
 — *Zeyheri*. Lilac. June. 1824.

Ericinella. (Diminutive of *Erica*.
 Nat. ord., *Ericaceæ*; Tribe, *Ericaceæ*.)

Greenhouse shrub. For cultivation, see HEATHS.

- E. Ma'nvi*. Crimson. July. Cameroon Mountains. 1886. B. M. t. 5569.

Erigeron. (From *er*, the spring, and *geron*, old man; some being hoary with a downy covering early in the season. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*. Allied to *Conyza*.)

Showy hardy herbaceous plants. Seeds and divisions; garden-soil.

HARDY ANNUALS.

- E. bonariensis*. 1½. Purple. July. S. Amer. 1732.
 — *canadensis*. 1. White. August. England. Eng. Bot. ed. 3, t. 773.
 — *chinensis*. 1. White. August. China. 1818. Jacq. H. Schenb. t. 303.

HARDY BIENNIALS.

- E. acris*. 1½. Blue. July. Britain. Eng. Bot. ed. 3, t. 774.
 — *asteroides*. 1. Purple. July. Podolia. 1821. Syn., *E. podolicus*.
 — *divaricata*. 1. White. August. Mississippi. 1818.
 — *lævigata*. 1. White. July. Cayenne. 1822.
 — *podolicus*. See *E. acris*, var. *asteroides*.

HARDY PERENNIALS.

- E. alpinus*. 1. Purple. July. Scotland. Eng. Bot. ed. 3, t. 775.
 — *rupestris*. ¾. Purple. July. Switzerland. 1819. Syn., *E. rupestris*.
 — *armeriaefolius*. Purple. July. Barcelona. 1829.
 — *asper*. Purple. August. N. Amer. 1828.
 — *atticus*. See *E. Villarsii*.
 — *aurantiacus*. 1. Orange. Turkestan. 1879.
 — *bellidifolius*. 1½. Purple. July. N. Amer. 1790. B. M. t. 2402.
 — *Blu'mei*. See *E. Villarsii*.
 — *carolinianus*. 1. Purple. July. N. Amer. 1727.
 — *caucasicus*. ¾. Purple. July. Caucasus. 1821.
 — *compositus*. ½. White, red. July. N. Amer. 1811.
 — *glabellus*. 1. Purple. Missouri. 1823. B. M. t. 2923.
 — *glauucus*. ¾. Purple. November. S. America? 1810. B. R. t. 10.
 — *grandiflorus*. ¾. Purple. July. Switzerland. 1819.
 — *humilis*. ¾. Flesh. August. N. Amer. 1828.
 — *hypsophifolius*. 2. Pale purple. September. N. Amer. Syn., *Aster graminifolius*.
 — *Lehmanni*. Lilac. August. Egypt. 1828.
 — *ma'zimus*. Purple. July. Mexico. 1830. Half-hardy. Syn., *Leptostelma maxima*. Swt. Fl. Gard. ser. 2, t. 38.

- E. mucronatus*. ½-1. Purplish. Australia. Syn., *Vittadenia triloba*.
 — *multiradiatus*. ½-2. Purple, yellow. Jnne. Himalaya. 1880. B. M. t. 6530. Syn., *Aster nuloides*.
 — *philadelphicus*. 1. Purple. July. N. Amer. 1778.
 — *pube'scens*. White. July. Mexico. 1827. Syn., *Heterochaete pubescens*.
 — *pulche'rissus*. Purple. April. Daburia. 1818. Syn., *Aster Atwartensis*, B. M. t. 2321, and *A. pulchellus*.
 — *pusillus*. White. August. N. Amer. 1818.
 — *purpureus*. 1. Purple. August. Hudson's Bay. 1776.
 — *rupe'stris*. See *E. alpinus*, var. *rupe'stris*.
 — *salsuginosus*. 1. Purple, yellow. June. Athabasca. 1829. Syn., *Aster salsuginosus*. B. M. t. 4940.
 — *serotinus*. Purple.
 — *speciosus*. Blue. June. California. 1833. Syn., *Stenactis speciosa*. B. M. t. 3606.
 — *superbus*. Large flowered garden variety. 1889. Garden, xxxvi., p. 377.
 — *Villarsii*. 1. Purple. July. Piedmont. 1804. B. R. t. 583. Syn., *E. atticus*.

EXCLUDED SPECIES.

- E. ægyptiacus*. Jacq. Vind. iii. t. 19. See *Conyza ægyptiaca*.
 — *asteroides* is *Blumea pubiflora*.
 — *chilensis*. See *Conyza chilensis*.
 — *delphinifolius*. See *Polyactidium delphinifolium*.
 — *festidus*. See *Nidorella fetida*.
 — *Gouanii*. Jacq. Vind. t. 165. See *Inula viscosa*.
 — *gramineus* is *Arctogeron gramineum*.
 — *graveolens*. Sibth. Fl. Gr. t. 866. See *Inula graveolens*.
 — *linifolius*. See *Conyza ambigua*.

Erina'cea hispa'nica. See **Anthyllis Erinacea**.

Erino'sma. (From *er*, the spring, and *osme*, to smell; referring to the early flowering of this sweet-scented bulb. Nat. ord., *Amaryllidaceæ*; Tribe, *Amaryllideæ*.) United to **Leucojum**.

- E. vernum*. See *Leucojum vernum*.
 — *carpathicum*. See *Leucojum vernum*, var. *carpathicum*.

Eri'nus. (From *er*, the spring; referring to the early time of flowering. Nat. ord., *Scrophulariaceæ*; Tribe, *Digitalaceæ*. Allied to *Wulfenia*.)

Hardy rock plants. Seeds and divisions. Succeed well on crumbling walls, etc. Sandy loam.

- E. alpinus*. ½. Purple or white. March. Pyrenees. 1739. B. M. t. 310. Syn., *E. hispanicus*.
 — *fragrans*. See *Lyperia fragrans*.
 — *hispanicus*. See *E. alpinus*.
 — *lychnoides*. B. M. t. 2504. See *Zakuziaskia*.
 — *tristis*. See *Lyperia tristis*.

Eriobotrya. Loquat. (From *erion*, wool, and *botrys*, a bunch of grapes; referring to the downy flower-racemes. Nat. ord., *Rosaceæ*; Tribe, *Pomeæ*.) See **Photinia**.

Eriocaulia ma'jor. A synonym of **Actinotus helianthi**.

Eriocaulon. Pipewort. (From

erion, wool, and *caulos*, a stem. Nat. ord., *Eriocauloneæ*.)

The only known European Pipewort is *E. septangula're*, a small bog or marsh-plant in the Isle of Skye. There are other species, but all more curious than beautiful.

E. decangula're. 2½-3. Yellowish. July. United States. B. M. t. 3126.

Eriocéphalus. (From *erion*, wool, and *kephale*, a head; referring to the appendage. Nat. ord., *Compositæ*; Tribe, *Anthemideæ*.)

Greenhouse evergreens, from South Africa. Cuttings of young shoots, getting firm, in April, in sand, under a glass; sandy loam and a little peat.

E. africa'nus. White. Winter. 1731. B. M. t. 833.

— *glabra*. 4. Yellow. April. 1816. Syn., *E. decussatus*.

— *laricinus*. 4. Purple. April. 1816. Syns., *E. laricinus* and *E. purpureus*.

— *racemosus*. 3. Yellow. March. 1739.

Eriochilus. (From *erion*, wool, and *cheilos*, a lip; downy on the labellum, or lip. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Diurideæ*.)

Ground orchids, from Australia. Divisions; peat and loam, both fibry, with a portion of sand and lumps of charcoal.

E. autumnalis. 1. Red. October. 1823. Syn., *Epipactis cucullata*.

— *dilatatus*. May.

— *latifolius*. October.

— *multiflorus*. March.

— *seaber*. September.

Eriochisma. (From *erion*, wool, and *chasma*, a rent; referring to the spore-cases. Nat. ord., *Filices*. Now united with *Nothochlæna*.)

Pretty stove and greenhouse ferns, with brown or brownish-yellow spores. Division, before fresh growth commences; peat and loam. *E. vestita* may be hardy.

GREENHOUSE.

E. distans. ¾. May. N. S. Wales. 1823.

— *hirta*. ¾. May. Cape of Good Hope. 1816.

— *stellata*. May. N. S. Wales. 1840.

— *sulcata*. May. N. S. Wales.

— *vestita*. ¼. August. America. 1812. Hardy.

STOVE.

E. hypoleuca. July. W. Ind.

— *lanuginosa*. ¾. July. Bourbon. 1818.

— *rufo*. August. W. Ind. 1830.

— *tomentosa*. May. N. S. Wales. 1842.

Eriocnema. (From *erion*, wool, and *cneme*, a leg; alluding to the hairy stalks. Nat. ord., *Melastomaceæ*; Tribe, *Microlicieæ*.)

Stove herbaceous plants. For cultivation, see ANGEOTRICHILUS.

E. æneum. ½. Pink. Brazil. 1850.

— *marmoratum*. ¼. Pink. Brazil. 1850. Fl. Ser. t. 750.

Eriocoma. (From *erion*, wool, and *come*, hair; referring to the appendage on the seed of some Composites. Nat. ord., *Compositæ*; Tribe, *Helianthoidæ*.) See **Montanoa**.

Eriode'ndron. (From *erion*, wool, and *dendron*, a tree; referring to the silky wool in the seed-pods. Nat. ord., *Malvaceæ*; Tribe, *Bombaceæ*. Allied to *Bombax*.)

Fine stove evergreen trees; seeds in a hotbed; rich, sandy loam.

E. anfractu'sum. 100. Scarlet. E. Ind. 1739.

B. M. t. 3360. Syn., *Bombax anfractu'sum*.

— *caribæum*. 70. Cream. W. Ind. 1739.

— *guineënsis*. 150. Scarlet. Guinea. 1826.

Syn., *Bombax guineense*.

— *leianthæum*. 70. Scarlet. Brazil. 1818.

Syn., *Bombax pentandrum*.

Eriogonum. (From *erion*, wool, and *gonu*, a joint; downy at the joints of the stems. Nat. ord., *Polygonaceæ*; Tribe, *Eriogoneæ*. Allied to *Polygonum*.)

Hardy herbaceous and woody perennials with yellow flowers, from North America. Seeds and divisions in March and April; loam and a little peat.

E. compo'situm. 1½. June.

— *longifolium*. 2. June. 1822.

— *paniculatum*. 2. June. 1820.

— *sericeum*. 1. July. 1811. Syn., *E. flavum*.

— *tomentosum*. 2. May. 1811.

Eriopa'ppus. See **Layia**.

Eriophorum. Cotton Grass. (From *erion*, wool, and *phorco*, to bear; in reference to the silky tails or coverings of the seeds. Nat. ord., *Cyperaceæ*; Tribe, *Scirpeæ*.)

Pretty, hardy bog loving plants, with silky-cottony flower heads. They are natives of peat marshes, and do not belong to Grasses, though erroneously so called.

E. polystachyon. ¼-1½. May. Britain.

Eriophyllum. (From *erion*, wool, and *phyllon*, leaf; woolly-leaved. Nat. ord., *Compositæ*; Tribe, *Helenoideæ*.) Now referred to **Bahia** under the specific names annexed.

Hardy evergreens, from North America. Divisions of the roots in spring; common soil.

E. cæspitosum. 1. Yellow. May. BAHIA

LANATA.

— *oppositifolium*. 1½. Yellow. BAHIA OPPOSITIFOLIA.

Eriopsis. (From *Eria*, a genus of orchids, and *opsis*, like. Nat. ord., *Orchideæ*; Tribe, *Vandæ-Cyrtopodieæ*.)

Very ornamental greenhouse or stove orchids. Division; fastened to blocks with a little moss.

E. biloba. 1½. Orange. September. 1845.

B. M. t. 4437.

— *rutidobolbon*. 2. Orange, purple. August. New Grenada. 1846.

— *Sprucei*. Lemon-colour, red. Brazil. 1854.

Eriosema. (From *erion*, wool, and *sema*, a standard; referring to the top petal, or standard, as in a pea-flower. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Rhynchosia*.)

Stove evergreen shrubs. Seeds in March; cuttings in April, in sand, under a glass, and in heat; peat and loam.

E. grandiflorum. 2. Yellow. August. Mexico.
— *violaceum*. 4. Purple. March. Guiana.
1820.

Eriospérmum. (From *erion*, wool, and *spermos*, a seed; woolly-seeded. Nat. ord., *Liliaceæ*; Tribe, *Asphodeleæ*. Allied to *Anthericum*.)

Greenhouse bulbs from South Africa. Offsets; sandy peat.

E. albucoides. ½. Yellow, green. S. Africa. 1875.

— *Bellende'ni*. 1. Light blue. July. 1806.

— *bre'vipes*. 1½. White, green. July. Algoa Bay. 1862.

— *calcarat'um*. ½. White, green. S. Africa. 1875.

— *foliolif'erum*. ¾. Yellow, green. July. 1806. Andr. Rep. t. 521.

— *lancofol'ium*. 1. Light blue. July. 1795. Jacq. Ic. t. 421.

— *lanuginosum*. 1. White, green. July. 1820. Jacq. H. Schenb. t. 264.

— *latifol'ium*. 1. Light blue. July. 1800. B. M. t. 1382.

— *Macke'ni*. Yellow. July. Natal. 1871. Syn., *Bulbine Mackenii*, B. M. t. 5955.

— *parado'sum*. 1. July. 1825.

— *parvifol'ium*. ¾. Dark blue. July. 1796. Jacq. Ic. t. 422.

— *protif'erum*. ¾. White, green. Summer. 1821.

— *pubescens*. 1. White, green. July. 1820. B. R. t. 578.

Erioste'mon. (From *erion*, wool, and *stemon*, a stamen; appearance of stamens. Nat. ord., *Eutaceæ*; Tribe, *Boroniaceæ*. 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, fibry loam.

E. buxifol'ius. 2. Pink. May. 1824. B. M. t. 4101.

— *cuspidat'us*. See *E. myoporoides*.

— *ericifol'ius*. 3. Red. June. 1824.

— *glaucescens*. Lilac. April. 1824.

— *gracilis*. 1. Lilac. June. 1831.

— *interme'dius*. B. M. t. 4439. See *E. myoporoides*, var. *minor*.

— *lancofol'ius*. 3. Red. June. 1823.

— *latifol'ius*. 3. White. 1845.

— *linearifol'ius*. 3. Red. June. 1823.

— *myoporoides*. 1½. White. September. 1824. B. M. t. 3180. Syns., *E. cuspidatus*, and *E. neritifol'ius*.

— — *minor*. Rose. April. Syn. *E. interme'dius*.

— *neritifol'ius*. See *E. myoporoides*.

— *nodiflor'us*. Blush. 1841.

— *oblongifol'ius*. White. April. 1825.

— *obovatis flo're ple'no*. 2-3. G. C. 1888, iii. p. 85.

— *pulche'rus*. 3. A garden hybrid.

— *salicifol'ius*. B. M. t. 2854. See *Philothea australis*.

— *sca'ber*. 1½. Pink. April. 1840. Paxt. Mag. xiii. p. 127.

Eriothrix. (From *erion*, wool, and *thrix*, hair; referring to the appendages on the seeds. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*. Allied to *Neuro-læna*.)

For culture, see BACCHARIS.

E. lycopodioides. White. July. Bourbon. 1828. Syn., *Baccharis lycopodioides*.

Eri'sma. (From *erisma*, strife; referring to the difficulty of assigning their position in the natural arrangement. Nat. ord., *Voohysiaceæ*.)

Stove evergreen tree. Cuttings of young shoots getting firm, in April, in sand, under a glass, and in bottom-heat; sandy loam and peat.

E. florib'nda. 40. Blue. October. Guiana. 1825.

Eritha'lis. (From *erithallo*, to grow green; referring to the glossy, deep green of the leaves. Nat. ord., *Rubiaceæ*; Tribe, *Chiococceæ*. Allied to *Gnettarda*.)

Stove evergreen shrubs or trees. Cuttings of young stubby side-shoots in spring or summer, in sand, under a bell-glass, and in bottom-heat; sandy, fibry loam, and a little peat.

E. fructicos'a. 13. White. July. Jamaica. 1793.

— *T'imon*. See *Timonius Rumphii*.

Eritri'chium. (From *erion*, wool, and *thrix*, a hair; alluding to the woolly hairs of some of the species. Nat. ord., *Boraginææ*; Tribe, *Borageæ*. Allied to *Cynoglossum*.)

Hardy perennial or annual herbs. Seeds, or divisions of the plants in spring. Garden-soil. *E. na'num* is very difficult to establish.

E. barbif'erum. White. California. Rev. Hort. 1855, p. 557. Annual.

— *na'num*. One-twelfth. Blue, with yellow eye. Alps. 1869. B. M. t. 5853.

— *rupe'stre*. 1. Blue. July. Galicia. 1824.

— — Syn., *Achusa rupestris*.

— *stri'ctum*. 1. Blue. July. Himalayas. Annual.

Erno'dea. (From *ernodes*, branched. Nat. ord., *Rubiaceæ*; Tribe, *Spermato-cocceæ*. Allied to *Spermacoce*.)

Half-hardy evergreen trailer. Division; dry, gravelly soil; protection of a cold frame in winter.

E. vittora'lis. White. Winter. W. Indies. Jacq. H. Schenb. t. 31.

— *monta'na*. Sibth. Fl. Gr. t. 143. 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., *Geraniaceæ*; Tribe, *Geraniææ*. 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. Blush. June. Levant. 1724.

— *ctic'num*. Lilac. July. South Europe. 1711.

— *ci'cuta'rium pimpinellifol'ium*. ¾. Purple. July. South Europe. 1800.

— *gru'num*. Blush. July. Crete. 1596. Sibth. Fl. Gr. t. 656.

— *murica'tum*. ½. Red. July. 1827.

— *Mu'rcicum*. 1. Red. July. 1827.

HARDY BIENNIALS.

E. ci'cuta'rium bipinnat'um. Pink. June. Numidia. 1804.

— *geifol'ium*. 1. Lilac. 1835.

E. pulverulentum. 1. Lilac. Spain.
— *romanum*. †. Purple. June. Rome. 1724.
B. M. t. 377.

HARDY HERBACEOUS.

E. alpinum. †. Red. June. Italy. 1814.
— *anthemifolium*. †. Purple. June. Iberia. 1820.
— *caucasicum*. 1. Purple. June. France. 1816.
— *glaucocephalum*. Lilac. July. Egypt. 1732.
— *Gussonei*. 1. Pale purple. June. Naples. 1821. B. M. t. 2445.
— *hirtum*. †. Purple. June. Egypt. 1818.
— *lito'reum*. Lilac. June. Narbonne. 1818.
— *malapoiesis*. †. Purple. June. N. Africa. 1800.
— *coraicum*. †. Purple. June. Corsica. 1817.
— *petraeum*. †. Purple. July. South Europe. 1640.
— *serotinum*. †. Blue. August. Siberia. 1821. Swt. Fl. Gard. ser. 2, t. 312.
Syns., *E. multicaule* and *ruthenicum*.
— *Stephaniaenum*. †. Blue. June. 1820
— *stylatum*. †. Purple. June. 1826.

HALF-HARDY HERBACEOUS.

E. crassifolium. †. Scarlet. June. Cyprus. 1788.
— *glandulosum*. See *E. macradentum*.
— *guttatum*. Purple, black. N. Africa. 1861.
Trailer.
— *hymenodes*. †. Pink. July. Barbary. 1789.
B. M. t. 1174.
— *incarnatum*. †. Flesh. June. Cape of Good Hope. 1787. Evergreen. B. M. t. 261.
— *laciniatum*. †. Red. June. Crete. 1794.
Sibth. Fl. Gr. t. 655.
— *macradentum*. Purple. Pyrenees. 1867.
B. M. t. 5665. Syn., *E. glandulosum*.
— *melastigmum*. 1. Purple. June. 1823.
— *Munbyanum*. Purple. Algeria. 1872.
— *pelargonifolium*. White, violet. July. Anatolia. 1850. Gfl. 1852, p. 19.
— *Reichardtii*. †. White. July. Minorca. 1788. Syn., *E. chamædryoides*.

Erophila. (From *er*, the spring, and *phileo*, to love; referring to the time of flowering. Nat. ord., *Cruciferae*; Tribe, *Alyssineae*. Allied to *Draba*.)

Hardy annuals, with white flowers. Seeds; common soil.

E. americana. †. March. N. Amer. 1816.
— *procox*. †. March. Caucasus. 1820.
— *vulgaris*. †. March. Britain.

Erpetion. New Holland; or Spurless Violet. See *Viola*.

Ervum. See *Vicia*.

Eryngium. Eryngo. (From *Eryngo*, a name adopted by Pliny from Dioscorides. Nat. ord., *Umbelliferae*; Tribe, *Saniculeae*. Allied to *Sanicula*.)

Showy biennial and perennial herbs. The roots of *E. maritimum* and *campestre* are sweet, aromatic, and tonic; they are candied, and sold by the name of Eryngo-roots. Seeds and divisions in common soil; they will thrive best in sandy loam. Half-hardy species require the protection of a pit or greenhouse in winter, and sandy loam.

HARDY ANNUALS, ETC.

E. tenue. 1. Blue. July. Spain. 1824.
— *tricuspidatum*. 2. Green. September. Spain. 1699. Biennial.

HALF-HARDY HERBACEOUS.

E. bromeliifolium. 3. White. July. New Spain.
— *Carlinae*. Blush. August. North Spain. 1827.
— *Cervantezii*. 1. Green. August. Mexico. 1820.
— *comosum*. Blue. July. New Spain. 1818.
— *eractatum*. 2. July. Buenos Ayres. 1817.
— *eburneum*. 6. White. Autumn. S. Brazil. 1872. Rev. Hort. 1876, p. 112.
— *foetidium*. 1. Green. September. W. Ind. 1714.
— *gracile*. 1. Blue. July. New Spain. 1824.
— *gramineum*. Blush. August. New Spain. 1825.
— *Lassauzii*. 6. White. Autumn. Monte Video. 1872.
— *longifolium*. 3. White. July. Mexico. 1820.
— *monocephalum*. Purple. August. Mexico. 1824.
— *ovatum*. 1½. White. July. Bathurst, Australia. 1824.
— *serratum*. 1. Blue. July. New Spain. 1800.
— *ternatum*. Purple. August. Crete.

HARDY HERBACEOUS.

E. alpinum. 2. Blue. July. Switzerland. 1807. B. M. t. 922.
— *amethystinum*. 2. Steel blue. July. Styria. 1848.
— *Andersoni*. 2. Blue. July. 1800.
— *aquatium*. 4. White. August. N. Amer. 1699. Jacq. Ic. t. 347.
— *aguifolium*. 1. Blue. August. Spain. 1816.
— *asperifolium*. See *E. giganteum*.
— *azurum*. 2. Blue. July. South Europe. 1790.
— *Baldovini*. Blush. August. Carolina. 1824.
— *Billardieri*. Blush. July. South France. 1781.
— *Bourgei*. 2. Pale blue. July. South France. 1781.
— *caeruleum*. 2. Blue. July. Caspian. 1816.
— *campestre*. 2. Blue. July. Britain. Eng. Bot. ed. 3, t. 570.
— *corniculatum*. 1. Grey, green. July. Portugal. 1803. B. M. t. 1427.
— *crinitum*. Blue. August. Spain. 1826.
— *dichotomum*. 2. Blue. July. South Europe. 1820.
— *dilatatum*. 1½. Blue. July. Portugal. 1821.
— *giganteum*. 4. Blue. July. Caucasus. 1820. Syn., *E. asperifolium*.
— *glomeratum*. 1. Blue. July. South Europe. 1826.
— *macrophyllum*. 1831.
— *maritimum*. 1½. Blue. July. Britain. Eng. Bot. ed. 3, t. 569.
— *Olivieraenum*. 2-3. Blue. Summer. Caucasus?
— *platum*. 3. Light blue. July. Europe. 1596.
— *pusillum*. †. Green. July. Spain. 1640.
— *galloides*. †. Green. July. Portugal. 1810.
— *rigidum*. †. Blue. July. France. 1816.
— *serrata*. 6. White. Autumn. S. Brazil. 1872. Syn., *E. platyphyllum*.
— *spina-alba*. White. August. South Europe, 1816.
— *triquetrum*. 1. Blue. July. South Europe. 1824.
— *virgatum*. 1. Light blue. June. N. Amer. 1810. B. C. t. 1636.
— *virginianum*. 2. Blue. August. N. Amer.

Ery'simum. Hedge Mustard. (From *eryo*, to draw; supposed to pro-

duce blisters. Nat. ord., *Cruciferae*; Tribe, *Sisymbriaceae*. Allied to *Sisymbrium*.)

Annuals and biennials, by seed in the open border, in September or March; perennials, seeds and divisions.

HARDY PERENNIALS.

- E. lanceolata* *tum.* Yellow. May. Alps of Europe. B. M. t. 2423.
 — *pulehe* *llum.* 1. Saffron-yellow. April. 1880.
 — *pu' m'illum.* $\frac{1}{2}$. Yellow. May. Switzerland. 1819.
 — *suffrutico'sum.* 2. Yellow. June. Europe. 1820. Evergreen.
 — *versicolor.* 1. Variegated. May. Caucasus. 1825.
 — *Wahlenbergii.* 2. Bright yellow. July. Transylvania. 1891.

HARDY ANNUALS.

- E. perfoliata* *tum.* 1. White. May. Austria. 1818.
 — *quadricorne.* 1. Yellow. June. Siberia. 1821.

HARDY BIENNIALS.

- E. altissimum.* 3. Yellow. June. Germany. 1818.
 — *Andrzejoskia* *num.* $1\frac{1}{2}$. Yellow. June. Tauria. 1818. Syn., *E. diffusum.* B. R. t. 388.
 — *aurum.* 1. Yellow. June. Caucasus. 1820.
 — *Barbarea.* See *Barbarea vulgaris*.
 — *bicolor.* 1. Yellow. May. Switzerland. 1818.
 — *canescens.* 1. Yellow. June. South Europe. 1816.
 — *collinum.* 1. Yellow. May. Caucasus. 1823.
 — *crassipes.* 1. Yellow. June. 1835.
 — *cratibens.* $\frac{1}{2}$. Yellow. June. Switzerland. 1819.
 — *ferrum.* 1. Yellow. July. Switzerland. 1819.
 — *hieracifolium.* 1. Yellow. June. North Europe. 1816.
 — *ibericum.* 1. Yellow. May. America. 1803.
 — *intermedium.* 2. Yellow. June. Switzerland. 1819.
 — *leptophyllum.* 1. Yellow. June. Iberia. 1821.
 — *longifolium.* 1. Yellow. June. South Europe. 1823. Syn., *E. grandiflorum*.
 — *longisiliquosum.* $1\frac{1}{2}$. Yellow. June. Switzerland. 1819.
 — *ochroleucum.* Yellow. Europe. Gf. t. 54.
 — *patulum.* 1. Yellow. June. South Europe. 1820.
 — *Perovskia* *num.* $1\frac{1}{2}$. Orange. July. 1838. B. M. t. 3757.
 — *præcox.* See *Barbarea præcox*.
 — *Redovskii.* 1. White. June. Siberia. 1821.
 — *rhaeticum.* 1. Yellow. June. Switzerland. 1819.
 — *strigosum.* 1. Yellow. June. Siberia. 1806.
 — *strictum.* 2. Yellow. June. Austria. 1819.

Erythæa. (A name adapted from Greek mythology. Nat. ord., *Palmæe*.) Graceful greenhouse palms. For culture, see **ARECA**.

- E. armata.* California. Syn., *E. aculeata*. Gf. 1887, p. 279, f. 24.
 — *edulis.* 30. March. California. Syn., *Brahea edulis*.

Erythræa. (From *erythros*, red; the colour of the flowers of some species. Nat. ord., *Gentianeæ*.)

The biennial should be sown in autumn; the perennials, by seeds and division; sandy loam, with a little peat. All are worth cultivating.

- E. aggregata.* $\frac{1}{2}$. Red. July. South Europe. 1824. Biennial. Swt. Fl. Gard. t. 137.
 — *conferta.* See *E. linariifolia*, var. *humilis*.
 — *diffusa.* Rose. 1822. Syn., *E. pulchella*, var. *diffusa*, Gf. t. 1038, *E. ramosissima*, and *Chironia pulchella*. Hardy perennial.
 — *linariifolia humilis.* $\frac{1}{2}$. Pink. June. Spain. 1824. Herbaceous perennial. Syn., *E. conferta*.
 — *maritima.* $\frac{1}{2}$. Yellow. July. Switzerland. 1777. Herbaceous trailer.
 — *Muhlenbergii.* 6. Deep pink. Spring. California.
 — *Mussouri.* Yellow. July. Azores. 1777. Herbaceous.
 — *venusta.* $\frac{1}{2}$. Rose, with white eye. California. 1878.

Erythrina. Coral-tree. (From *erythros*, red; the colour of the flowers. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*.)

According to Dr. Royle, gum lac is the produce of a species of Coral-tree, *E. monosperma*, 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. *E. cristagalli* does out of doors in sheltered places, cut down, and the roots slightly protected as for fuchsias, in winter.

- E. Bidwillii.* A hybrid between *E. herbacea* and *E. cristagalli*.
 — *bogotensis.* Scarlet. Columbia. 1873.
 — *caffra.* B. M. t. 2431. See *E. Humel*.
 — *ca'rneæ.* 7. Flesh-colour. Early spring. Vera Cruz. 1733. B. R. t. 389. Syn., *E. americana*.
 — *compacta.* Coral-red. 1882. A form of *E. cristagalli*.
 — *corallodendron.* 20. May. W. Ind. 1690. Syn., *E. spinosa*.
 — *cristagalli.* 40. June. Brazil. 1771. B. M. t. 2161. Syn., *E. laurifolia*.
 — *Coltyana.* Rich red.
 — *floribunda.* Rosy-crimson.
 — *ornata.* Dark vermilion.
 — *ruber'rima.* Crimson, tinged with rose.
 — *spectabilis.* Leaves variegated with yellow.
 — *erythrosta'chya.* Scarlet. July.
 — *fulgens.* 10. E. Ind. 1810.
 — *glauca.* 10. Copper-colour. Summer.
 — *herbæcea.* 3. Scarlet. July. Carolina. 1824. Herbaceous. B. M. t. 877.
 — *Humel.* 30-60. Scarlet. S. Africa. Syn., *E. caffra.* B. M. t. 2431.
 — *indica.* 20. Scarlet. E. Indies. 1814.
 — *marmorata.* Scarlet. May. Leaves blotched with white. Polynesia. 1879. Syn., *E. marmorata*.
 — *Parce'li.* Red. Leaves variegated with yellow. S. Sea Islands.
 — *inermis.* See *E. mitis*.
 — *insignis.* 40. Scarlet. April. 1857. Gf. t. 988.
 — *laurifolia.* See *E. cristagalli*.
 — *macrophylla.* 20. Teneriffe. 1822.
 — *marmorata.* See *E. indica*, var. *marmorata*.
 — *mitis.* Scarlet. May. Caraccas. Jacq. H. Schenb. t. 216. Syn., *E. inermis*.
 — *ovatifolia.* 10. E. Indies. 1816.
 — *Parce'li.* Flor. Mag. new ser. t. 95. A variety of *E. indica*.
 — *p'cta.* Red. Polynesia. 1874.

- E. poia'nthes*. Scarlet. January to March. 1828.
 B. R. t. 1246.
 — *subinermis*. 15. Scarlet. Madeira.
 B. R. t. 1617.
 — *portorice'nsis*. Perhaps a synonym of *Rudol-
 phia volubilis*.
 — *pulche'rriima*. Crimson. 1876.
 — *secundiflo'ra*. 20. Brazil. 1820.
 — *specio'sa*. 10. September. W. Indies. 1805.
 Andr. Rep. t. 443.
 — *specta'bilis*. S. Sea Islands. 1881.
 — *spino'sa*. See *E. corallodendron*.
 — *veluti'na*. 30. Scarlet. June. Madeira.
 B. M. t. 3227.
 — *vespertilio*. W. Australia. 1885.

Erythrochæ'te. See **Senecio**.

Erythrochi'ton. (From *erythros*, red, and *chiton*, a tunic; referring to the flower-envelope, or calyx. Nat. ord., *Rutaceæ*; Tribe, *Cuspariææ*. Allied to *Galipea*.)

Stove evergreen tree. Seeds and cuttings, in sand and heat; peat and loam.

- E. brazili'ensis*. 10. White. July. Brazil. 1842. B. R. 1843, t. 47.
 — *hypophylla'nthus*. White. Columbia. 1853. Syn., *Hypophyllanthus Lindeni*.
 — *Linde'ni*. Mexico. 1840.

Erythrolæ'na. Mexican Thistle. (From *erythros*, red, and *læna*, a cloak; referring to the scarlet flowers. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*.) United with **Cnicus**.

E. consp'icua. Swt. Fl. Gard. t. 134. See *Cnicus conspicuus*.

Erythro'nium. Dog's-Tooth Violet. (From *erythros*, red; referring to the colour of the leaves and flowers of the species first discovered. Nat. ord., *Liliaceæ*; Tribe, *Tulipeæ*.)

Hardy bulbous plants; offsets; common garden-soil;

- E. a'lbidum*. †. White. April. Louisiana. 1824.
 — *america'num*. B. M. t. 1113. See *E. lanceo-
 latum*.
 — *de'no-ca'nis*. †. Lilac. March. Europe. 1596. B. M. t. 5.
 — *albidum*. †. White. March. Italy. 1596.
 — *longiflo'rium*. Rose. March. Garden variety. Swt. Fl. Gard. ser. 2, t. 76.
 — *ru'brum*. †. Red, lilac. March. Europe. 1596.
 — *giga'nteum*. Yellow. April. N. Amer.
 — *grandiflo'rum*. †. Yellow. May. N. Amer. 1826. B. R. t. 1786.
 — *albiflo'rum*. White. N.W. America. 1874.
 — *Henderso'ni*. †. Pale lilac, with dark purple spot at base. Oregon. 1888. B. M. t. 7017.
 — *lanco'la'tum*. †. Yellow. April. N. Amer. 1865. Syn., *E. americanum*. B. M. t. 1113.
 — *revolu'tum*. Purple, yellow. California.

Erythrophle'um. Red Water-tree. (From *erythros*, red, and *phelos*, an ancient name for a prickly plant; referring to the flow of red juice when the tree is wounded. Nat. ord., *Legumi-
 nosæ*; Tribe, *Dimorphandreeæ*. Allied to *Mimosa*.)

Stove evergreen trees. Cuttings of ripened shoots in sand, under a bell-glass, in heat; rich fibry loam, with a little peat.

- E. guine'ense*. 100. Pale yellow. Sierra Leone. 1793.
 — *pubistami'neum*. 20. Angola. 1889.

Erythro'pogon. (From *erythros*; red, and *pogon*, a beard; referring to the colour of the chaffy scales of the flowers. Nat. ord., *Compositæ*; Tribe, *Muloideæ*.) See **Metalsia**.

- E. imbrica'tus*. See *Metalsia imbricata*.
 — *umbella'tus*. See *Metalsia umbellata*.

Erythro'tis Beddo'mei. See **Cyanotis keuensis**.

Erythro'xylon. (From *erythros*, red, and *xylon*, wood. Nat. ord., *Lineæ*; Tribe, *Erythroxyloæ*.)

The wood of some species is deep red. *E. havane'ense* 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.

- E. Co'ca*. 3-6. Greenish. S. America. 1869. The leaves form an important article of commerce amongst the Indians, by whom they are chewed.
 — *havane'ense*. 10. Havannah. 1822.
 — *hypericifo'lium*. 40. Mauritius. 1818.
 — *laurifo'lium*. 50. Mauritius. 1823.
 — *mexica'num*. Greenish. Mexico. 1869. Gfl. t. 615.

Escallo'nia. (Named after *Escallon*, a Spanish traveller. Nat. ord., *Saxifrageæ*; Tribe, *Escalloniææ*.)

Evergreen greenhouse or half-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*. See *E. montevidensis*.
 — *ca'ndida*. White. St. Paul's, Brazil. Lem. Jard. Fl. t. 403.
 — *caraca'sa'na*. White. Caraccas. 1827.
 — *di'scolor*. 6. White. S. Amer. 1820.
 — *floribu'nda*. White. July. New Grenada. 1827. B. C. t. 1, 72.
 — *glandulo'sa* of B. C. t. 1291, see *E. rubra*, var. *albiflora*; of Swt. Fl. Gard. ser. 2, t. 81, see *E. Grahami*.
 — *Gra'hamsi*. 5. White. November. Chili. Syn., *E. glandulosa* of Swt. Fl. Gard. ser. 2, t. 81.
 — *grandiflo'ra*. 5. July. 1846.
 — *ilini'ta*. 5. White. August. Chili. 1830.
 — *inca'na*. July. 1847.
 — *macra'ntha*. 3. Red. June. Chiloe. 1848. B. M. t. 4473.
 — *Ingrami*. Garden variety.
 — *sangui'nea*. Deep red. Chili. 1873. Syn., *E. sanguinea*.
 — *monta'na*. Red. Chili. 1873.
 — *montevid'ensis*. 6. White. July. Brazil. 1827. B. M. t. 1467. Syn., *E. bifida*.
 — *organe'nsis*. 3. Rose. Organ Mountains. 1844. B. M. t. 4274.
 — *Philippia'na*. White. Valdivia. 1873. G. C. 1878, x. p. 109.
 — *ptero'cladon*. 4. White, red. July. Pata-
 gonia. 1854. Hardy. B. M. t. 4827.

- E. puberulenta*. 8. Chili. 1831.
 — *revoluta*. 10-20. White. September. Chili. 1837. B. M. t. 6949.
 — *rubra*. 3. Red. September. Chili. 1827. B. M. t. 2890.
 — *albiflora*. 6. White. July. Chili. 1828. Syn., *E. glandulosa* of B. C. t. 1291.
 — *pubescens*. 6. Red. July.
 — *punctata*. 3-6. Dark red. July. Chili. 1828. B. M. t. 6599. Syn., *E. sanguinea*.
 — *viscosa*. 5. White. Mendoza. 1829.

Eschallot, or Shallot. *Allium Ascalonicum*.

Varieties.—The *Common*, which puts up long, slender, dark green leaves; and the *Long-keeping*, with larger bulbs and dwarfier 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.

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.

Insect.—*Anthomyia platyrra*. Closely allied to the Onion fly, *Anthomyia ceparum*, but attacks the plant by depositing its eggs at the base of the bulb, and not in the leaves. The damage is done by the maggots eating the bulbs. As soon as the shallots show signs of being attacked, the whole plant should be pulled up and at once burnt, to prevent any spread of the damage.

Eschscholtzia. (Named after Dr. Eschscholtz, a botanist. Nat. ord., *Papaveraceae*; Tribe, *Hunnemannieae*.)

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. californica*. 1½. Bright yellow. Summer. N. W. America. 1790. Syns., *E. crocea*, B. R. t. 1677, and *Chryseis crocea*, B. R. t. 1948. See also *E. Douglasii*.
 — *compacta*. 1. Yellow. August. California. 1833. Syn., *Chryseis compacta*.
 — *crocea*. 1. Deep orange. August. California. 1823. B. M. t. 3495.
 — *Douglasii*. 1. Yellow. California. Syn., *E. californica* of B. M. t. 2887, and B. R. t. 1168.
 — *fumariifolia*. See *Hunnemannia fumariifolia*, B. M. t. 3061.
 — *tenaxifolia*. ¾. Yellow. California. B. M. t. 4812.

Esmeralda. (Derivation not given. Nat. ord., *Orchideae*; Tribe, *Vandeeae*.)

Showy stove epiphytal orchid. Culture same as *AERIDES*.

E. bella. Light ochre, barred with brown; lip white, purplish brown. 1838.

— *Clarkei*. Now known as *Arachnante Clarkei*. B. M. t. 7077. Syn., *Vanda Clarkei*.

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 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 cumbersome 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, etc., 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 of this form—



It is not the least advantage attendant upon this mode of training that the fruit is easily covered and protected.

Espele'tia. (In honour of *Don Jose de Espelata*, a viceroy of New Grenada. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)

Greenhouse woolly-leaved plants. Sandy peat. Leaves not to be wetted during the winter.

- E. argentea*. 6. Yellow. July. New Grenada. 1845. B. M. t. 4480.
— *grandiflora*. 10. Yellow. New Grenada.
— *nerifolia*. Yellow. Venezuela.

Etiolation. The same as blanching.

Euade'nia. (From *eu*, well, and *aden*, a gland; referring to the glands in the flowers. Nat. ord., *Capparidææ*; Tribe, *Cappareaæ*.)

Stove herbs or sub-shrubs. Cuttings in bottom-heat; rich sandy loam.

- E. eminens*. Yellow. January. W. Tropical Africa. 1861. B. M. t. 6578.

Eucaly'ptus. Gum-tree. (From *eu*, good, and *kalypto*, covering; referring to the flower-envelope, or calyx, which covers the flower and falls off like a cap. Nat. ord., *Myrtaceæ*; Tribe, *Leptospermeæ*. Allied to *Metrosideros*.)

Greenhouse and half-hardy or hardy evergreen trees, from Australia, with white blossoms (except where otherwise stated). Cuttings of young firm side shoots in the beginning of summer, in sandy soil, under a bell-glass, but mostly from imported seeds; peat and loam; a cool greenhouse. Most of them in warm places will do well against walls, with a little protection, if dryness is secured.

- E. alata*. 1816.
— *amygdali'na*. June. 1830. B. M. t. 3260.
Syns., *E. Lindleyana* and *E. longifolia*.
— *Andra'na*. 1890. Rev. Hort. 1890, p. 346.
— *calophylla*. Rev. Hort. 1885, p. 420. Syn., *E. spachnicarpon*, B. M. t. 4036.
— *citriodora*. The leaves smell like Citron when rubbed. 1881
— *coccifera*. 20. Purple. December. Tasmania. B. M. t. 4987.
— *cordata*. B. C. t. 328. See *E. pulverulenta*.
— *cornuta*. 10-30. Red, yellow.
— *corymbosa*. 1788.
— *cotini'folia*. 1818.
— *eugenioides*. 1830.
— *ficifolia*. Crimson. 1882.
— *globulus*. 150. 1810.
— *Guinia*. Victoria. G. C. 1883, xix. p. 437.
— *haemastoma*. 30. 1803.
— *heterophylla*. 30. 1820.
— *hirsuta*. 20.
— *hypericifolia*. 1820.
— *incrassata*. 6. 1818.
— *longifolia*. B. R. t. 947. See *E. amygdalina*.
— *marginata*. May. 1794.
— *me'dia*. 1823.
— *macrocarpa*. 6. Purple. June. 1842. B. M. t. 4333.
— *microphylla*. 20. 1823.
— *mucronata*. 1823.
— *multiflora*. 1820.
— *myrtifolia*. 6. 1823.
— *obliqua*. 100. July. 1770.
— *orbicularis*. 1816.
— *ovata*. 6. 1820.
— *perfoliata*. 1820.
— *persicifolia*. July. Cape of Good Hope. 1817. B. C. t. 501.
— *phillyreoides*. 1820.
— *pibularis*. 1804.
— *polyanthemos*. White. Hardy.
— *Preissiana*. 8. Yellow. 1843. B. M. t. 4266.
— *pulche'lla*. 1820.
— *pulverulenta*. 30. June. 1810. B. M. t. 2087. Syn., *E. cordata*. B. C. t. 328.
— *pulv'gera*. 1824.
— *purpurascens*. 1523.

- E. resinifera grandiflora*. White. July. Andr. Rep. t. 400.
 — *saltiflora*. 1804.
 — *scabra*. 1810.
 — *splachnicarpa*. B. M. t. 4036. See *E. calophylla*.
 — *Staigeria na*. G. C. 1889, v. p. 437.
 — *stenophylla*. 1823.
 — *stricata*. B. M. t. 7074.
 — *tetraгона*. 16. Red. July. 1824. Syn., *Eudesmia tetragona*.
 — *urnigera*. Tasmania. G. C. 1888, iii. p. 460.
 — *verrucosa*. 1820.
 — *viminalis*. 1810.
 — *virgata*. 10-15.

Euchæ'tis. (From *eu*, well, and *chaite*, a head of hair; the bottom of the petals furnished with hairs inside. Nat. ord., *Rutaceæ*; Tribe, *Diosmeæ*. Allied to *Diosma*.)

Greenhouse evergreen shrub, from S. Africa. For culture, see *DIO'SMA*.

- E. glomerata*. 1. White. May. 1818.

Euchari'dium. (From *eucharis*, agreeable; referring to the general appearance of this exquisite little hardy annual. Nat. ord., *Onagraceæ*. 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. Hardy annuals.

- E. Breweri*. 1. Rich purple. July. California.—*concinnum*. 1. Purple. June. California. 1836. B. R. t. 1962.
 — *grandiflorum*. Rosy-red. June. California. 1824.

Eu'charis. (From *eucharis*, agreeable; alluding to the fragrant flowers. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllææ*.)

Stove bulbs. Offsets. Light loam and peat. Summer temperature.

- E. amazonica*. White. Upper Amazons. 1856.
 — *Bakeriana*. White. Columbia. 1890. B. M. t. 7144.
 — *canadica*. 1. White. Columbia. 1876. Fl. Ser. t. 788.
 — *grandiflora*. 1½. White. December. New Grenada. Fl. Ser. t. 957.
 — — *Modrei*. White, yellow. 1888.
 — *Lehmannii*. White. Popayan. 1889. Gf. t. 1300, f. 1.
 — *Mastrei*. 1. White, striped yellowish-green. February. New Grenada. 1885. B. M. t. 6831.
 — *Sanderi*. 1. White, striped primrose. March. New Grenada. 1882. B. M. t. 6676.
 — — *multiflora*. Flowers smaller, striped green. B. M. t. 6831.
 — *Stevensii*. Hybrid between *E. candida* and *E. Sanderi*. 1890.
 — *subdentata*. 1. White. December. Andes of New Grenada. 1876. Syn., *Calliphuria subdentata*. B. M. t. 6289.

Euchi'lus. (From *eu*, fine, and *cheilos*, a lip; referring to the upper division of the flower-envelope, or calyx. Nat. ord., *Leguminosææ*.) See **Pultenæa**.

- E. obcordatus*. B. R. t. 403. See *Pultenæa obcordata*.

Euchlæ'na. (From *eu*, beautiful, and *chlaina*, wool; in reference to the long beautiful stigmas. Nat. ord., *Gramineææ*; Tribe, *Maydeææ*. Allied to *Zea*.)

A valuable fodder-grass for tropical climates; it is extremely productive, each plant producing many stems which grow 10 to 15 feet high, and when in flower present a magnificent appearance. — Stove annual; seeds raised in a hotbed and transplanted to a border in a stove where they may have plenty of room. Rich loam.

- E. luxurians*. 15. Purple, green. Guatemala. B. M. t. 6414. Syn., *Reana luxurians*.

Euchre'sta. (From *euchrestos*, useful; on account of the medicinal properties of the seeds. Nat. ord., *Leguminosææ*; Tribe, *Dalbergiææ*. Allied to *Andira*.)

The seeds of the Javan *E. Horsfieldii* are used by the natives as a remedy against poison taken into the stomach, and as a general medicine, being highly esteemed by them; the whole plant is intensely bitter. Greenhouse shrub. Seeds, cuttings of the ripened shoots, in heat and under a hand-glass.

- E. japonica*. Bluish-white. Japan. 1865. Gf. 1865, t. 487.

Euchro'ma. (From *eu*, good, and *chroma*, colour; referring to the colour of the bracts. Nat. ord., *Scrophulariaceææ*.) See **Castilleja**.

- E. coccinea*. See *Castilleja coccinea*.
 — *grandiflora*. See *Castilleja sessiliflora*.

Eu'clea. (From *eukleia*, glory; referring to the beauty of the ebony-like wood, and fine green leaves. Nat. ord., *Ebenaceææ*. Allied to *Diospyros*.)

Greenhouse evergreens. Cuttings of half-ripe shoots in sand, under a bell-glass, in April; peat and loam.

- E. racemosa*. 5. White. November. S.W. Africa. 1772.
 — *undulata*. 5. White. Transvaal. 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., *Liliaceææ*; Tribe, *Scilleææ*. Allied to *Daubenya*.)

Strong bulbs, which, if planted six inches deep in a rich, light border in front of a wall or house, remain uninjured, and flower every year. Propagated by offsets.

- E. amaryllidifolia*. 1. Green. S. Africa. 1879.
 — *bicolor*. 1. Green. Purple. Natal. 1878.
 — *biflora*. ½. Light green. April. S. Africa. 1792. Jacq. Ic. t. 449.
 — *clavata*. 1. Green. S. Africa. 1862.
 — *gambesiacææ*. Green. E. Tropical Africa. 1886.
 — *na'na*. ¾. Brown. May. S. Africa 1774. B. M. t. 1495.
 — *pallidiflora*. 3. Greenish-white. 1887.
 — *punctata*. 2. Green, brown. June. S. Africa. 1783. B. M. t. 913, and t. 1539.
 — *purpureocavatis*. 2. Green, brown. April. S. Africa. 1794. Andr. Rep. t. 369.
 — *regia*. 2. Green. March. S. Africa. 1702. Red. Lil. t. 175.

- E. striata*. 2. Green. S. Africa. 1790.
— *undulata*. 2. Green. April. S. Africa.
1760. B. M. t. 1083.

Eucrosia. (From *eu*, beautiful, and *krossos*, a fringe; referring to the cup above the insertion of the stamens. Nat. ord., *Amaryllidæ*; Tribe, *Amaryllæ*.) Allied to *Stenomesson* and *Elisena*.)

Very ornamental greenhouse bulb. *B. 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. Offsets; light, rich loam.

- E. bicolor*. 1. Scarlet, green. April. Ecuador. 1816. B. R. t. 207.

Eucryphia. (From *eu*, well, and *kryphia*, a cover; alluding to the calyptra-like calyx of the flower. Nat. ord., *Rosacæ*; Tribe, *Quillajæ*.)

Evergreen trees, hardy or nearly so. cuttings of young shoots in sand, under glass. Loam and peat.

- E. Billardieri Milligani*. White. Tasmania. 1891. B. M. t. 7200.
— *cordifolia*. 20. White. Chiloe. 1851.
— *pinnatifolia*. 10. White. August. Chili. 1880. B. M. t. 7067.

Eudeisia. (From *eu*, beautiful, and *desma*, a bundle; referring to the connected parcels of stamens. Nat. ord., *Myrtacæ*.) See *Eucalyptus*.

- E. tetragona*. See *Eucalyptus tetragona*.

Eufugia. (Derivation not given. Nat. ord., *Scrophulariaceæ*.)

- Showy perennial. Light sandy soil. Seeds.
E. latifolia. 1. Purple. August. S. Europe. Syn., *Bartsia latifolia*.

Eugenia. (Named after Prince Eugene of Saxony. Nat. ord., *Myrtacæ*; Tribe, *Myrteæ*. Syns., *Caryophyllus* and *Jambosa*.)

Stove and greenhouse evergreen trees and shrubs white blossomed, except where otherwise mentioned. Cuttings of firm shoots, with leaves on, in heat, under a bell-glass. Fibry loam, and leaf-soil.

- E. amplexicaulis*. 3. Summer. Chittagong. B. R. t. 1033. Syn., *Jambosa amplexicaulis*.
— *apiculata*. See *Myrtus Luma*, var. *apiculata*.
— *aquea*. 20. E. Indies. 1820. Syn., *Jambosa aquea*. Wight. Ic. t. 216.
— *australis*. See *E. myrtifolia*.
— *axillaris*. Jamaica. Syn., *E. barnensis*. Jacq. Ic. t. 486.
— *balsamica*. 15. Jamaica. 1816.
— *barnensis*. See *E. axillaris*.
— *bifurca*. May. E. Indies. 1824. Syn., *Jambosa laurifolia*.
— *brasiliensis*. 6. April. Brazil. B. M. t. 4526.
— *buxifolia*. 4. May. Jamaica. 1818.
— *caryophyllata*. 20. Moluccas. 1797. Syns., *Caryophyllus aromaticus*, and *Syzygium caryophyllifolium*.
— *compactifolia*. Brazil. Gf. t. 251.
— *elliptica*. 8. July. New S. Wales. 1790. B. M. t. 1872. See *E. Smithii*.
— *floribunda*. 5. Jamaica.
— *fragrans*. 10. April. Jamaica. 1790. B. M. t. 1242. Syn., *Ananomis punctat* a.

- E. frondosa*. May. Nepal. 1824. Syn., *Syzygium venosum*.
— *fruticosum*. May. E. Indies. 1824. Syn., *Syzygium fruticosum*.
— *Garberi*. 50-60. Florida. 1889. G. and F. 1889, ii. p. 28, f. 87.
— *glandulifera*. See *E. zeylanica*.
— *glomerata*. May. Mauritius. 1824. Syn., *Syzygium glomeratum*.
— *hybrida*. 3. Garden hybrid. 1862. Hardy.
— *inophylla*. May. E. Indies. 1826. Syn., *Syzygium inophyllum*.
— *Jambollana*. 20. August. E. Indies. 1796. Syn., *Syzygium Jambollanum*.
— — *obtusifolia*. 10. E. Indies. 1821. Syn., *E. obtusifolia*.
— *Jambos*. 25. E. Indies. 1768. Jacq. H. Schoenb. t. 402. Syn., *Jambosa vulgaris*. B. M. t. 3356.
— *javonica*. 10. Java. 1823. Syn., *Jambosa macrophylla*.
— *Korthalsii*. Sumatra. 1872.
— *latifolia*. 10. Guiana. 1793.
— *Luma*. B. M. t. 5040. See *Myrtus Luma*.
— *apiculata*. Gf. t. 890. See *Myrtus Luma*, var. *apiculata*.
— *macrocarpa*. 20. E. Indies. 1822. Syn., *Jambosa macrocarpa*.
— *magnifica*. Pale rose. New Caledonia. 1878.
— *malaccensis*. 25. Scarlet. July. E. Indies. 1768. Andr. Rep. t. 458. Syn., *Jambosa malaccensis*.
— — *purpurea*. Purple. June. E. Indies. 1768. Syn., *Jambosa purpurea*.
— *Micheuxii*. 12. Brazil.
— *myrtifolia*. E. Bengal and Singapore. B. M. t. 2230. Syns., *E. australis*, and *Jambosa australis*.
— *obovata*. Bourbon. 1823. Syn., *Syzygium obovatum*.
— *obtusifolia*. Wight Ic. t. 620. See *E. Jambollana*, var. *obtusifolia*.
— *oleoides*. Columbia.
— *paniculata*. April. Mauritius. 1822. Syn., *Syzygium paniculatum*.
— *Pimenta*. See *Pimenta vulgaris*.
— *pulchella*. 10. Moluccas. 1824.
— *racemosa*. See *Barringtonia racemosa*.
— *rugosa*. E. Indies. 1824.
— *sinemariensis*. 4. June. Guiana. 1823.
— *Smithii*. 8. July. New S. Wales. Syn., *E. elliptica* of B. M. t. 1872.
— *trinervia*. B. M. t. 9223. See *Rhodamnia trinervia*.
— *Ugni*. B. M. t. 4626. See *Myrtus Ugni*.
— *zeylanica*. 10. India, Malaya and Ceylon. 1825. Andr. Rep. t. 619. Syns., *E. glandulifera*, and *Syzygium zeylanicum*.

Eulalia. (From *eu*, well, and *lalia*, speech; referring to the praise bestowed upon this genus as ornamental grasses. Nat. ord., *Gramineæ*.)

Highly ornamental hardy grasses. Seeds divisions. Ordinary garden-soil. Useful for cool conservatories, etc.

- E. gracillima univittata*. Leaves with a central yellow band. Japan. 1889.
— *japonica*. See *Mischanthus sinensis*.
— *albo-lineata*. 5. Purple.
— — *foliis striatis*. Leaves with a central creamy band.
— — *zebrina*. 5. Purple. Leaves with transverse yellow bars.

Eulophia. (From *eulophos*, hand some crested; referring to the handsome lip, or labellum, furrowed into elevated ridges. Nat. ord., *Orchidæ*; Tribe,

Vandæ-Eulophiææ. Allied to *Galeandra*.)

A genus of pretty stove orchids, which like our British species are terrestrial. An Indian species of *Eulophia* is said to furnish 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 fibry, and well drained; well watered when growing, kept nearly dry when resting. Those from Sierra Leone and East Indies require a high temperature.

E. barba'ta. 1. July. S. Africa. 1825.

— *be'lla*. 2. Yellow, white, carmine, rose, green and brown. Zambesi. 1839.

— *callichro'ma*. Zambesi. G. C. 1839, vi. p. 298.

— *Dregea'na*. Chocolate, white. S. Africa.

— *ensa'ta*. 1. Greenish-yellow. Sierra Leone? 1822. B. R. t. 1147.

— *euglo'ssa*. White, red. Old Calabar. 1866.

— *giga'ntea*. 3-4. Lilac, yellow, purple. W. Tropical Africa. Syn., *Lissochilus*

giganteus. G. C. 1838, iii. p. 616, f. 83.

— *gra'cilis*. B. R. t. 742. See *Galeandra gracilis*.

— *guinee'nsis*. 1. Purple, brown. September. Sierra Leone. 1822.

— *hellebori'na*. See *Gymnadenia macrantha*.

— *Ledie'nii*. Reddish-brown, white. Lower Congo. Syn., *E. maculata* of Gf. t. 1285.

— *Maackaya'na*. B. R. t. 1433. See *Zygopetalum*

Maackii.

— *macrosta'chya*. 2. Yellow, green. October. Ceylon. B. R. t. 1972.

— *macula'ta*. Pink, white. B. R. t. 618.

— *megistophylla*. 1. Comoro Islands. G. C. 1835, xxiii. p. 787.

— *nu'da*. Rosy-lilac. India. G. C. 1891, ix. p. 701.

— *pu'lehra*. Yellowish-green, purple. Comoro Islands. 1832.

— *dive'rgens*. G. C. 1834, xxii. p. 102.

— *scri'pta*. Green, brown, yellow. Madagascar. 1872.

— *squa'tida*. Dingy-yellow. July. Manilla. 1833.

— *streptop'e'tala*. B. M. t. 2931. See *Lissochilus*.

— *vi'rens*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

— *vir'gata*. Green, purple. Ceylon. 1866. B. M. t. 5579.

that she selects is therefore yet unknown. Drought does not suit them.

Euno'mia. (From *eu*, well, and *nomos*, arranged; referring to the disposition of the leaves in pairs and the twin seeds. Nat. ord., *Cruciferae*; Tribe, *Lepidinea*. Allied to *Lepidium*.)

Half-hardy evergreen. Seeds under a glass, in spring; cuttings under a glass, in summer; common sandy soil; requires the protection of a pit, in most places, in winter; may be treated as an alpine.

E. oppositifolia. 1. White. July. Syria. 1827.

Euo'nymus. The Spindle-tree. (From *eu*, good, and *onoma*, a name; literally, of good repute. Nat. ord., *Celastrinea*; Tribe, *Celastræ*. Syn., *Evonymus*.)

Interesting hardy or half-hardy trees and shrubs. Their opening capsules look very beautiful in autumn 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 Nepal, 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. Pinkish. May. Nepaul. B. C. t. 1749.

— *chine'nsis*. 4. Pink. May. China. 1820.

— *echina'tus*. 10. White. May. Nepaul. 1824.

Deciduous. B. M. t. 2767.

— *grandiflorus*. 8. White. June. Nepaul. 1824.

— *Hamiltonia'nus*. 20. White. June. Nepaul. 1825.

— *japo'nicus*. 6. Pink. July. Japan. 1804.

B. R. 1844, t. 6. There are numerous varieties of this, such as:—*albo-marginatis*, *avereo-marginatis*, *Choweti*, *colummnaris*, *latifolius albus*, *latifolius aureus*, etc.

— *macula'tus*. 6. Pink. July. Japan. 1836.

— *radi'cans*. Decumbent. Japan. 1862.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

— *variega'tus*. 6. Pink. July. Japan. 1836.

HARDY DECIDUOUS.

E. ala'tus. Green. 1870.

— *america'nus*. 6. Pink. June. N. Amer. 1833. B. C. t. 1322.

— *angustifolius*. 6. Yellow, red. June. N. Amer. 1806. Evergreen.

— *a'tro-purpu'reus*. 6. Purple. June. N. Amer. 1756. Jacq. Vind. t. 120.

— *Carrie'ri*. Garden variety. 1881.

— *elegantissimus variega'ta*. Leaves silvery. Garden variety. 1882.

— *europa'us*. 15. White. June. Britain.

— *foliis variega'tis*. 15. White. May. Britain.

— *fructu albo*. 12. White. May. Britain.

— *latifolius*. 15. White. May.

— *na'nus*. 4. White. May.

— *umbriat'us*. Green. May. Japan.

— *latifolius*. 10. Green. June. Austria. 1730. B. M. t. 2484.

— *lucidus*. 7. White. Nepaul. 1820.

— *obova'tus*. 3. Pink. June. N. Amer. 1820.

— *pulche'riss'us foliis variega'tis*. Garden variety. 1890.

— *ti'ngens*. Green. Japan.

— *veluti'nus*. White. June. Caucasus. 1838.

— *verruco'sus*. 6. Green. May. Austria. 1763.

Euosma albiflora. Andr. Rep. t. 520. See *Logania floribunda*.

Eupatorium. (Named after *Mithridates Eupator*, King of Pontus, who discovered one of the species to be an antidote against poison. Nat. ord., *Compositae*; Tribe, *Eupatoriaceae*.)

Stove, greenhouse, and hardy shrubs, under shrubs, and herbaceous perennials, by cuttings in sand, under a bell-glass; division, seeds; peat and loam; common soil. Usual stove and greenhouse temperatures.

- E. ageratoïdes*. 4. White. August. N. Amer. 1640. Hardy.
— altissimum. 5. Pink. September. N. Amer. 1699. Jacq. Vind. t. 164. Hardy.
— aromaticum. 4. White. July. N. Amer. 1739. Hardy.
— atrovirens. Reddish-lilac. Mexico. Syn., *Hebeclinium atrovirens*.
— Ecllandiæ ri. Antumn. 1877. Syn., *E. gracile*, var. *odoratum*.
— Berteroïdum. White. August. W. Indies. 1830.
— cane-scens. 3. Purple, yellow. Jamaica. 1821.
— cannabi-num. 4. Pink. July Britain. Eng. Bot. ed. 3, t. 785. Hemp Agrimony. Hardy.
— chamædrifolium. 1. Blue. August. S. America. 1822.
— coronopifolium. 3. White. August. Carolina. 1824. Hardy.
— Da-lea. 6. Pink. August. Jamaica. 1773.
— floribundum. 1½. Blue. July. S. America. 1823.
— foeniculæ-cium. 4. Pale yellow. August. N. America. 1807. Hardy.
— Frase-ri. 3. White. August. Carolina. 1820. Hardy.
— glandulosum. 3-4. White. Mexico. B. R. t. 1723.
— grandifolium. White. Rev. Hort. 1882, p. 384.
— Haagea-num. White. S. America? 1867. Gf. t. 555.
— hyssopifolium. 1. White. August. N. Amer. 1699. Hardy.
— ianthi-num. 2. Purple. January. Mexico. 1849.
— ivæfolium. 3. Pink. September. Jamaica. 1794.
— Kirilowii. 2-3. White. Mandschuria. Gf. t. 850. Hardy.
— lanceolatium. 3. White. July. N. America. 1819. Hardy.
— ligustri-num. Winter.
— macrophyllum. 4. White. July. Jamaica. 1823.
— maculatum. 3. Purple. July. N. America. 1656. Hardy.
— megalophyllum. Lilac. Mexico. 1862. Sweet-scented. Syn., *Hebeclinium megalophyllum*.
— odora-tum. 3. Pink. August. Jamaica. 1752.
— paname-nsæ. Lilac-rose. Panama. 1877. Syn., *Hebeclinium panamense*.
— paniculatium. 6. Pink. August. S. Amer. 1818.
— perfoliatum. 2. White. July. N. America. 1699. Hardy.
— pro-bum. White. Peru. 1890.
— pubescens. 4. White. July. N. America. 1819. Hardy.
— purpureum. 5. Pink. August. N. America. 1640. Hardy.
— reticulatum. White. 1879.
— riparium. White. S. America? 1867. Gf. t. 525.

- E. rotundifolium*. 1. White. July. N. America. 1699. Hardy.
— salicifolium. White. August. N. America. 1815. B. M. 2010.
— Schiedea-num. White. June. Mexico. 1833.
— sessilifolium. 1. White. September. N. America. 1777. Hardy.
— syriacum. 4. Purple. August. Syria. 1807.
— tetragonum. White. Mexico. 1832.
— trifoliatum. 6. Purple. August. N. America. 1768. Hardy.
— truncatum. 5. Purple. August. N. America. 1811. Hardy.
— urolepis. 2. Rosy-lilac. Summer. Brazil. May be treated as an annual. Syn., *Hebeclinium urolepis*.
— vernalis. February. Gf. t. 750. Syn., *Comelinium grandiflorum*.
— verticillatum. 5. Purple. August. N. America. 1811. Hardy.
— Weinmannia-num. White. S. America? 1867. Ref. Bot. t. 155.
— zalapense. 3. White. July. Mexico. 1826.

Eupetalum. (From *eu*, handsome, and *petalum*, a petal; referring to the large handsome flowers. Nat. ord., *Begoniaceae*.) Now united with **Begonia**.

Greenhouse herbaceous perennial; division of the plant; cuttings of shoots when young, in sandy soil, under a bell-glass; sandy peat and fibry loam.

- E. petaloïdes*. Pink, white. April. Peru. 1833. B. R. t. 1757.

— punctatum. See *Begonia heracleifolia*.

Euphorbia. Spurge, or Milkwort. (Named after *Euphorbus*, physician to the king of Mauritania. Nat. ord., *Euphorbiaceae*.)

The unripe seed-pods of *E. lathyra* are the British capers. A large family of stove, greenhouse, or hardy trees, shrubs, and herbs, differing widely in their habits. Hardy annuals may be sown in the open border, in April; but, with the exception of *plumosa* and a few more, the rest are not worth growing. 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, *amygdaloides* and *characias*, both of which, and especially the latter, do well for rock-work. *E. spinosa*, from the south of Europe, is also hardy, and a useful rock-plant.

HARDY ANNUALS.

- E. globosa*. 1. July. 1818. B. M. t. 2624
— neapolitana. 1½. July. Naples. 1816.
— plumosa. July. 1816.
— rubra. ½. June. France 1818.
— serpyllifolia. ¾. July. S. Amer. 1817.
— taurica. 1. June. Tauria. 1820.
— variegata. September. Louisiana. 1811. B. M. t. 1747.

STOVE ANNUALS.

- E. hiarta*. ½. July. E. Ind. 1818.
— ophthalmica. ¾. July. Rio Janeiro. 1824.
— scordifolia. ½. July. Africa. 1823. Jacq. Ic. t. 476.

GREENHOUSE EVERGREENS.

- E. aphylla*. 1½. Teneriffe. 1815.
 — *a'pios*. ½. July. Candia. 1596.
 — *a'tro-purpu'rea*. 3. July. Teneriffe. 1815.
 B. M. t. 3321.
 — *balsami'fera*. June. Canaries. 1779.
 — *fruticosa*. 1. June. Sicily. 1824.
 — *imbricat'a*. 1. August. Portugal. 1804.
 — *la'eta*. 1. June. 1768.
 — *nummulariaefolia*. ½. July. 1800.
 — *ornithopus*. 1. July. Cape of Good Hope. 1816.
 — *spathulifolia*. 2. August. 1800.
 — *spinos'a*. 2. June. Levant. 1710. Sibth. Fl. Gr. t. 463.

GREENHOUSE HERBACEOUS.

- E. ale'ppica*. 1. July. Europe. 1820.
 — *erythri'na*. 1. July. Cape of Good Hope. 1823.
 — *marginata*. 1. June. S. Amer. 1824.
 — *purvisifolia*. 2. August. 1799. Biennial. Jacq. H. Schœnb. t. 277.
 — *serrata*. 1. July. South Europe. 1710. Jacq. Ic. t. 483.

STOVE EVERGREENS.

- E. anacampseroides*. 1. S. Amer.
 — *antiquorun*. 9. April. E. Ind. 1768.
 — *biglandulosa*. 3. Bourbon. 1808.
 — *Bojeri*. 4. Scarlet. November. Madagascar. B. M. t. 3527.
 — *bracteata*. 1½. August. 1809. Jacq. H. Schœnb. t. 276.
 — *bryoni*. Scarlet.
 — *bupleurifolia*. 1½. August. Cape of Good Hope. 1793. Jacq. H. Schœnb. t. 106.
 — *cærulea*. 3. June. Cape of Good Hope. 1824.
 — *canariensis*. 20. July. Canaries. 1697.
 — *caput Medusæ*. 2. August. Africa. 1731. B. C. t. 1315.
 — — *pu'nila*. 1. August. Cape of Good Hope. 1768.
 — *cereifolmis*. 2. April. Cape of Good Hope. 1731.
 — *Commelin*. August. Africa. 1805.
 — *corollata* is a synonym of *Poinsettia pulcherrima*, var. *albida*.
 — *crispa*. ½. July. Cape of Good Hope. 1819.
 — *cucumerina*. ½. June. Cape of Good Hope.
 — *ennea'gona*. 3. June. Cape of Good Hope. 1790.
 — *fructu-spir'na*. ¾. August. Cape of Good Hope. 1731.
 — — *geminata*. ½. August. Cape of Good Hope. 1731.
 — *fulgens*. 4. Scarlet. August. Mexico. 1836. Paxt. Mag. iv. p. 31.
 — *grandidens*. 5. July. Cape of Good Hope. 1823.
 — *grandifolia*. 6. Sierra Leone. 1789.
 — *Haworthii*. 1. May. Cape of Good Hope. 1800.
 — *heptagona*. 3. September. Cape of Good Hope. 1731.
 — — *rubra*. 4. September. Cape of Good Hope. 1731.
 — *heterophylla*. 1. Purple. July. Mexico.
 — *hystrica*. 6. July. Cape of Good Hope. 1695. Jacq. H. Schœnb. t. 207.
 — *la'ctea*. 4. July. E. Ind. 1804.
 — *Lamarckii*. 1½. July. Cape of Good Hope. 1808.
 — *laurifolia*. 2. Peru. 1820.
 — *linearis*. July. Vera Cruz. 1824.
 — *linifolia*. 2. W. Ind. 1774. Jacq. Ic. t. 86.
 — *lophogona*. 3. Madagascar. 1824. B. C. t. 1477.
 — *magnimamma*. 3. Mexico. 1823.
 — *mammillaris*. 2. July. Cape of Good Hope. 1759.

- E. melastomifolia*. ¾. July. Cape of Good Hope. 1774. Andr. Rep. t. 617.
 — *Monte'roi*. Green. S.W. Africa. 1865.
 — *myrtifolia*. 2. July. Cape of Good Hope. 1899.
 — *odontophylla*. 5. Cape of Good Hope. 1824.
 — *officinorum*. 6. June. Africa. 1597.
 — *oxyle'gia*. 3. Green, yellow. S. Africa. 1862.
 — *pe'ndula*. 1. 1808.
 — *pitulifera*. 1-3. Green. Tropical America. 1870. Syn., *E. geniculata* of some gardens.
 — *plumerioides*. Bracts scarlet. Java. 1874.
 — *practimbena*. ½. August. Cape of Good Hope. 1768.
 — *pugnifolmis*. ½. Green, orange. S. Africa. 1862.
 — *punicæ*. 6. April. Jamaica. 1778. B. M. t. 1961.
 — *repanda*. 2. August. E. Ind. 1808.
 — *splendens*. 4. Scarlet. June. Isle of France. 1826. B. M. t. 2902.
 — *squarrosa*. ½.
 — *stygi'na*. Yellowish. Azores. 1865.
 — *tetragona*. 4.
 — *tuberosa*. ¾. July. Cape of Good Hope. 1808.
 — *uncinata*. ¾. July. Cape of Good Hope. 1794.
 — *verticillata*. August. W. Ind. 1826.

HARDY EVERGREENS.

- E. amygdaloides*. 2. April. England.
 — — *variegata*. 2. March. Britain.
 — *characias*. 4. April. England.
 — *dendroides*. ½. July. Italy. 1768.

HARDY HERBACEOUS.

- E. angustifolia*. 1. Yellow. July. Trinidad. 1827.
 — *atlantica*. 1. June. South Europe. 1818.
 — *biumbellata*. 1. Barbary. 1780.
 — *cespitosa*. ¾. July. Italy. 1820.
 — *Cordia'na*. 1. May. South Europe. 1824.
 — *denticulata*. 1. June. South Europe. 1810.
 — *du'lcis*. 1. July. South Europe. 1759. Sibth. Fl. Gr. t. 464.
 — *flavicomis*. 1½. July. South France. 1820.
 — *longifolia*. 1. June. Nepal. 1823.
 — *multicorymbosa*. 1. July. 1805.
 — *portlandica*. ¾. Britain. Jacq. H. Schœnb. t. 487.
 — *purpurata*. 1. June. France. 1820.
 — *trunca'ta*. July. South Europe. 1820.
 — *Valeria'næ*. July. Siberia. 1813.
 — *villo'sa*. 2. June. Hungary. 1820.

Eupho'ria. See **Nephelium.**

Euphra'sia. Eyebright. (From *euphrasino*, to delight; fabled to cure blindness. Nat. ord., *Scrophulariaceæ*; Tribe, *Euphrasiacæ*. Allied to *Bartsia*.) Hardy annuals. Seeds, in March or April, in the open border.

- E. alpi'na*. 1. Purple. July. Tasmania. 1827.
 — *linifolia*. ¾. Purple. August. France. 1826.
 — *lu'tea*. 1½. Purple. August. South Europe. 1816. Syns., *Bartsia lutea* and *Odontites lutea*.

Eupodium. (From *eu*, well, and *pous*, a foot; referring to the fleshy frond-stalks. Nat. ord., *Filices*—*Polypodiaceæ*.)

- Stove fern. See **FERNs.**
E. Kaulfussii. 2. Brazil.

Eupoma'tia. (From *eu*, well, and *poma*, a lid; the calyptra covering the

unexpanded flower like an extinguisher. Nat. ord., *Anonaceæ*; Tribe, *Miliuseæ*.)

Greenhouse evergreen shrub. Seeds in a slight hotbed, in spring; cuttings of ripened shoots in sand, under a bell-glass; sandy peat and fibry loam.

E. Benettii. 4. Greenish-yellow. Port Jackson. 1824. Syn., *E. taurina* of B. M. t. 4848, but not elsewhere.

Eu'rya. (From *eurys*, large; referring to the flowers. Nat. ord., *Ternströmia*; Tribe, *Ternströmieæ*. 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 fibry, with a portion of silver-sand.

E. angustifolia. Leaves creamy-edged. Japan. 1862.

— *chinensis*. 2. White. June. China. 1823.

— *Jacquemartii*. Japan. 1869. Rev. Hort. 1869, p. 369.

— *japonica*. Greenish. Japan.

— *latifolia variegata*. Leaves variegated with white. Japan. 1861.

— *multiflora*. 2. White. Nepal. 1823.

— *vitiensis*. Green. Fiji. 1887.

Eury'ale. (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., *Nymphaeaceæ*; Tribe, *Nymphaeæ*. 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; loamy soil, in a tub set in water, and kept at a high temperature.

E. amazónica. See *Victoria regia*.

— *féroce*. Red. August. India. 1809. B. M. t. 1447. Syn., *Annesia spinosa*.

Eury'angium *Sa'mbul*. See **Ferula**.

Eury'bia. (From *euribies*, wide-spreading; referring to the roots. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*.) See **Olearia**.

Eu'rycles. (From *eurys*, broad, and *klas*, a branch; referring to the broad leaves or branch-like footstalks. Nat. ord., *Amaryllidææ*. 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.

E. Cunninghamii. 1. White. Summer. Queensland. 1824.

— *syve stris*. 1-1½. White. August. Malaya to N. Australia. 1759. Syns., *E. ambonensis*, *E. australasica*, *Paneratium amboinense*, B. M. t. 1419 and *P. australasicum*. B. R. t. 715.

Eury'coma. (From *eurys*, large, and *kome*, a head of hair; in reference to fringe-like hairs on the ovary. Nat. ord., *Connaraceæ*.)

Stove evergreen. For culture, see **CONNARUS** *E. longifolia*. 20. Purple. Sumatra. 1826.

Euryga'nia. (Named after *Eurygania*, the wife of *Oedipus*. Nat. ord., *Vaccineæ*; Tribe, *Thibaudieæ*.)

Stove evergreen shrub, requiring the same treatment as **THIBAUDIA**, to which it is allied.

E. ova'ta. Crimson. July. Peru. 1878. B. M. t. 6393.

Eusca'phis. (From *eu*, beautiful, and *scaphis*, cup; the fruit has the remains of the calyx forming a cup at its base. Nat. ord., *Sapindaceæ*.)

Pretty hardy shrub; seeds, or cuttings; garden-coil.

E. staphyleoides. White. Fruit dark red. Japan. 1889.

Euste'gia. (From *eu*, good, and *steges*, a covering; referring to the bracts. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynancheæ*. Allied to *Peplonia*.)

Greenhouse evergreen trailer. Cuttings in sandy soil, and by trailing runners; peat and loam.

E. hastata. 1. White. July. Cape of Good Hope. 1816.

Eusto'ma. (From *eustoma*, a beautiful mouth; referring to the opening of the flower. Nat. ord., *Gentianeæ*; Tribe, *Chironieæ*. 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. exaltatum* by division, and cool greenhouse treatment.

E. exaltatum. 2. Purple. July. Mexico. 1804. Greenhouse herbaceous. B. R. 1845, t. 13. Syns., *E. silenifolium* and *Listanthus glaucifolius*. Jacq. Ic. t. 33.

— *Russellianum*. Purple. August. Texas. 1835.

— Hardy biennial. Syn., *Lisianthus Russellianus*. B. M. t. 3626.

— *silenifolium*. See *E. exaltatum*.

Eustre'phus. (From *eu*, good, and *strephe*, to twine; literally, beautiful twiners. Nat. ord., *Liliaceæ*; Tribe, *Luzuriageæ*. 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. angustifolius. 3. July. 1820.

— *Brownii*. A synonym of *E. latifolius*.

— *latifolius*. 3. June. 1800. B. M. t. 1245.

Euta'cta. A synonym of **Araucaria**.

E. Muellerii. See *Araucaria Muellerii*.

— *Ru'lei*. See *Araucaria Ruiei*.

Euta'xia. (From *eutaxia*, modesty; referring to the delicate aspect of the flowers. Nat. ord., *Leguminosæ*; Tribe, *Podalyrieæ*. 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. *E. myrtilloïda*, with a little protection, will do against a wall near London.

- E. Baate'ri*. 6. Yellow. 1830. Kn. and West. t. 43. Perhaps synonymous with *Oxylobium scandens*.
 — *myrtifolia*. 1½. Orange. August. 1803.
 — *pu'ngens*. Paxt. Mag. iii. p. 245. See *Dillwynia pungens*.

Eute'rpe. (After *Euterpe*, one of the nine Muses. Nat. ord., *Palmææ*; Tribe, *Areceæ*. Allied to *Areca*.)

Elegant tall growing stove palms. Seeds; rich loam.

- E. caribæa*. 30. W. Ind. 1656.
 — *e'dulis*. 100. Brazil. 1841.
 — *globo'sa*. 30. Mauritius. 1819.
 — *monta'na*. Yellow. Grenada. 1815.
 — *olera'cea*. 100. Brazil. 1847.

Eutha'les. (From *eu*, well, and *thaleo*, to push or sprout. Nat. ord., *Goodeniaceæ*.) United to **Velleia**.

- E. macrophylla*. B. R. 1841, t. 3. See *Velleia macrophylla*.
 — *trine'rois*. See *Velleia trinervis*.

Eutha'mia. See **Solidago**.

Euto'ca. (From *eutokos*, fruitful; referring to the abundance of seeds. Nat. ord., *Hydrophyllaceæ*; Tribe, *Phaceliæ*.) United to **Phacelia**.

- E. divaricata*. B. M. t. 3706. See *Phacelia divaricata*.
 — *Frankli'nii*. B. M. t. 2985. See *Phacelia Franklinii*.
 — *grandifl'ra*. See *Phacelia grandiflora*.
 — *Menziesii*. B. M. t. 3762. See *Phacelia Menziesii*.
 — *multifl'ra*. B. M. t. 1180. See *Phacelia Menziesii*.
 — *parvifl'ra*. See *Phacelia parviflora*.
 — *sericea*. B. M. t. 3003. See *Phacelia sericea*.
 — *viscida*. B. M. t. 3572. See *Phacelia viscida*.
 — *Wrange'lia'na*. Svt. Fl. Gard. ser. 2, t. 362. See *Phacelia divaricata*.

Euxe'nia. (From *eu*, beautiful, and *xenos*, a stranger. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. United to **Podanthus**.)

- E. gra'ta*. See *Podanthus ovatifolius*.

Eu'xolus. See **Amaranthus**.

- E. lineatus*. See *Amaranthus lanceafolius*.

Evely'na. (Named after *John Evelyn*, our first good writer on trees, etc. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Calogyneæ*.) See **Elleanthus**.

Evening Flower. *He'sperus*.

Evening Primrose. *Enothe'ra*.

Evergreens are such plants as do not shed all their leaves at any one time during the year.

Evergreen Thorn. *Crata'gus pyraca'ntha*.

Everlasting Flower. *Gnapha'livum*.

Everlasting Pea. *La'thyrus latifolius*.

Evo'dia. (From *evodia*, sweet scent;

referring to that of the leaves. Nat. ord., *Rutaceæ*; Tribe, *Zanthoxyleæ*. Allied to *Medicosa*.)

Stove evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat, in April; light, fibry loam.

- E. triphy'lla*. 7. White. Amboina. 1821. Syn., *Xanthoxylon pteleafolium*.

Evo'lulus. (From *evolvere*, the opposite to *Convolvulus*; referring to the plants not twining. Nat. ord., *Convolvulaceæ*; Tribe, *Convolvuleæ*. Allied to *Convolvulus*.)

For culture, see **CONVOLVULUS**. All blue-flowered trailers, except where otherwise specified.

HARDY ANNUAL.

- E. arge'nteus*. ½. July. N. Amer. 1824. Syn., *E. Nuttallianus*.

STOVE EVERGREENS.

- E. cæru'leus*. Blue. July. Jamaica. 1845.
 — *lanceola'tus*. See *E. villosus*.
 — *latifo'lius*. 2. White. June. Brazil. 1819. B. R. t. 401.
 — *purpu'reo-cæru'leus*. 1½. July. Jamaica. 1845. B. M. t. 4202.
 — *villo'sus*. 1. July. S. Amer. 1810. Syn., *E. lanceolatus*.

STOVE ANNUALS.

- E. alsino'des*. ½. July. E. Ind. 1817.
 — *emargina'tus* and *gangeticus*. See *Ipomœa reniformis*.
 — *hireu'tus*. ½. July. E. Ind. 1818.
 — *inca'rus*. ½. July. S. Amer. 1810.
 — *linifo'lius*. 2. August. Jamaica. 1732.
 — *nummula'ris*. ¾. September. Jamaica. 1816.
 — *sericeus*. ½. White. July. W. Ind. 1816.

Evo'nymus. See **Euonymus**.

Evo'smus. See **Laurus**.

Exacum. (From *ex*, out of, and *ago*, to drive; supposed virtue of expelling poison. Nat. ord., *Gentianaceæ*; Tribe, *Exaceæ*.)

Stove or greenhouse annuals, or perennials. Seeds; cuttings under a bell-glass. Peat and turfy loam.

- E. affi'ne*. ½. Violet-purple, yellow. February. Socotra. 1881. Gf. f. 1103.
 — *macra'nthum*. 1½. Purple. December. Ceylon. 1853.
 — *pulche'llum*. See *Cicendia pulchella*.
 — *tetrage'num*. 1½. Blue. August. Nepal. 1820.
 — — *bicolor*. 1. Pale purple. June. Corcan. 1846.
 — *visco'sum*. See *Ixanthus viscosus*.
 — *zeyla'nicum*. Blue. September. Ceylon. 1848. Syn., *Chironia trinervis*. Paxt. Mag. iii. p. 149.

Excæca'ria. (From *excæco*, to blind; the juice and smoke of burning branches injure the eye-sight. Nat. ord., *Euphorbiaceæ*; Tribe, *Crotonææ*. Allied to *Gnossia* and *Hippomane*.)

Stove evergreen shrubs, with white flowers; cuttings in sandy soil, under a bell-glass, in spring or autumn; fibry, sandy loam.

- E. Agallo'cha*. 5. May. E. Ind. 1820.
 — *glandulo'sa*. 5. May. Jamaica. 1821.
 — *serra'ta*. 6. May. Chili. 1796.

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 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 pratense* and *Alopecu'rus genicula'tus*, and is evidently a wise provision of a nature to secure the propagation of the species, for those bulbs 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*, fruit. Nat. ord., *Santala'ceæ*.)

E. cypressifo'rmis. Gfl. 1888, p. 288, f. 60.

Exocho'rda. (From *exo*, outside, and *chorde*, a cord; referring to the placentas. Nat. ord., *Rosaceæ*; Tribe, *Spira'ceæ*.)

Very handsome hardy deciduous shrub; seeds, cuttings; light sandy soil.

E. grandifo'ra. 6. White. May. N. China. Syn., *Spira'ceæ grandiflora.* B. M. t. 4795.

E'xogens. An old name for *Dicotyledons*.

Exogo'nium. (From *exo*, external, and *gonu*, a joint; referring to the stems. Nat. ord., *Convulvulaceæ*; Tribe, *Convulvuleæ*.) United to **Ipomœa**.

E. filifo'rme. See *Ipomœa filiformis*.
— *pur'ga.* B. M. t. 4280. See *Ipomœa purga*.
— *repandum.* See *Ipomœa repandum*.

Exoste'mma. (From *exo*, external, and *stemma*, a crown; referring to the flower-heads. Nat. ord., *Rubiaceæ*; Tribe, *Cinchoneæ*. Allied to *Luculia*.)

Stove evergreen tree. Cuttings of ripe young shoots in sand, under a glass, in bottom-heat; loam and peat.

E. longifo'rum. 30. White. June. Caraccas. 1820. B. M. t. 4186.

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 intrusception 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.

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. Heat attended by dryness of the soil, as during the drought of summer, is very liable to produce an unnatural exudation. This is especially noticeable upon the leaves of some plants, and is

popularly known as *honey-dew*. It is somewhat analogous to that outburst of blood, which in such seasons is apt to occur to man, and arises from the increased action of the secretory and circulatory system to which it affords relief. There is this great and essential difference, that, in the case of plants, the extravasation is upon the surface of the leaves, and in proportion, consequently, to the abundance of the extruded sap are their respiration and digestion impaired.

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, either preventing the too rapid secretion of sap, stimulating it in promoting its regular formation, or preserving its fluidity; and that by such a treatment the honey-dew may be entirely prevented, we have often witnessed when experimentalizing 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. *Euphrasia*.

Eysenhardtia. (Named after Eysenhardt, a Prussian botanist. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. Allied to *Amorpha*.)

Half-hardy evergreen shrub; cuttings of young shoots in sand, in bottom-heat, in April or May; loam and peat.

E. amorphoides. 15. Pale yellow. June. Mexico. 1838.

F.

Faba. Garden Bean. (From *phago*, to eat. Nat. ord., *Leguminosæ*. United to *Vicia*.)

F. vulgaris. See *Vicia Faba*.

Faba'go. See *Zygophyllum*.

Fabia'na. (Named after *F. Fabiano*, a Spaniard. Nat. ord., *Solanaceæ*; Tribe, *Cestrineæ*. 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.

F. imbricata. 3. White. May. Chili. 1838. B. R. 1839, t. 59.

Fabricia. (Named after Fabricius, a Swedish naturalist. Nat. ord., *Myrtaceæ*. United to *Leptospermum*.)

F. laevigata. B. M. t. 1304. See *Leptospermum laevigatum*.

— *myrtifolia*. See *Leptospermum Fabricia*.

— *stricta*. 2. June. W. Australia. 1827. B. C. t. 1219. A synonym of *Agonis marginata*.

Fadye'nia. (Named after Dr. Fadyen, author of a Flora of Jamaica. Nat. ord., *Filices*. Allied to *Aspidium*.)

This must not be confounded with Endlicher's *Fadye'nia*, which belongs to *Garryaceæ*. Stove Fern. Division; loam and peat. See *FERNs*.

F. prolifera. 4. Brown. May. Jamaica. 1843.

Faga'ra. See *Zanthoxylum*.

Fage'lia. (Named after Fagel, a botanist. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Cajanus*.)

An ornamental 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.

F. bituminosa. 4. Yellowish-purple. June. S. W. Africa. 1774. Syn., *Glycine bituminosa*. B. R. t. 261.

Fagopy'rum. Buck wheat. (From *phago*, to eat, and *pyren*, a kernel; referring to the triangular kernel of the nut. Nat. ord., *Polygonaceæ*; Tribe, *Eupolygonææ*. Allied to *Polygonum*.)

Hardy annuals. Seed in April. Common soil.

F. cymosum. Pink. July. Nepal. 1827. B. R. 1846, t. 26.

— *esculentum*. 2-3. Pink. Summer. Central Asia.

Fagræ'a. (Named after Dr. Fagræus. Nat. ord., *Loganiaceæ*; Tribe, *Euloganiææ*. Allied to *Logania*.)

Loganiads stand foremost among the most deadly poisons in the vegetable kingdom. Ornamental stove evergreen trees or shrubs. Cuttings of young shoots beginning to get firm, in April, in sand, under a bell-glass, and in bottom-heat, peat and loam.

- F. auriculata*. Yellow. Singapore.
 — *imperialis*. Sumatra. 1866.
 — *lancoleta*. White. Java. Fl. Ser. t. 1025.
 — *obovata*. 20. White. Silhet. 1816.
 — *zeylanica*. 12. White. Ceylon. 1816.

Fa'gus. The Beech. (From *phago*, to eat; referring to the edible seeds. Nat. ord., *Cupuliferae*; Tribe, *Quercinæ*.)

Handsome evergreen, or deciduous, hardy trees or shrubs, 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, etc., 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 morel and the truffle are chiefly found under beeches.

EVERGREENS.

- F. betuloides*. 50. Magellan. 1830. Hardy.
 — *Cunninghamii*. New Zealand. 1843. Half-hardy.
 — *obliqua*. 50. Chili.

HARDY DECIDUOUS.

- F. antartica*. 50. Magellan. 1830.
 — *castanea*. See *Castanea vulgaris*.
 — *castanefolia*. June. N. Amer.
 — *comptoniaefolia*. May.
 — *ferruginea*. 30. June. N. Amer. 1766.
 — *caroliniana*. Carolina.
 — *purpurea*. April. Germany.
 — *roseo-marginata*. Young leaves edged with pink. 1838.
 — *syriaca*. 70. June. Britain.
 — *americana*. 100. May. N. Amer.
 — *asplenifolia*.
 — *atro-rubens*. 30. June.
 — *conglomerata* *Banarille'ri*. Garden variety. 1838.
 — *cristata*. 30. May.
 — *cuprea*. 70. May.
 — *foliis argenteis*. May.
 — *foliis aureis*. June.
 — *heterophylla*. 40. April, May.
 — *incisa*. 10. June.
 — *pendula*. May. Gardens.

Fairy rings, which occur as darker circles in grass, are produced by a peculiar mode of growth of certain fungi, e.g., *Agaricus arvensis*, *Marasmius oreades*, etc. The darker part is due to a luxuriant growth of the grass, through a copious supply of nitrogenous matter afforded by the decay of the fungi. On the outer side of the ring the grass presents a somewhat scorched appearance, owing to its having been exhausted by the fungi, the next crop of which will appear outside this ring, and continue to spread in subsequent years.

Falkia. (Named after *Falk*, a Swedish botanist. Nat. ord., *Convolvulaceæ*; Tribe, *Dichondrææ*.)

Greenhouse evergreen creeper. Cuttings under a hand-glass, in sandy peat, in April or May; peat and loam.

- F. repens*. 4. Pink. July. Cape of Good Hope. 1774. B. M. t. 2228.

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 rootlets, and are therefore in a state of slow but continual winter 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 exuvia, 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. (After *Fallugius*, a Florentine botanist of the seventeenth century. Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*.)

A handsome, half-hardy, erect, branched shrub. Seeds, cuttings, sandy loam.

- F. paradoxa*. 2-4. White. July. New Mexico. 1877. B. M. t. 6660. Syn., *Stevensia paradoxa*.

Fan Palm. *Cory'pha*.

Farada'ya. (In honour of *Prof.*

Faraday. Nat. ord., *Verbenaceæ*; Tribe, *Viticeæ*.)

Stove climbers. Seeds, cuttings, rich sandy loam.

F. papua'na. White. Java. 1884.

— *spé'náida*. White. Fragrant. Australia. 1890.

Faramea. (The derivation has not been explained; probably a commemorative one. Nat. ord., *Rubiaceæ*; Tribe, *Coussarea*. 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 fibry, with silver-sand, and lumps of charcoal. *F. odoratí'ssima*. 6. White. W. Ind. 1793.

Farfugium gra'nde. See **Senecio Kemptferi**, var. *aureo-maculata*.

Farina, a name for the pollen or fertilizing dust produced by the anthers, or male organs, of a flower.

Farm-yard Manure. See **Dung**.

Farse'tia. (Named after *Farseti*, an Italian botanist. Nat. ord., *Cruciferae*; Tribe, *Alyssineæ*. Allied to *Alyssum*.)

Hardy or half-hardy annual and perennial herbs or sub-shrubs. Annuals in open border in April. 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. 1. Yellow. July. Levant. 1818. Annual. Syn., *Alyssum cheiranthifolium*.

— *clypea'ta*. 1½. Yellow. July. South Europe. 1596. Herbaceous perennial.

HALF-HARDY EVERGREENS.

F. ægypti'aca. 1. White, purple. July. Egypt. 1788. Syn., *E. cheiranthoides*.

— *erica'arpa*. 1. Yellow. July. Greece. 1820.

— *lunaro'des*. 1. Yellow. July. Grecian Archipelago. 1731. B. M. t. 3087.

— *suffrutico'sa*. 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, or to bundles of leaves, as in the Larch.

Fa'tsia. (From *Fatsi*, the Japanese name of *F. japonica*. Nat. ord., *Araliaceæ*.)

Half-hardy shrubs or small trees. Seeds, cuttings. Good light soil. The celebrated rice paper of the Chinese is made from the pith of *F. papyrifera*; a cylinder of the pith is taken, and very thin sheets cut from its circumference with a large knife, the cylinder being dexterously turned round with the fingers whilst cutting.

F. ho'rrida. 6-12. Stem armed with yellow spines. N.W. America. 1829. Hardy. Syn., *Panax horridum*.

— *japo'nica*. White. Japan. 1858. Gf. t. 420. Syns., *Aralia japonica* and *A. Sieboldii*.

— — *aureo-margina'ta*. Golden-margined var.

E. japo'nica aureo-reticula'ta. Leaves with yellow veins. 1870.

— *papyrifera*. 7. Greenish. Formosa. 1852. B. M. t. 4897. Syn., *Aralia papyrifera*. Rice paper tree.

Feaberry. A local name for the Gooseberry.

Feathers. See **Animal Matters**.

Fé'dia. (A word of unknown origin. Nat. ord., *Valerianaceæ*. Allied to *Centranthus*.)

Hardy annuals. Seeds in the open border, in April.

F. cornuco'picæ. 1. Red. July. South Europe. 1796. Syn., *Valeriana cornucopieæ*. B. R. t. 155.

— — *floribú'nda ple'na*. Pink. Double flowered. Gf. t. 1218.

— *gracilifo'ra*. ½. Pink. July. Algiers.

— *rupe'stris*. See *Patrinia rupestris*.

Fée'a. (In honour of *M. Fée*, Professor of Botany at Strasburg. Nat. ord., *Filices—Polypodiaceæ*. Allied to *Trichomanes*.)

Stove ferns. See **FERNs**.

F. na'na. Guiana.

— *spica'ta*. W. Indies.

Feli'cia. (From *felix*, happy; from their cheerful appearance. Nat. ord., *Compositæ*; Tribe, *Asteroidææ*. Syn., *Agathæa*. Allied to *Aster*.)

Natives of the Cape of Good Hope. 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 ANNUAL.

F. tene'lla. Violet. June. 1759. Syn., *Aster tenellus*, B. R. t. 33.

GREENHOUSE EVERGREENS.

F. angustifo'lia. 4. Lilac. May. 1812. Syns., *angustifolius*, Jacq. H. Schomb. t. 370, and *Aster conyzoides*.

— — *glabra*. 6. Blue. May. 1804.

— *china'ta*. Yellow. May. 1820.

— *frutico'sa*. 1-2. Purple. May. Syn., *Aster fruticosus*. B. M. t. 2718.

— *refe'za*. Red, white. February. 1759. Syn., *Aster reflexus*. B. M. t. 884.

— *villo'sa*. 4. White. May. 1812. Syn., *Aster villosus*.

Felwort. *Swe'rtia*.

Female Fern. *Asplénium filix-fœ'mina*.

Fences are employed to mark the boundary of property, to exclude trespassers, 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. (After *Mr. Fendler*, a botanical collector in Trinidad. Nat. ord., *Saxifrageæ*.)

Hardy or half-hardy shrub. It will be better

for the protection of a wall. Garden-soil, seeds, and cuttings or layers.

F. rupicola. 2-4. White. Mexico. 1888.

Fennel. (*Feniculum vulgare*.) In a dry soil it is longest-lived. It is propagated both by off-sets, partings of the root, and by seeds, 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. *Nigella*.

Fenugreek. *Trigonella*.

Fenzlia. See *Gilia*.

Ferdina'ndea superba. See *Crescentia macrocarpa*.

Fernandezia. (After Fernandez, a Spaniard. Nat. ord., *Orchidæe*.) See *Lockhartia*.

F. acuta. B. R. t. 1806. See *Lockhartia acuta*.
— *elegans*. B. C. t. 1214. See *Lockhartia elegans*.
— *robusta*. B. M. t. 5592. See *Lockhartia verrucosa*.

Fernelia. (Named after J. Fernel, a French physician. Nat. ord., *Rubiaceæ*; Tribe, *Gardenieæ*. Allied to *Oxyanthus*.)

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.

F. buxifolia. Isle of France. 1816.
— *obovata*. Isle of France. 1816.

Ferns are flowerless plants (*Cryptogams*) furnished with fibro-vascular bundles, and vary in size from an inch high to that of a small tree, and in texture from a thin film to leathery. The stems are often creeping, and then termed *rhizomes*. The leaves, generally on a stalk (*stipe*) are known as *fronds*, and may be simple (e.g., *Asplenium Nidus*) or divided. The primary divisions are known as *pinnæ*, the ultimate

as *pinnules*. On the back of the fronds are borne clusters (*sori*) of *sporangia*, containing *spores*, sometimes they are naked (e.g., *Polypodium*), but more often covered by a scale (*indusium*), the shape of which has been used as a character to distinguish the various genera. In *Hymenophyllum* the spores are in cups at the tips of the pinnules. The spores when sown germinate, and produce a small membranous *prothallium*, bearing sexual organs (*antheridia* and *archegonia*), from the female of which, after fertilization, a new fern plant arises. In some cases (e.g., *Asplenium bulbiferum*) young plants are produced in a bud-like manner from the frond itself.

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 *Pteris palma'ta*, *P. effusa*, *Dare'a rhizophyllum*, and *Woodwardia radicans*.

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 sand stone, 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 Ferns 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.

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 thrip 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 offsets 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 *Woodsia ilvensis* 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 seed be scattered upon them, and then be covered with a hand-glass, the seed 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 circum-

stances 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., *Rutaceæ*; Tribe, *Auranticeæ*.)

The young leaves, when bruised, are said to be deliciously fragrant; the wood and flowers 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.

F. elephantum. 4. Blush. April. India up to the Tropical Himalayas. 1804. Wight Ic. t. 15.

Ferra'ria. (Named after *Ferrara*, an Italian botanist. Nat. ord., *Irideæ*. 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 possibly be grown in the open ground.

F. angustifolia. Swt. Hort. Brit. t. 499. A variety of *F. Ferrariola*.

— *antherosa.* B. M. t. 751. See *F. Ferrariola*.

— *atra'ta.* †. Dark purple. June. B. C. t. 1356.

— *divaricata.* †. Brown. June. 1826. Swt.

Fl. Gard. t. 192.

— *elongata.* Dark purple. July. Monte Video.

1828.

— *Ferrari'ola.* †. Greenish-brown. Summer.

1800. Red. Lil. t. 484. Syns., *F. antherosa*,

F. viridiflora, Andr. Rep. t. 285, and

Morcea Ferrariola, Jacq. H. Schenb.

t. 456.

— *angustifolia.* †. Brown. June. 1825.

Syn., *F. angustifolia*.

— *obtusifolia.* †. Brown. June. 1825. Swt.

Fl. Gard. t. 148.

— *præ'onia* and *Tigri'dia.* See *Tigridia*.

— *tricus'pis.* See *Vieuseuxia tricuspis*.

— *uncina'ta.* †. Brown. June. 1825. Swt.

Fl. Gard. t. 161.

— *undula'ta.* †. Green, brown. April. 1775.

B. M. t. 144.

Ferre'ola buxifo'lia. Wight Ic. t. 763. See *Maba buxifolia*.

Fer'ula. Giant Fennel. (Pliny's name for this plant. Nat. ord., *Umbellifereæ*; Tribe, *Peucedaneæ*. 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 asafoetida from the milky juice of some of the species, etc. Hardy herbaceous perennials, with yellow flowers, except where otherwise specified. Seed in spring; common garden-soil.

F. ammoni'aca. 6. White. June. Persia. 1831.

— *asafe'tida.* 7. July. Persia.

— *au'rea.* See *Peucedanum aureum*. B. R.

‡ 559.

— *campe'stris.* 3. June. Tauria. 1829.

— *capilla'ris.* 4. June. Spain. 1820.

— *ca'spica.* 3. July. Caucasus. 1819.

— *commu'nis.* 13. July. South Europe. 1597.

— *Feru'lago.* 6. July. South Europe. Syn.,

F. nodiflora.

— *foetidi'ssima.* Yellowish-white. Turkestan.

1878.

— *glar'ca.* 8. July. Italy. 1596.

— *longifolia.* 4. July. Siberia. 1820. Syno-

nymous with *Eriosynape longifolia*.

— *mei'des.* See *Lophosciadium millefolium*.

— *Nar'thez.* 6-8. Green. July. Orient.

— *nu'da.* 1. July. Siberia. 1821.

— *nudica'ulis.* January. Sicily. 1825.

— *obtusifolia.* 1. Green. July. Greece. 1819.

— *orienta'lis.* 3. July. Levant. 1759.

— *parucij'u'ga.* 1‡. June. Persia. 1830.

— *pe'r'sica.* 6. August. Persia. 1782. B. M.

t. 2096.

— *pube'scens.* 1. July. Siberia. 1820.

— *Su'mbul.* 9. Yellow. Summer. Turkestan.

1872. B. M. t. 6196. Syn., *Euryangium*

Sumbul.

— *sibi'rica.* See *Peucedanum sibiricum*.

— *songa'rica.* August. Siberia. 1825.

— *stri'cta.* 2. July. Cape of Good Hope. 1818.

— *syba'tica.* 3. June. Podolia. 1829.

— *thyrsifl'ora.* 1‡. June. Candia. 1823. Sibth.

Fl. Gr. t. 280.

— *tingia'na.* 8. July. Barbary. 1639.

— *villo'sa.* 1. White. July. N. Amer. 1824.

A synonym of *Angelica triquinata*.

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. ovina*), and Hardish Fescue (*F. duriv'scula*). *F. cri-num-u'rsi* is an ornamental grass, about 3 inches high. Introduced in 1890.

Feverfew. *Pyre'thrum Parthenium*.

Feverwort. *Tric'ostem.*

Fevillea. (Named after *Louis Feuille*, a German botanist. Nat. ord., *Cucurbitaceæ*.)

A rampant evergreen stove climber. Seeds, sown in a hotbed; cuttings of the young wood in summer, inserted in sandy loam, in heat and under a bell-glass.

F. Moo'ri. Brick-red. Guiana? 1870. B. M. t. 6356.
— *pedata*. B. M. t. 2681. See *Telfairea pedata*.

Fica'ria. Pilewort. (From *ficus*, a fig; in reference to the fig-shaped little tubers of the root. Nat. ord., *Ranunculaceae*. United to *Ranunculus*.)

F. ranunculoïdes and *F. ve'rna*. See *Ranunculus Fica'ria*.

Ficus. 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., *Urticaceae*; Tribe, *Artocarpæ*.)

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 hobbed; peat and loam will suit them well, the latter should preponderate when compactness of growth is desirable. *F. elástica* is the India-rubber plant. *F. Ca'rica*, the cultivated fig, is the only one hardy enough to bear our climate. Most of the stove species will do in a warm greenhouse. See **FIG**.

HALF-HARDY.

F. Coop'e'ri. Leaves red-veined. Australia. 1862.
— *mi'nimus*. Is probably a form of *F. stipulata*. It is quite hardy.
— *stipula'ta*. China. 1721. Syn., *F. repens*. Creeping and rooting like ivy.
— *virga'ta*. N. India.

GREENHOUSE EVERGREENS.

F. cape'nsis. 4. Cape of Good Hope. 1816.
— *Ca'rica*. 15. June. South Europe. 1548. Deciduous. Common fig.
— *corda'ta*. 6. Cape of Good Hope. 1802.
— *diversifo'lia*. Leaves bright green, dotted with pale brown spots. G. C. 1881, xvi. p. 247.
— *macrophy'la*. 14. N. Holland.
— *pu'mila*. †. China. 1759. Trailer.
— *stipula'ta*. †. China. 1771. Creeper.

STOVE EVERGREENS.

F. acumina'ta. 6. Bright orange. Silhet. 1833. B. M. t. 3282.
— *amazo'nica*. Amazon and Rio Negro.
— *angustifo'lia*. 15. Guiana.
— *arbutifo'lia*. March. 1825.
— *a'spera*. 10. New Holland. 1820.
— *auranti'aca*. 10. 1824.
— *austra'lis*. Similar to *F. elástica*, but terminal buds green, not red.
— *barba'ta*. E. Indies. 1832. Creeping and rooting like ivy.
— *Benjami'na*. 10. E. Ind. 1757.
— *Bonne'ti*. 1869.
— *Cano'ni*. Society Islands. Syn., *Artocarpus Canoni*.
— *Cavro'ni*. Leaves dark green, with yellowish-white midrib. Brazil. 1887.
— *cerasifo'rnis*. E. Indies.
— *cestrifo'lia*. Brazil.
— *ocmo'sa*. 40. India. E. M. t. 3305.
— *coria'cea*. 10. E. Ind. 1772.

F. cornifo'lia. Java. 1846
— *corona'ta*. 6. June. 1800.
— *crassine'rvia*. 10. S. Amer. 1823.
— *dealba'ta*. Leaves silvery-haired. Peru. 1867. Syn., *Coussapoa dealbata*.
— *Dece'ni*. Peru. 1869.
— *du'mosa*. 6. 1825.
— *ebu'rnea*. Leaves with white veins India 1869. Syn., *F. philippinensis*.
— *ela'stica*. 20. E. Ind. 1815.
— *e'legans*. Java. 1871.
— *elli'ptica*. 20. S. Amer. 1824.
— *eribotryoïdes*.
— *exaspera'ta*. 6. Guinea.
— *exi'mia*. Brazil.
— *excu'lyta*. Polynesia. 1879.
— *ferrugi'nea*. S. America.
— *fu'va*. Brazil.
— *gardeniaefo'lia*. Brazil.
— *heterophy'lia*. 20. E. Indies. 1816.
— *Hook'e'ri*. 6. W. Ind. 1816.
— *infecto'ria*. 15. W. Ind. 1763.
— *leviga'ta*. 6. W. Ind. 1823.
— *leucto'ma*. 20. E. Ind. 1763.
— *Lichtenstet'ni*. 3. Cape of Good Hope 1824.
— *Loga'ni*. 20. Caraccas. 1824.
— *longifo'lia*. 20. E. Ind. 1825.
— *lute'scens*. Java.
— *macroca'rupa*. 25. Columbia. 1869.
— *macrophy'la*. Australia. 1869. The Moreton Bay Fig, or Australian Banyan.
— *microca'rupa*. Java.
— *myrtifo'lia*. 4. 1824.
— *ni'tida*. E. Indies.
— *ni'ua*. Philippine Islands.
— *nymphæofo'lia*. 10. E. Ind. 1759.
— *obtusifo'lia*. 20. Mexico. 1823.
— *oppositifo'lia*. 4. E. Ind. 1802. Syn., *F. scabra*.
— *ovoïdea*. Penang.
— *Parce'li*. Leaves variegated with white and green. Polynesia. 1874.
— *pertusa*. 8. S. Amer. 1780.
— *popu'lnæa*. 12. S. Amer. 1812.
— *Portea'na*. Philippines. 1864.
— *pri'nceps*. Brazil.
— *purpura'scens*. Java.
— *quercifo'lia*. Sumatra.
— *racemo'sa*. 4. E. Ind. 1759.
— *radi'cans*.
— *Reinwa'dtii*. Java.
— *religio'sa*. 25. E. Ind. 1781. Banyan-tree. There is a variety with yellow-edged leaves.
— *re'pens*. †. E. Ind. 1805. Creeper.
— *rhizoca'rupa*. Java. 1875. Syn., *Covellia rhizocarpa*.
— *Ro'e'zii*. S. America. 1876.
— *Rozbu'rgiï*. 20. Silhet.
— *rubigino'sa*. New South Wales. 1827 B. M. t. 2939.
— *rubine'rvia*. 10. Brazil. 1824.
— *sagitta'ta*. †. E. Ind. 1810. Creeper
— *salsifo'lia*. Assam.
— *scabra*. Jacq. H. Schœnb. t. 315. See *F. oppositifo'lia*.
— *scandens*. Silhet.
— *seta'cea*. July. India. 1825. Leaves three-lobed.
— *Suringa'ri*. Leaves red-veined. Amboyna. 1866.
— *syringæfo'lia*. Caraccas.
— *Thunbe'rgii*. Cape of Good Hope.
— *tincto'ria*. 14. May. Society Isles. 1793
— *urophy'la*. 2. June. India. 1823 B. C. t. 1697.
— *veno'sa*. 10. E. Ind. 1763.
— *ve'sca*. Australia. 1869.
— *viscifo'lia*. 10. 1820.

Fiddle-wood. *Cithare'xylum*.

Fieldia. (Named after *Baron Field*,

once chief judge of New South Wales. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandraæ*. 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.

F. australis. 1. White. July. W. extra-tropical Australia. 1826. B. M. t. 5089.

Fig. *Ficus Carica*.

Varieties.—For forcing, we recommend the *Brown Turkey*, or *Lee's Perpetual*, *Precussata*, and *White Marseilles*. The *Neri* is also well spoken of. To plant out-doors, the *Brunswick*, *Brown Turkey*, *Brown Ischia*, *Black Ischia*, *Precussata*, and *Osborn's prolific*.

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 two or three times during the season; for waste and watery-

looking shoots 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 for 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 that 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. *Mesembryanthemum*.

Figure-of-8 Moth. *Dilo'ba cæruleocephala*.

Filbert. See *Corylus*.

Fimbria'ria. (From *fimbria*, fringe; a fine shrub with fringed leaves. Nat. ord., *Malpighiaceæ*.) See *Schwannia*. *F. elegans*. See *Schwannia elegans*.

Fingers-and-Toes. See *Cabbage Diseases*.

Finochio, or Azorean Fennel (*Anethum azoricum*) cannot be cultivated successfully in this country.

Fir. *Pinus*.

Fire. See *Furnace*.

Fische'ria. (Named after *Dr. Fischer*, of St. Petersburg. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynancheæ*. Allied to *Gonolobus*.)

Stove evergreen climbers. 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.

F. hispida. Brown. July. Brazil. 1837. Syn., *Gonolobus hispidus*. B. M. t. 3786.

F. Marti'anus. White, green. May. Brazil. 1845. Syn., *Gonolobus Martianus*. B. M. t. 4472.

— *scandens*. Green, yellow. May. S. Amer. 1826.

Fish. See *Animal Matters*.

Fitto'nia. (Named after *Elisabeth* and *Sarah Mary Fitton*, authors of "Conversations on Botany." Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*.)

Stove evergreen perennials, with handsome foliage. Cuttings of half-ripened shoots in sandy loam, in a bottom-heat of about 80° under a hand-glass. Rich sandy loam and peat.

F. argyreneu'ra. Leaves dark green, with white venation. Brazil. 1867. Fl. Ser. t. 1664.

— *gigantea*. 1½. Purplish; leaves with red veins. Ecuador. 1869. Rev. Hort. 1869, p. 186.

— *Verschaffeltii*. Yellow, pink. Brazil. 1863. Syn., *Gymnostachyum* and *Eranthemum Verschaffeltii*, *E. rubronervium*, and *E. rubrovenosum*.

Fitzro'ya. (So called after *Capt. R. Fitzroy, R.N.*, commander of a surveying expedition. Nat. ord., *Coniferæ*.)

Evergreen hardy trees. Cultivated like the *Cedrus deodara*.

F. Archeri. Tasmania. Syn., *Diselma Archeri*. — *patagonica*. 80. Yellow, green. Patagonia. B. M. t. 4616.

Flacou'rtia. (Named after *E. Flacourt*, a French botanist. Nat. ord., *Bixineæ*; Tribe, *Flacourtiæ*.)

Stove evergreen 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.

F. cataphracta. 4. E. Ind. 1804.

— *flavescens*. 15. Guinea. 1780.

— *inermis*. 20. E. Ind. 1819.

— *Ramontchi*. 12. July. Madagascar. 1775. Wight Ic. t. 85.

— *rhamnoides*. 4. Cape of Good Hope. 1816.

A synonym of *Davyalis zizyphoides*.

— *ratundifolia*. 12. E. Ind. 1820.

— *sapida*. 10. E. Ind. 1800.

— *sepia'ria*. 6. E. Ind. 1816.

Flagella'ria. (From *flagello*, to whip or scourge; in reference to the long, flexible shoots. Nat. ord., *Flagellariæ*.)

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. indica. 7. White. June. India and Malay Archipelago. 1782. Red. Lil. t. 257.

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. *Pyrolirion*.

Flat-body Moth. *Depressaria cicutella*.

Flave'ria. (From *flavus*, yellow; a dye of that hue being extracted from this genus. Nat. ord., *Compositæ*.)

Greenhouse biennial, but may be treated as a hardy annual, of no garden value, seeds, sandy loam.

F. contrayerva. 1½. Yellow. Autumn. Peru. 1794. B. M. t. 2400.

Flax. *Linum*.

Flax-Lily. *Phormium*.

Flax-Star. *Lysimachia linum stellatum*.

Fleurya. (Named after *J. F. Fleury*, a writer on orchids. Nat. ord., *Urticaceæ*. Allied to *Urtica*.)

Stove annuals, usually furnished with stinging hairs like a nettle. Seeds. Rich loam.

F. æstuans. 3. Green. Trinidad. Syn., *Urtica æstuans*. Jacq. H. Schœnh. t. 388.

Flinde'sia. (Named in honour of *Capt. M. Flinders, R.N.*, who explored the coast of New Holland in the beginning of this century. Nat. ord., *Meliaceæ*. Allied to *Chloroxylon*.)

A greenhouse evergreen tree. Cuttings of the ripened shoots in sand, under a bell-glass, in spring; loam and peat.

F. australis. 60. White. Queensland. 1823.

Floral Diagrams are designed for indicating the relative position of the various parts of a flower, of which they may be said to form a ground plan. Fig. 1 represents such a diagram of a

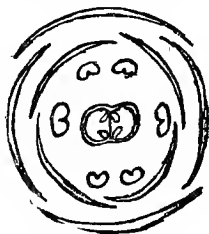


Fig. 1. Wallflower.

Wallflower (*Cheiranthus Cheiri*), in which the four outer organs (*sepals*) are shown to be free from each other, and slightly overlapping each other at the edges in bud (*imbricate*). The four next, inwardly (*petals*), are alternate with the sepals and also imbricate. Of the six *stamens*, one pair of long ones is on that side of the flower next the axis of the inflorescence, while the other pair is on the opposite side of the flower, one short stamen being on each side of the flower. The *ovary* in the centre of the flower is two-celled by a prolongation of the edge of the *carpels*, while the *ovules* spring from the true edges.

Fig. 2 is a similar diagram of a Con-

volvulus, which shows the petals to be united, and folded in bud by one margin only of each segment overlapping the next (*plicate*). The edges of the carpels meet in the centre of the ovary, making it two-celled. This method of arrangement of the young seeds (*ovules*) is

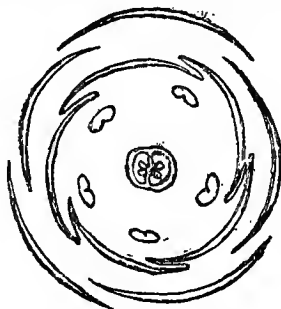


Fig. 2. Convolvulus.

termed axile placentation, that of the Wallflower parietal.

These diagrams form a useful means of indicating the structure of a flower, when accompanied by a longitudinal section also.

Florestina. (Derivation not explained. Nat. ord., *Compositæ*; Tribe, *Helenioideæ*. Allied to *Bahia*.)

Seeds of *callosa* in the open ground, in April; seeds of *pedata* in a hotbed, in March, and transplanted in May to a sheltered situation, or grown in a cool greenhouse.

F. callosa. 1½. White. June. Arkansas. 1824.

—*pedata*. White. July. Mexico. 1803.

Florets. The small stalkless flowers united on a common undivided receptacle, and inclosed in one common involucre to form a compound flower, as in the sunflower.

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 characteristics of a florist's flower to be—1st. The power to be perpetuated and increased by slips and other modes independent of its seed. 2ndly. The power to produce new varieties from seed, capable, like their parent, of being perpetuated; and, 3rdly, it

must possess sufficient interest and variety to be grown in collections.

At present, the chief florists' flowers are the *Amaryllis*, *Anemone*, *Auricula*, *Calceolaria*, *Carnation*, *Chrysanthemum*, *Cineraria*, *Crocus*, *Dahlia*, *Fuchsia*, *Gladiolus*, *Hyacinth*, *Hydrangea*, *Iris*, *Ixia*, *Lily*, *Lobelia*, *Narcissus*, *Pansy*, *Pelargonium*, *Peony*, *Petunia*, *Phlox*, *Pink*, *Polygonanthus*, *Ranunculus*, *Rhododendron*, *Rose*, *Tulip*, *Verbena*, etc. etc.

Flower. A flower is a branch of a plant modified in such a way as to perform the function of reproducing the particular species of plant to which it belongs. When perfect, a flower consists of four circles, or *whorls*, of organs, viz. :—1. The *calyx*, whose segments (*sepals*) are either united or distinct, is generally green, and serves to protect the flower when in bud ; 2. The *corolla*, also with either united or distinct segments (*petals*), is generally coloured to attract insects to convey the pollen from the anther to the stigma ; 3. The *stamens*, the male reproductive organs, generally have a stalk (*filament*) terminated by a one to two-celled *anther*, containing dust-like *pollen* ; 4. The *pistil*, consisting of a one or more celled *ovary*, tipped by a filamentous *style*, terminating in a *stigma*, which is viscid to receive the pollen. The various modifications of flowers are due to the following causes, viz. : *Cohesion* of the members of any whorl ; *Adhesion* of the members of one whorl with those of another, e.g., the stamens with the corolla in *Labiatae* ; *Suppression* of any whorl, or some of its members, e.g., unisexual flowers of *Cucurbitaceae* ; *Multiplication* of the number of members of a whorl, often at the expense of some other whorl, as in the case of double flowers, e.g., *Rose*.

Flower Fence. *Poinciana*.

Flowering Ash. *Fraxinus Ornus*.

Flower-Garden is that portion of the ground in the vicinity of the residence entirely devoted to the cultivation of flowers and trees and shrubs of an ornamental character. The flower-beds may be laid out in a great variety of ways, the trees and shrubs being planted for general as well as particular effects. See **Landscape Gardening, Plantation**, etc.

Flower of Jove. *Lychnis flo's Jo'vis*.

Flower-Pots are of various sizes and names :

Thimbles and thumbs ; any size under three inches in 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 particularized :

	Top width in inches.	Depth in inches.	
Upright 15-inch (Old upright 16s)	15	16	Used for growing 7, or a large mass of <i>Gladioli</i> , and third-sized bulbs of <i>Japan lilies</i> ; for ordinary-sized <i>Alströmarias</i> ; and for large tubers of <i>Tropæolum tricolorum</i> and its allies.
Upright 8-inch (Old upright 24s)	8	10	For 5 <i>Hyacinths</i> , <i>Narcissi</i> , or strong early tulips, like <i>Golden Standard</i> and <i>Rez ruborum</i> .
Upright 6-inch (Old upright 32s)	6	7	For 3 <i>Hyacinths</i> , or <i>Narcissi</i> , and for 1 strong <i>Gladiolus</i> , <i>Auricula</i> , etc.
Upright 5-inch (Old upright 48s)	5	6	For single <i>Hyacinths</i> , or <i>Narcissi</i> ; for 5 <i>Ixias</i> or <i>Crocuses</i> ; and for 4 dwarf early Tulips, such as the <i>Van Houtte</i> .

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. Stone-ware and china-ware 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 *sauces* 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 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 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 Wall.

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 fire-place 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 fire-places 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'gga. See **Ophiopogon**.

Flu'ggea. (In honour of *John Flugge*, a German botanist. Nat. ord., *Euphorbiaceæ*.)

Stove shrub. Rich sandy loam ; cuttings.

F. leucopyrus. Fruit white. E. Indies. 1825.

Fly. See **Black Flea**.

Flywort. *Mya'nthus*.

Fœni'culum. (The Latin name. Nat. ord., *Umbelliferae*.)

For cultivation, see **FENNEL**.

F. du'ice. 3. Yellow. Biennial.

— *vulga're*. 4. Yellow. Autumn. Britain. Syn., *F. officinale*. Eng. Bot. ed. 3, t. 601. Common Fennel.

Fœti'dia. (From *fœtidus*, fetid ; referring to the unpleasant smell of the leaves and wood. Nat. ord., *Myrtaceæ*. Allied to *Gustavia*.)

Cuttings of ripe wood, with the leaves remaining, in sand, in spring, under a bell-glass, and in heat ; fibry loam and turfy peat, with silver sand.

F. mauritia'na. 26. White. Mauritius. 1825.

Fogging-off. The same as *damping-off*.

Follicle, a seed-vessel of one entire piece, and one-celled, bursting lengthwise along one side only, and having the seeds on or near its edges, on a receptacle parallel with it. Examples are the seed-vessels of the Periwinkle and Peony.

Fontane'sia. (In honour of the French botanist, *Des Fontaines*. Nat. ord., *Oleinea* ; Tribe, *Fraxinea*. Allied to *Lilac*.)

Grafted standard high on the Manna Ash (*Fraxinus 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. Fortunei. China. Rev. Hort 1859, p. 43.
— *phillyræoides*. 12. Yellow. August. Syria. 1787. Wats. Dendr. t. 2.

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 better.

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.

Forget-me-not. *Myosotis palustris*.

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 pulverization 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-work. 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 *Robinia pseu-do-acacia* 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. The Ant. 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.

Forrestia. (A commemorative name. Nat. ord., *Commelinaceæ*; Tribe, *Tradescantieæ*.)

Stove perennial. For cultivation, see COM-MELINA.

F. marginata. 3. Purple; leaves purple beneath. Malay Archipelago. 1864. Syns., *F. hispida*, B. M. t. 1864, and *Pollia purpurea*.

Forsythia. (In honour of Mr. Forsyth, royal gardener at Kensington. Nat. ord., *Oleineæ*; Tribe, *Syringææ*. Allied to *Syringa*.)

Hardy deciduous shrubs. Cuttings or layers; common, sandy loam. *F. viridissima* is all the better for a little protection.

F. Fortunei. Yellow. Pekin. 1864.

— *intermedia*. A garden hybrid between *F. suspensa* and *F. viridissima*. Gfl. 1891, p. 397, f. 82.

— *suspensa*. Yellow. Japan.

F. viridissima. 10. Yellow. March. North China. 1845.

Forsyth's Plaster for healing the wounds and restoring to vigour decayed trees, was as follows:—One bushel of fresh *cowdung*; 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 plaster. 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.

Fortunæa. (Named in compliment to Mr. Fortune, botanical collector in China. Nat. ord., *Juglandææ*.) See **Platycarya**.

F. chinensis. Journ. Hort. Soc. i. p. 51. See *Platycarya strobilacea*.

Fothergilla. (Named after Dr. Fothergill. Nat. ord., *Hamamelidææ*.)

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. alnifolia. 4. May. 1765.

— *acuta*. 4. June. 1765. Syn., *F. Gardneri*, Jacq. Ic. t. 100.

— *major*. 4. May. 1765.

— *obtusata*. 4. June. 1765.

— *serotina*. 4. August. 1765.

— *mirabilis*. See *Miconia*.

Fougerouxia. 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 from the aperture, 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.

Fouquieria. (In honour of *Dr. Fouquier*, a French physician. Nat. ord., *Tamariscineæ*; Tribe, *Fouquieriæ*.)

Warm greenhouse shrub. Cuttings in heat under a bell-glass. Sandy loam and fibry peat. *F. spinosa*. 12. Scarlet. Mexico.

Fourcroya. See *Furcraea*.

Foxbane. *Aconitum vulpæria*.

Foxglove: *Digitalis*.

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.

Fragaria. The Strawberry. (From *fragens*, perfumed; in reference to the flavour of the fruit. Nat. ord., *Rosacæ*; Tribe, *Potentilleæ*.)

Hardy evergreens. Seeds, sown early in a slight bed, 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. bonariensis. 2. Apetal. June. Buenos Ayres.

— *Bresliæna*. 1. White. May. France.

— *calycina*. 1. White. April. France. Syn., *F. grandiflora*.

— *canadensis*. 1½. White. May. N. Amer.

— *chilensis*. ¾. White. May. S. Amer. 1727.

Some varieties are figured in Fl. Ser. t. 504-6.

— *collina*. 1. White. June. Germany. 1768.

— *elatior*. 1½. White. May. Britain. Eng. Bot. ed. 3, t. 439. Hantbois.

— *grandiflora*. See *F. calycina*.

— *indica*. 1. Yellow. July. India. 1805.

— Andr. Rep. t. 479.

— *Majardæa*. 1. White. May. France.

— *monophylla*. B. M. t. 63. See *F. vesca*, var.

— *platanoides*. 1. Red. May. N. Amer.

F. vesca. 1. White. May. Britain. Eng.

Bot. ed. 3, t. 438. Common Strawberry.

— *monophylla*. 1. White. May. 1773.

Syn., *F. monophylla*.

— *virginiana*. 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 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 salad, herbs, radishes, etc.

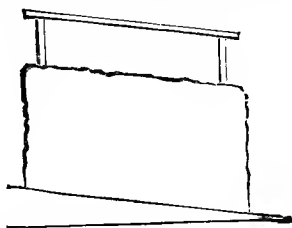
The wood-work of the back, ends, and front should be of inch or inch and a quarter deal, as before observed, which should be all neatly planed even and smooth on both sides; and the joints, in framing them together, should be so close that no wet or air can enter. The cross-bars or bearers at top, for 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, etc.

With respect to the lights, the wood-work 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 wood-work, 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 well from the injuries of weather, and from the moisture of the earth and dung.

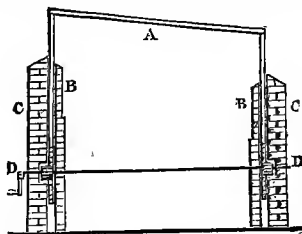
Mr. Knight has suggested an impor-

tant 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, as represented in the accompanying sketch.



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, has introduced the ingenious contrivance represented in the accom-

panying sketch and references:—A, a movable frame; B B, inside lining of the pit; C C, outer wall. Between these the sides of the frame pass, and are lowered or elevated by racks and spindles, D D.

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.—*Gardeners' Chronicle*.

The quantity made according to this recipe will be sufficient for about 100 square feet of calico.

Franciscea. See Brunfelsia.

- F. acuminata*. B. M. t. 4189. See *Brunfelsia acuminata*.
 — *calycina*. B. M. t. 4583. See *Brunfelsia calycina*.
 — *Hopeana*. B. M. t. 2829. See *Brunfelsia Hopeana*.
 — *hydrangeaeformis*. B. M. t. 4209. See *Brunfelsia hydrangeaeformis*.
 — *latifolia*. B. M. t. 3907. See *Brunfelsia latifolia*.
 — *Lindenia*. See *Brunfelsia Lindenia*.
 — *macrantha*. Lem. Jard. Fl. t. 249. See *Brunfelsia macrantha*.
 — *uniflora*. B. C. t. 1332. See *Brunfelsia uniflora*.

Franciscia. A synonym of **Darwinia**.

Franco'a. (Named after *F. Franco*, a Spaniard. Nat. ord., *Saxifragaceae*; Tribe, *Francoeae*.)

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. appendiculata*. 2. Purple. July. 1830. B. M. t. 3178.
 — *ramosa*. 2. White. July. 1831. B. M. t. 3824.
 — *senchifo'lia*. 2. Purple. July. 1830. B. M. t. 3309.

Frankenia. Sea Heath. (Named after *Frankenius*, a Swedish botanist. Nat. ord., *Frankeniaceae*.)

Small plants, found chiefly near the sea, more curious than pretty, though useful for rock-works, or for a collection of alpine. Seeds, cuttings, and dividing the roots; sandy loam, and a little peat.

- HALF-HARDY EVERGREEN TRAILERS.
F. ericifolia. †. Red. July. Canaries. 1816.
 — *nodiflora*. †. Flesh. June. Cape of Good Hope. 1818.
 — *parciflora*. 1. Pink. July. N. Holland. 1824. B. M. t. 2896.

- HARDY EVERGREEN TRAILERS.
F. corymbosa. †. Red. July. Barbary. 1819.
 — *hispidula*. †. Light blue. July. Siberia. 1789. Syn., *F. hirsuta*. Sibth. Fl. Gr. t. 343.

- F. intermedia*. †. White. July. South Europe. 1817.
 — *lævis*. †. Flesh. July. England. Eng. Bot. ed. 3, t. 190.
 — *molliis*. †. Red. July. Caucasus. 1824.
 — *Nothria*. †. Flesh. July. Cape of Good Hope. 1816.
 — *pulverulenta*. †. Red. July. England. Annual. Sibth. Fl. Gr. t. 344.

Frankincense. *Pinus taeda*.

Franseria. (After *Ant. Franser*, a Spanish botanist and doctor. Nat. ord., *Compositæ*.)

Half-hardy herbaceous biennial or perennial seeds, sandy loam.

F. artemisioides. 5-6. Chilian Andes. 1890.

Fraseria. (Named after *John Fraser*, botanical collector in North America. Nat. ord., *Gentianæ*; Tribe, *Swerticeæ*. Allied to *Gentiana*.)

Hardy biennial marsh-plant. Seeds in spring, and transplanted; also by division of the roots; sandy peat, with a little turfy loam.

F. carolinensis. 4. Green, yellow. July. Carolina. 1795. Syn., *F. Walteri*.

Fraxinella. *Dictamnus*.

Fraxinus. The Ash. (*Fraxinus* is the Latin for an ash-tree. Nat. ord., *Oleineæ*; Tribe, *Fraxineæ*. Syn., *Ornus*.)

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 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. excelsior* are interesting.

- F. acuminata*. 40. May. N. Amer. 1723.
 — *alba*. 30. Green. May. N. Amer. 1823.
 — — *foliis argenteo-marginatis*. Leaves edged with pale yellow, rosy when young. Garden variety. 1886.
 — *amarissima*. 20. May.
 — *americana*. 20. May. N. Amer. 1723.
 — — *latifolia*. 20. May.
 — *angustifolia*. May. Spain. 1825.
 — *appendicula*. 20. May.
 — *arbutifolia*. Leaves with a rusty down beneath.
 — *argentea*. 15. June. Corsica. 1825.
 — *atrovirens*. 4. May. Britain.
 — — *aurea*. April.
 — *aucubifolia nova*. Garden variety. 1887.
 — *caroliniana*. 30. June. N. Amer. 1783.
 — *cinearea*. 30. May. N. Amer. 1824.
 — *concolorifolia*. Growing points variegated.
 — *curvidens*. May. Carolina. 1811.
 — *elliptica*. 30. May. N. Amer. 1825.
 — *epiptera*. 30. May. N. Amer. 1823.
 — *excelsior*. 80. May. Britain. Common Ash. Bent. and Tr. t. 171.
 — — *argentea*. 20. May. Britain.
 — — *aurea*. 20. May. Britain.
 — — *aurea pendula*. May. Britain.
 — — *erosa*. 20. May. Britain.
 — — *foliis aureis*. 1879. Garden variety.
 — — *fungosa*. 26. May. Britain.
 — — *horizontalis*. 20. May. Britain.
 — — *jaspidea*. 30. May.
 — — *kincairnie*. 40. May. Kincairney.

- F. excelsior hu'tea*. 20. May. Britain.
 — — *na'na*. 10. May. Britain.
 — — *pendula*. 20. May.
 — — *striata*. 20. May. Britain.
 — — *verrucosa*. 60. May. England.
 — — *verrucosa pendula*. May. England.
 — — *verticillaris*. 20. May. Britain.
 — — *expan'sa*. 30. May. N. Amer. 1824.
 — — *fulva*. 30. May. N. Amer. 1823.
 — — *globosa*. Head of tree roundish.
 — — *heterophylla*. 30. May. England.
 — — *variegata*. 12. May. Ireland. 1836.
 — — *juglandifolia*. 40. May. N. Amer. 1783.
 — — *subintegerrima*. 40. May.
 — — *laciniata*. May. N. Amer.
 — — *la'ncea*. 30. May. N. Amer. 1820.
 — — *lentiscifolia*. 6. May. Aleppo. 1710.
 — — *pendula*. 20. June. Germany. 1833.
 — — *longici'spis*. Japan. 1869.
 — — *longifolia*. 30. May. N. Amer. 1824.
 — — *hu'cida*. 20. May.
 — — *macrophylla*. 40. May. 1823.
 — — *Marie'sii*. White. May. N. China. B. M. t. 6678.
 — — *mexicana*. 30. Green. May. Mexico. 1825.
 — — *nitida*. 30. May. N. Amer. 1824.
 — — *monstruosa*. July. Britain.
 — — *na'na*. 6. June.
 — — *nitida*. 30. May. N. Amer. 1825.
 — — *Ornus*. 20. Greenish-white. May. S. Europe. 1730. Syn., *Ornus europæa* Manna Ash.
 — — *ovata*. 30. May. N. Amer.
 — — *oxycarpa*. 20. May. Caucasus. 1815.
 — — *oxyphylla*. 20. South Europe. 1821.
 — — *paludata*. 30. May. N. Amer.
 — — *pannosa*. 30. May. Carolina. 1820.
 — — *parvifolia*. 20. May. Levant. 1822.
 — — *platycarpa*. 30. May. N. Amer. 1820.
 — — *polemoniifolia*. April. N. Amer. 1812.
 — — *pubescens*. 20. April. N. Amer. 1811.
 — — *latifolia*. 20. May.
 — — *longifolia*. 20. May.
 — — *subpubescens*. 20. May.
 — — *pulverulenta*. 30. May. N. Amer. 1824.
 — — *quadrangulata*. 30. May. N. Amer. 1822.
 — — *nerosa*. 30. May.
 — — *Rege'lii*. Central Asia. 1889.
 — — *Richardi*. 30. May. N. Amer.
 — — *rubicunda*. 30. May. N. Amer. 1824.
 — — *ru'fa*. 30. May. N. Amer. 1822.
 — — *sambucifolia*. 30. May. N. Amer. 1800.
 — — *cri'spa*. 30. May.
 — — *tamariscifolia*. April. Levant.
 — — *turkestanica*. Turkestan. 1887.
 — — *versicolor*. May. Britain.
 — — *virens*. 20. May.
 — — *variegata*. 20. April.
 — — *virens*. 30. May. N. Amer. 1824.
 — — *xanthoxyloides*. North of India. 1845.

Free'sia. (Commemorative. Nat. ord., *Iridaceæ*; Tribe, *Ixiceæ*.)

Handsome greenhouse bulbs. For cultivation, see BABIANA, to which they are allied.

- F. Leichthii*. 1. White, orange. S. Africa. 1875. Gf. t. 808.
 — — *major*. Cream, orange. 1882.
 — — *odorata*. White, yellow. June. S. Africa. 1880. Syn., *Tritonia odorata*, B. C. t. 1820.
 — — *refracta*. Pure white, orange, occasionally with a few violet lines. May. S. Africa. 1815. Syns., *Gladiolus refractus*, Jacq. Ic. t. 241, and *Tritonia refracta*, B. R. t. 135.
 — — *alba*. Pure white.

Free-stone peaches and nectarines are those with fruit, the flesh of which parts freely from the stone.

Freezing. See **Frost.**

Fremontia. (In honour of *Colonel Fremont*, an American officer. Nat. ord., *Sterculiaceæ.*)

Hardy deciduous shrub. Cuttings in spring under a hard-glass. Sandy loam and a little leaf-mould.

F. californica. 4. Yellow. April. California. 1851. B. M. t. 5591.

French Bean. See **Kidney Bean.**

French Marigold. *Tagetes patula.*

Frene'la. See **Callitris.**

Freycine'tia. (In honour of *Admiral Freycinet*, the French circumnavigator. Nat. ord., *Pandanaceæ.*)

Stove evergreen climber. Offsets. Sandy loam.

F. Ba'nksii. Green. New Zealand. B. M. t. 6028. — *Baueria'na.* Pink. Norfolk Island.

Frezie'ra. (Named after *A. F. Frezier*, a French traveller in South America. Nat. ord., *Ternstro'miaceæ*; Tribe, *Ternstro'miaceæ.*) See **Cleyera.**

F. theod'es. See *Cleyera theod'es.*

Fridericia. (In honour of *Frederick III.*, king of Bavaria. Nat. ord., *Bignoniaceæ*; Tribe, *Bignoniaceæ.*)

Stove climbing shrub, allied to *BIGNONIA*, which see for cultivation.

F. Guilt'ima. Yellow. Bahia, Brazil.

Frie'sia. (Named after *Dr. Fries*, of Lund. Nat. ord., *Tiliaceæ.*) Now united to **Aristotelia.**

A fit plant for training against a conservatory wall. Cuttings of young shoots, rather firm, in sand, under a glass, in April; tury loam and fibry peat, with a little sand.

F. peduncular'is. 6. White. Van Diemen's Land. 1818. B. M. t. 4246. A synonym of *Aristotelia peduncular'is.*

Fringe-tree. *Chionanthus.*

Fritillaria. Fritillary. (From *fritillus*, a chess-board; referring to the chequered flowers of some species. Nat. ord., *Liliaceæ*; Tribe, *Tulipeæ.* Hardy bulbs, in close affinity with the true Lilies.)

F. acmope'tala. 1. Green, purple. Spring. Asia Minor. 1875.

— *a'lyba.* 1. White. May. N. Amer.

— *arme'na.* $\frac{1}{2}$. Lurid purple. March. Armenia. 1878.

— — *fu'sco-lu'tea.* Bright yellow inside, coppery-brown outside. Smyrna. 1887.

— *au'ra.* $\frac{1}{2}$. Yellow, black. Taurus. 1876.

— *bucha'rica.* Greenish-white. April. Buchara. Gf. t. 1171, B. M. t. 7080.

— *Burne'i.* Lurid brown-red, white. 1879.

— *canalicula'ta.* Purple. February. Kurdistan. 1890.

— *contor'ta.* White. Perianth segments united. G. C. 1886, xxv. p. 681.

— *cu'prea.* 1. Copper. July. Mexico. 1834.

— *dasyphy'lla.* $\frac{1}{2}$. Purple, yellowish. April. Asia Minor. 1875.

F. gra'ca. $\frac{1}{2}$. Brown, green. March. Greece. B. M. t. 5052.

— *herica'u'lis.* Dark purple. April. Asia Minor. 1889.

— *Hooker'i.* 1-2. Lilac. Summer. Sikkim. 1878. Syn., *Lilium Hooker'i.*

— *imper'ialis.* 4. Dark yellow. April. Persia. 1596. B. M. tt. 194 and 1215. Crown Imperial.

— — *fa'va.* 4. Yellow. April. Persia. 1596.

— — *ru'bra.* 4. Red. April. Persia. 1596.

— — *scu'dens.* Yellow. April. Siberia. 1827.

— *kamschatke'nsis.* $\frac{1}{2}$ - $\frac{1}{2}$. Purple. Spring. E. Siberia. Gf. t. 173. Syn., *Lilium camtschateense.*

— *Karel'i'ni.* $\frac{1}{2}$. Pale, purple-spotted. Central Asia. 1834. Syn., *Rhinopetalum Karelini.*

— *Kotschy'na.* $\frac{1}{2}$. April. Hazartschall. 1844.

— *lanceola'ta.* White. N.W. America. 1872.

— — — *Liliorhiza lanceolata.*

— *latifo'lia.* 1. Red. May. Caucasus. 1604.

— *leuca'ntha.* 1. White. May. Siberia. 1822.

— — — *B. M. t. 3083.*

— *lusita'nica.* 1. Brown, purple. June. Spain. 1825.

— *lu'tea.* 1. Yellow. May. Caucasus. 1812.

— — — *Belg. Hort. i. 49.*

— *macra'ntra.* $\frac{1}{2}$. Purple, yellow, green. Spring. Levant. 1875.

— *macrophy'lla.* 3. Rosy-lilac. Spring. India. 1843. Syns., *Lilium roseum*, B. M. t. 4725, and *L. Thomsonianum*, B. R. 1845, t. 1.

— *melea'gris.* 1. Purple. May. Britain.

— *meleagro'des.* 1. Purple. May. Siberia. 1824.

— *messane'nsis.* 1. Brown, purple. June. Italy. 1825. Belg. Hort. i. 49.

— *mi'nor.* $\frac{1}{2}$. Purple-spotted. April. Altai Mountains. 1830.

— *Moggr'i'dgei.* 1. Yellow, brown. August. Maritime Alps. 1880.

— *nervosa.* $\frac{1}{2}$. Dark purple. May. Caucasus. 1826.

— *ni'gra.* 1. Yellow. Purple. May. Pyrenees. 1596.

— *obli'qua.* 1. Brown, purple. April. Caucasus. B. M. t. 857.

— *orane'nsis.* Purplish-brown, yellowish-green. March. Algeria. 1877. Syn., *F. Munbyi.*

— *oxype'tala.* $\frac{1}{2}$. Purple. June. N. India. B. M. t. 4731.

— *pallidifo'ra.* Yellow. Songaria. 1850. Gf. t. 209.

— *Pe'rryi.* Garden hybrid between *F. recurva* and *F. lanceolata.* 1886.

— *pe'rsica.* $\frac{1}{2}$. Brown. May. Persia. 1596. B. M. tt. 962 and 1537.

— — — *mi'nima.* $\frac{1}{2}$. Brown. May. Persia. 1596.

— *pro'cor.* 1. White. May. Europe.

— *pu'dica.* 1. Purple, yellow. May. N. Amer. 1824.

— *pyrena'ica.* $\frac{1}{2}$. Dark purple. June. Spain. 1805. B. M. t. 664.

— *Radda'na.* Greenish-yellow. Central Asia. 1887.

— *recur'va.* $\frac{1}{2}$ -2. Scarlet, yellow. May. California. 1870.

— *ruth'e'nica.* 1. Purple. May. Caucasus. 1826. Swt. Fl. Gard. ser. 2, t. 343.

— *Sewerzow'i.* $\frac{1}{2}$. Yellowish-green, or purplish, or purplish-green. Turkestan. 1873. Syn., *Korolkowia Sewerzowi.*

— *tene'la.* 1. Purple. May. Caucasus. 1826.

— *tulipifo'lia.* 1. Brown, purple. May. Crimea. 1822.

— *verticilla'ta.* 1. Purple. April. Crimea. 1823.

— *Walze'vi.* 1. Outside lead-colour, inside red-brown and white. Central Asia. 1879.

Fritillary as a Florist's Flower.

Propagation: by Offsets.—The offsets are produced round the old bulbs; these should be detached every second or 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 *Fritillaria*. The noble *F. imperialis*, 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 replanted. 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.

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. *Gymnadenia virens*.

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 by the expansion of

the ice, when it thaws 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 hothouse 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, etc., 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. The power of what are termed hollow walls, as non-conductors of heat, is well known. Neither can exterior damp 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 fruit 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 provided with close-fitting shutters, and these should be double, even as the walls. During severe weather, mats inclosing 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, etc., 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.

Fuchsia. (Named after Leonard Fuchs, a German botanist. Nat. ord., *Onagraceæ*.)

Shrubs or small trees. For culture, see below. There are numerous garden hybrids.

- F. acynifolia*. Rose, variegated with white. Mexico.
- *alpestris*. 20. Crimson. August. Brazil. 1841. B. M. t. 3999.
- *amplia*. 3-5. Scarlet. June. Andes of Ecuador. 1877. B. M. t. 6839.
- *apetala*. 10. Purple. September. Chili. 1824.
- *arborescens*. 16. Pink. October. Mexico. 1824. Syn., *F. paniculata*.
- *bacillarvis*. 5. Rose. July. Mexico. 1829. B. R. t. 1480.
- *boliviana*. Crimson. Bolivia. 1876. Rev. Hort. 1876, p. 150.
- *coccinea*. 2. Crimson. 1878. B. M. t. 5740. *F. coccinea* of gardens is usually *F. magellanica*; the true plant is known by its short hairy petioles and hairy twigs.
- *conica*. See *F. macrostema*, var. *conica*.
- *coralliina*. 20. Crimson, deep purple. Syn., *F. exoniensis* of G. C. 1833, xx. p. 565.
- *cordifolia*. 5. Orange. August. Mexico. 1840. B. R. 1841, t. 70.
- *corymbiflora*. 6. Scarlet. August. Peru. 1840.
- *cylindracea*. 2. Scarlet. August. Demerara. 1837.
- *decussata*. B. M. t. 2507. See *F. macrostema*.
- *denticulata*. Crimson. August. Brazil.
- *dependens*. 4. Crimson. June. Brazil. 1848. Ic. Pl. t. 65.
- *discolor*. 3. Purple, red. August. Port Famine. 1830. B. R. t. 1805.
- *Dominiana*. Scarlet. Garden hybrid. 1852. Fl. Ser. t. 1004.
- *exortica*. 3. Green, purple. July. New Zealand. 1824. B. R. t. 857.
- *exoniensis*. Scarlet, purple. Hybrid between *F. cordifolia* and *F. globosa*. 1842. Paxt. Mag. x. p. 151.
- *fulgens*. 4. Vermilion. July. Mexico. 1830.
- *globosa*. 2. Scarlet, purple. Mexico and Peru. B. M. t. 3364.
- *gracilis*. 8. Scarlet, purple. August. Chili. 1823.
- — *multiflora*. 6. Scarlet, purple. August. Chili. 1824.
- *integrifolia*. Red. June. Brazil. 1841. B. M. t. 3948.
- *macrantha*. 2. Red. April. Peru. 1845. B. M. t. 4233.
- *macrophylla*.
- *macrostema*. 3. Scarlet, purple. July. Chili. 1823. Syn., *F. decussata*. B. M. t. 2507.
- — *conica*. 3. Scarlet, purple. Chili. 1824. Syn., *F. conica*.
- — *pyralis*. Dwarf variety.
- *magellanica*. Crimson, blue. Tierra del Fuego. 1789.
- *magniflora*. Garden variety.
- *microphylla*. 6. Scarlet, purple. August. Mexico. 1828. B. M. t. 1269.

- F. minima*. Red. August. New Grenada.
- *nigricans*. Dark crimson. Venezuela. 1848.
- *paniculata*. See *F. arborescens*.
- *pendulæfolia*. Crimson. March. Tropical America. 1879. Flor. Mag. n.s. t. 412.
- *procumbens*. †. Yellow, green; berries red, very ornamental. New Zealand. 1874. Hardy; creeps on the ground, or can be trained on a balloon. B. M. t. 6139.
- *radicans*. 20. Scarlet. September. Brazil. 1837.
- *sempervirens*. Garden hybrid. 1888.
- *serratifolia*. 5. Scarlet, green. August. Peru. 1844. B. M. t. 4174.
- *sessilifolia*. Green, crimson. Columbia. 1866.
- *simplificanlis*. Crimson. July. Brazil. B. M. t. 5096.
- *spectabilis*. 4. Scarlet. August. Andes of Cuenca. 1847. B. M. t. 4375.
- *spleniciens*. 6. Scarlet, green. August. Mexico. 1841. B. M. t. 4082.
- *syringæfolia*. Rose. 1873. Rev. Hort. 1873, p. 311.
- *tenebra*. 8. Scarlet, purple. August. Chili. 1824.
- *tetradactyla*. 2. Rose. July. Guatemala. 1842.
- *thymifolia*. 4-6. Rose to deep red. Mexico. B. R. t. 1284.
- *Toddiana*. Scarlet, purple. Hybrid between *F. fulgens* and *F. globosa*. 1843. Rev. Hort. ser. 2, ii. p. 349.
- *triphylla*. Crimson. September. Pichinchia. 1842. B. M. t. 6795.
- *venusta*. 6. Purple. October. Mexico. 1825.
- *virgata*. 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 into 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 whitetube, 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 *coccinea*, *virgata*, *conica*, *gracilis*, *globosa*, etc., 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 *coccinea* as dwarf as *globosa*, 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 *fulgens* 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 sled, 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. corymbiflora* must have the wood well ripened, and not be pruned too close. *Spectabilis* and *serotifolia* are late bloomers, 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 19s., when the Gloucestershire could be had for 10s. 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°.

Caking coals	lbs.	1.2
Splint or hard coal	}	3.13
Cannel Coal		
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.	
— 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., *Malvaceæ*; Tribe, *Hibisceæ*. 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.

F. cuneiformis. White, purple. August. W. Australia. 1866.

— *hakeaefolia*. 5. Lilac, red. August. Swan River. 1846. B. M. t. 4261. Syn., *Hibiscus multifidus*, Paxt. Fl. Gard. vii. p. 103.

— *heterophylla*. Yellow, red. August. St. Martha. 1845. B. M. t. 4218.

Full-Flower. See **Double-Flower.**

Fuma'ria. Fumitory. (From *fumos*, smoke; referring to the disagreeable smell of the plant. Nat. ord., *Fumariaceæ*. 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. capreolata. 4. Flesh. July. Europe. Climber.

— *Burche'lii*. 4. April. Cape of Good Hope. 1816.

— *leucantha*. 1½. White. August. Corsica. 1836.

— *me'dia*. 3. Flesh. July. Britain.

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.

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 furthest 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. *Fumaria*.

Fungi constitute a large class of plants varying much in size and structure, but all agree in being destitute of green colouring matter (*chlorophyll*), and consequently having to derive, at least part, of their nourishment from some other vegetable or animal matter. The chief one of use to the gardener is the mushroom (*Agaricus campestris*), which see. Many are extremely minute, and their appearance on living plants, is a sure sign of some weakness in the plant's constitution, due to some improper treatment, such as insufficient drainage, etc. Some of these, such as the Barberry fungus, live on two distinct genera of plants in the course of their life cycle, and so may be eradicated by the destruction of one of these host plants. The number of these fungi is so great, and the remedies for them too numerous to mention here, that when they make their appearance, to the injury of plants, they should at once be submitted to some competent authority for identification and advice as to their extermination.

Funkia. (After *H. Funk*, a German botanist. Nat. ord., *Liliaceæ*; Tribe, *Hemerocallidæ*. Allied to *Hemerocallis*.)

Hardy herbaceous perennials, from Japan; dividing the roots; sandy loam, and a dry situation.

- F. albo-marginata*. 1½. Lilac. July. 1837. B. M. t. 3657.
 — *grandiflora*. 2. Pure white. July. Japan. Syn., *F. japonica*.
 — *lanceolata*. 1. Lilac. August. 1829. Swt. Fl. Gard. ser. 2, t. 273.
 — *ovata*. 1½. Blue. May. 1790.
 — *marginata*. Leaves edged with white.
 — *Sieboldia*'na. 1. Lilac. June. 1830. B. M. t. 3663.
 — *Fortunei*. White. Japan. 1876.
 — *subcordata*. 1. White. August. 1790. Syns., *Hemerocallis alba*, *H. cordata*, *H. japonica*, B. M. t. 1433, and *H. plantaginea*.
 — *undulata*. 1. Lilac. August. 1834.
 — *variegata*. 1. Lilac. August. 1834.

Furcraea. (Named after *M. Fourcroy*, a distinguished French chemist. Nat. ord., *Amaryllidææ*; Tribe, *Agaveææ*. Syn., *Fourcroya*.)

Increased by seeds, or by suckers. For cultivation, see AGAVE.

- F. Barilleti*. 3. Tropical America. 1867.
 — *Bedinghauisii*. 6. Mexico. 1860. Belg. Hort. 1863, p. 327. Syns., *F. Roezlii*, Rev. Hort. 1887, p. 353, *Roezlia bulbifera*, *R. regia*, *Yucca argyrophylla*, and *Y. Tonelliana*.
 — *Commelyni*. 25. Tropical America.
 — *cubensis*. 6. Milk-white, green. November. Tropical America.
 — *inermis*. Leaves without spines. November. B. M. t. 6573.
 — *Demouliniana*. 10. Mexico. 1866.
 — *elegans*. 20. Greenish. Winter. Mexico. 1868. Syns., *F. Ghesbreghtii*, *F. pugioniformis*, and *Agave regia*.
 — *flavo-viridis*. 14. Greenish. Mexico. 1846. B. M. t. 5163.
 — *geminispina*. 4. Tropical America.
 — *Ghesbreghtii*. See *F. elegans*.
 — *gigantea*. 20-40. Greenish-white. November. Tropical America. 1690. B. M. t. 2250.
 — *Lindeni*. Columbia. 1869. Ill. Hort. n.s. t. 186.
 — *lipsiensis*. 3. Tropical America. 1868.
 — *longeva*. 40. White. May. Mexico. 1833. B. M. t. 5519.
 — *Roezlii*. 10-12. Pale yellow. Mexico. Rev. Hort. 1887, p. 353. Syn., *Roezlia regia*.
 — *Selloi*. 20. Greenish-white. Guatemala. 1865. B. M. t. 6148.
 — *stricta*. 8-9. Tropical America. 1868.
 — *tuberosa*. 6. Pale yellow. 1739.
 — *tubiflora*. See *Beschorneria tubiflora*.
 — *undulata*. 10. Green. Mexico. 1868. B. M. t. 6160.

Furze. *Ulex*.

Fustic. *Maclura tinctoria*.

G.

Gærtnera. (Named after *Dr. Gærtner*, a celebrated botanist. Nat. ord., *Loganiaceææ*; Tribe, *Gærtnerææ*. Allied to *Gardneria*.)

All 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, loam, and sand.

- G. obtusifolia*. 20. White. China. 1810. Syn., *Hiptage obtusifolia*.
 — *racemosa*. 15. White, yellow. April. E. Ind. 1798. Andr. Rep. t. 600. Syn., *Hiptage madabloti*.

Ga'gea. (Named after Sir Thomas Gage. Nat. ord., *Liliaceæ*; Tribe, *Tulipeæ*. 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. Seeds.

- G. bohémica*. † April. Bohemia. 1825.
- *bracteolaris*. † April. Europe. 1817. Swt. Fl. Gard. t. 158.
- *vulbifera*. May. Tauria. 1829.
- *chlorantha*. † April. Siberia. 1819.
- *circinata*. † May. Siberia. 1789.
- *fascicularis*. † April. Britain.
- *glauca*. Swt. Fl. Gard. t. 177. See *G. stenopetalata*.
- *liota*. May. South Europe. 1825.
- *liota*. † Yellow. Spring. Europe. Yellow Star of Bethlehem.
- *m'nima*.
- *podolica*. May. Podolia. 1827.
- *pyzilla*. † April. Bohemia. 1825.
- *pygmaea*. † April. Spain. 1825.
- *serotina*. † June. Wales.
- *spathacea*. † May. Germany. 1759.
- *stellaris*. † May. Sweden. 1759.
- *stenopetalata*. † April. Switzerland. 1825. Syn., *G. glauca*.
- *Sternbergii*. † May. Switzerland. 1826.
- *strigata*. † July. Europe. 1826.
- *sybotica*. † April. Europe.
- *uniflora*. † May. Siberia. 1781.
- *villosa*. † April. Caucasus. 1825.

Gagnebina. (Probably the native name of one of the species. Nat. ord., *Leguminosæ*; Tribe, *Adenanthereæ*. Allied to *Prosopis*.)

Stove evergreens, 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 fibry.

- G. axillaris*. 6. Yellow. 1824.
- *tamariscina*. 6. Yellow. 1824.

Gahnia. (After Dr. Henry Gahn, a botanist, who wrote on grasses. Nat. ord., *Cyperaceæ*.)

Stove sedge; sandy loam; division.

- G. aspera*. Whitish-yellow; fruit reddish-yellow. Fiji. 1887.

Gaillardia. (Named after M. Gaillard, a French patron of botany. Nat. ord., *Compositæ*; Tribe, *Helenioideæ*. Allied to *Helenium*.)

This, like many other composite genera, is inclined to sport from seeds. Numerous varieties, both single and double-flowered, are now in cultivation. Hardy herbaceous plants, with the exception of *coronata* and *amblyodon*, which requires a cold pit in winter. In cold, damp situations, cuttings of *pulchella* and *picata* may also be saved in a similar manner. Cuttings under a hand-light in summer, and division of the root in spring; sandy loam, in sunny position.

- G. amblyodon*. Blood-red. October. Texas. 1873. B. M. t. 6081. Annual.
- *aristata*. Orange. August. N. Amer. 1812. B. R. t. 1186. Syn., *G. perennis*.
- *grandiflora*. Large-flowered variety. Gard. Dec. 13, 1824.
- *bicolor*. See *G. pulchella*.
- *coronata*. Red, brown. July.
- *Drummondii integrifolia*. 2. Carnation, yellow. August. Louisiana. 1833.

- G. hybrida splendens*. Garden hybrid.
- *Lorenzia*. A variety of *G. pulchella*.
- *picata*. See *G. pulchella*, var. *picata*.
- *pulchella*. 3. Crimson, tipped with yellow. Autumn. N. America. Syn., *G. bicolor*. B. M. t. 1602.

— *picata*. Leaves slightly succulent. Syn., *G. bicolor*, var. *Drummondii*, B. M. t. 3368. In addition to this there are numerous varieties in gardens, such as: *Borisselari*, *coronata*, *hybrida*, *Loiseletii*, *Lorenzia* (Gf. t. 1083), *Richardsonii*, *Telemachi*, *tricolor*, etc.

Gala'ctia. (From *gala*, milk; in reference to the milky juice of some of the species. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. 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.

HARDY DECIDUOUS TWINERS.

- G. glabella*. 3. Purple. July. N. Amer.
- *molis*. 3. Purple. July. N. Amer. 1827.

STOVE EVERGREEN TWINERS.

- G. cubensis*. Rose. July. Cuba. 1826.
- *filiformis*. 3. Purple. July. S. America. 1820. Syns., *Galega filiformis*, Jacq. Ic. t. 573, and *Sweetia filiformis*.
- *longifolia*. 4. Purple. S. America. 1818. Syns., *Galega longifolia*, Jacq. Ic. t. 572, and *Sweetia longifolia*.
- *pendula*. 6. Red. July. Jamaica. 1794.
- *pinna*. See *Barbieria polyphylla*.
- *sericea*. 6. July. Bourbon. 1824.
- *striata*. 4. Yellow. July. S. America. 1818. Syn., *Glycine striata*, Jacq. Vind. t. 76.

Galactites. (From *gala*, milk; referring to the juice and to the milk-white veins on the leaves. Nat. ord., *Compositæ*; Tribe, *Cynarioideæ*. Allied to *Silybum*.)

Hardy annuals, requiring to be sown in the flower-borders in March or April.

- G. australis*. 1. Purple. July. Australia. 1824.
- *tomentosa*. 13. Purple. July. South Europe. 1738.

Galactode'ndron. Cow-tree. (From *gala*, milk, and *dendron*, a tree. Nat. ord., *Urticaceæ*; Tribe, *Artocarpææ*.) See **Brosimum**.

- G. utile*. B. M. t. 3723-4. See *Brosimum Humboldtii*.

Galangale. *Kempferia*.

Galanthus. Snowdrop. (From *gala*, milk, and *anthos*, a flower. Nat. ord., *Amaryllidææ*.)

Hardy bulbs. Offsets; division of masses of bulbs; common garden-soil; should be lifted every four or five years.

- G. Alleni*. White. March. Caucasus. 1891.
- *caucasicus*. White, green. February. Caucasus. 1887.
- *corcyrensis*. A variety of *G. nivalis*.
- *Etneusis*. † White, green. February. Asia Minor. 1875. B. M. t. 6166.
- *globosus*. White. Smyrna. Garden, 1887, p. 393.
- *Fostri*. White. February. Asia Minor. 1889.
- *Imperati*. See *G. nivalis*, var. *grandior*.

- G. latifolius*. White, green. Caucasus. 1868. Gf. t. 578. Syn., *G. Redoutei*.
- *nivalis*. †. White. February. Britain. Red. Lil. t. 200.
- — *Atki'naii*. Flowers large. 1891.
- — *caucasicus*. See *G. caucasicus*.
- — *corcyrensis*. December. Corfu. Syns., *G. corcyrensis* and *G. præcox*.
- — *Etææ*. November. Macedonia. 1891.
- — *grandior*. White, greenish-yellow. Umbria, Italy. Syns., *G. umbricus* and *G. Imperati*.
- — *luteoens*. Inner segments tipped with yellow.
- — *Meliv'letii*. White, yellow.
- — *octobrensis*. October. Albania.
- — *Rache'tiæ*. October. Mount Hymettus. 1891.
- — *reflexus*. †. White. February. Mount Gargarus. 1818. Syn., *G. reflexus*.
- — *serotinus*. Autumn. 1888.
- — *Shaylo'ckii*. White, green. 1879.
- *O'lgæ*. White. Greece. 1888. Syns., *G. Reginaæ*, var. *Olgæ*, and *G. Olgæ*, var. *Reginæ*.
- *plica'tus*. †. White. February. Crimea. 1818. B. M. t. 2162.
- *reflexus*. See *G. nivalis*, var. *reflexus*.
- *Reginæ*. See *G. Olgæ*.
- *Scharlo'kii*. White, striped green outside. Europe. 1888.
- *umbricus*. See *G. nivalis*, var. *grandior*.

Galat'ella. (A diminutive of *gala*, milk, literally, *milky*; referring to the colour of the leaves. Nat. ord., *Compositæ*.) United to **Aster**.

Hardy herbaceous. Division in spring; common garden-soil.

- G. punctata*. 2½. Violet, yellow. August. Hungary. 1815. Syn., *Aster acris*, var. *punctatus*.

Gal'ax. (From *gala*, milk; referring to the milk-white flowers. Nat. ord., *Diapensiaceæ*; Tribe, *Galacnææ*.)

Fine bog plants. Divisions in spring; moist, sandy peat; in partially shady border.

- G. aphy'lla*. †. White. July. Carolina. 1786. B. M. t. 754. Syn., *Blandfordia cordata*. Andr. Rep. t. 343.

Galax'ia. (From *galaktido*, to abound in milk; referring to the juice. Nat. ord., *Iridææ*; Tribe, *Sisyrinchicææ*. Allied to *Romulea*.)

Greenhouse bulbs, from the Cape of Good Hope. Offsets; sandy peat, with a little fibry 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. gram'nea*. Light yellow. July. 1795. B. M. t. 1292.
- *grandiflo'ra*. †. Dark yellow. July. 1799. Andr. Rep. t. 164.
- *mucronula'ris*. †. Purple. July. 1799.
- *ovata*. †. Dark yellow. July. 1799. Jacq. Ic. t. 291.
- *plica'ta*. Jacq. Ic. t. 292. See *Lapeyrouisia fasciculata*.
- *versicolor*. †. Purple. July. 1799.

Galea'ndra. (From *galea*, a helmet, and *aner*, a stamen; referring to the crested male organ on the top of the column. Nat. ord., *Orchidææ*; Tribe, *Vandææ*—*Eulophicææ*. Allied to *Eulophia*.)

Stove terrestrial orchids. Fibry 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. Baué'ri*. †. Pink. August. Guiana. 1840.
- *crista'ta*. Purple. May. Cayenne. 1844.
- *Desacagnolle'na*. Ochre-brown; lip pale sulphur, purple. Para. III. Hort. xxxiv. t. 22.
- *Devonia'na*. 2. Purple, white. May. S. America. 1840. B. M. t. 4610.
- — *Delphi'na*. Red, edged with yellow; lip white, veined with purple. Venezuela. 1887. Lind. t. 80.
- *flave'ola*. Yellowish-brown; lip yellow, dotted with purple. Venezuela. 1887. Lind. t. 90.
- *gra'cilis*. 2. Green, yellow. May. Sierra Leone. 1822. B. R. t. 742. Now referred to *EULOPHIA*.
- *Harveya'na*. Sepia-brown. Tropical America.
- *ju'ncea*. Rosy-purple; lip with a darker edge. Indian Archipelago. 1847. Syn., *Phaius rosellus*. Fl. Ser. t. 301.
- *mi'naæ*. Yellowish-copper, whitish-purple. June. Columbia. 1874.
- *nivalis*. Olive-colour; lip white, violet. Tropical America. G. C. 1882, xvii. p. 536.

Galedu'pa. A synonym of **Pongamia**.

Gale'ga. Goat's Rue. (From *gala*, milk; referring to an old idea that the herbage was superior for milk-cows, goats, etc. Nat. ord., *Leguminosææ*; Tribe, *Galegeææ*.)

Hardy herbaceous, rather rambling perennials. Seeds sown in spring; division of the plant at the same time; common soil.

- G. biloba*. 3. Blue. July. 1823. Swt. Fl. Gard. t. 159.
- *officina'lis*. 4. Blue. July. Spain. 1568. Sibth. Fl. Gr. t. 726.
- — *alba*. 4. White. July. Spain.
- *orienta'lis*. 4. Blue. July. Levant. 1801. B. M. t. 4192.
- *persica*. 2. White. July. Persia. 1826. Swt. Fl. Gard. t. 244.
- — *lilacina*. 3. Lilac. June. Persia. 1830.
- *tricolor*. A synonym of *G. persica*.

EXCLUDED SPECIES.

- G. biflo'ra*. See *Tephrosia biflora*.
- *caribæa*. See *Tephrosia caribæa*.
- *cinerea*. Jacq. Ic. t. 575. See *Tephrosia cinerea*.
- *filiformis*. See *Galactia filiformis*.
- *grandiflo'ra*. See *Tephrosia grandiflora*.
- *longifolia*. See *Galactia longifolia*.
- *mucronata*. See *Tephrosia mucronata*.

Galeo'bdolon. Yellow Dead Nettle. (From *gale*, weasel, *bdolos*, fœtid; referring to the strong disagreeable odour of the plant. Nat. ord., *Labiatææ*; Tribe, *Stachydeææ*.) See **Lamium**.

- G. hirtum*. See *Lamium Galeobdolon*.

Galeo'ttia. (In honour of *M. H. Galeotti*, of Ghent, who travelled in Mexico. Nat. ord., *Orchidææ*; Tribe, *Vandææ*—*Cyrtopodiææ*.) Now united with **Zygopetalum**.

Stove orchid. See **ORCHIDS**.

- G. Bearu'monia*. Green, brown. Brazil. 1850.
- *fimbria'ta*. Syn., *Batemannia fimbriata*.

Galinsoga. (After *Don M. de Galinsoga*, a Spanish botanist. Nat. ord., *Compositæ*; Tribe, *Heliantheæ*.)

Weedy annual. Common soil; seeds.

G. parviflora. 1-2. Yellow, white. Autumn. Peru, naturalized, and a pest in the market gardens around Kew.

— *trilobata*. B. M. t. 1895. See *Tridax*.

Gali'pea. (The Indian name in South America. Nat. ord., *Rutaceæ*; Tribe, *Cuspariæ*. Allied to *Almeidea*.)

The Angostura bark is that of *G. trifoliata*. Stove evergreen shrubs. Cuttings of ripened shoots in sand, under a bell-glass, in April, and in heat; peat and loam.

G. macrophylla. 2. Pink. Brazil. B. M. t. 4948.

— *odoratissima*. 2. White. May. Rio Janeiro.

— *trifoliata*. 4. Green. Guiana. 1816.

Gal'ium. Bed Straw. (From *gala*, milk; referring to the flowers of *G. verum* having been used to curdle milk. Nat. ord., *Rubiaceæ*; Tribe, *Galiceæ*. 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. suaveolens*, 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. campanulatum. A synonym of *Asperula galioides*.

— *capillipes*. 1. White. October. Russia. 1838.

— *glaucum*. Synonymous with *Asperula galioides*.

— *græcum*. $\frac{3}{4}$. Purple. July. Candia. 1798.

— *persicum*. Yellow. July. Persia. 1837.

— *purpureum*. 1. Purple. July. Switzerland. 1831.

— *rubrum*. 1. Purple. July. Italy. 1597.

— *suaveolens*. 1. White. July. North Europe. 1821.

— *tauricum*. $\frac{3}{4}$. Yellow. July. Tauria. 1818.

— *Vaillantii*. 2. Green. May. England. Eng. Bot. ed. 3, t. 657.

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 quercu* is a familiar example; as, also, are the bunches 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., *Malpighiaceæ*; Tribe, *Malpighiæ*.)

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.

G. glandulosa. April. 1824.

— *glauca*. 8. 1829. Maund Bot. i. t. 18.

— *gracilis*. 8. 1848.

— *hirsuta*. September. 1824. Rev. Hort. 1847, p. 281.

Galto'nia. (Named after *Francis Galton*, author of a "Narrative of an Explorer in South Africa." Nat. ord., *Liliaceæ*; Tribe, *Scilleæ*. Allied to *Hyacinthus*.)

Hardy bulbs. Seeds and offsets. Rich leaf-mould and a little sandy peat. Planted in a sheltered border, they are exceedingly ornamental plants; the flowers are large and drooping.

G. andriacans. 3. White. Syn., *Hyacinthus andriacans*. Ref. Bot. t. 174.

— *clavata*. Greenish. S. Africa. B. M. t. 6885.

Requires protection.

— *princeps*. 3. White. Syn., *Hyacinthus princeps*. Ref. Bot. t. 175.

Gamma Moth. Just after sunset, in October, and hovering round flowers, may be seen this moth (*Noctua 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. See *Spath-anthem*.

Gamole'pis. (From *gameo*, to unite, and *lepis*, a scale; the scales of the involucre are united into a cup. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*. Allied to *Othonna*.)

Greenhouse dwarf showy shrub. Seeds; ripened cuttings, in sand, under a hand-glass. Rich sandy loam.

G. euryopoides. 1-2. Yellow. S. Africa. 1863. B. M. t. 6249.

Gangrene. See **Canker**.

Garcinia. Mangosteen. (Named after *Dr. Garcia*, an eastern traveller. Nat. ord., *Guttiferae*; Tribe, *Garcineæ*. Allied to *Mammea*.)

Of all the fruits in the East, that of *G. Mangostana* is the most highly extolled by Europeans; and the Gamboge from Siam is furnished by *G. Gambogia*. Stove evergreen trees. Cuttings of ripened shoots in sand, under a bell-glass, in a strong bottom-heat; peat and loam. *G. cornea*. 30. Yellow. Indian Archipelago. 1823. Wight Ic. t. 105.

— *Co'wa*. 20. Yellow. India. 1822.

— *Gambogia*. 30. Yellow. Indian Archipelago and Ceylon. 1820.

— *Mangostana*. 20. Purple. Java. 1789.

Garden. Is generally understood to mean that portion of the ground surrounding or near a residence, and designed either for the purpose of growing fruit and vegetables, or for the cultivation of flowers, ornamental trees, etc. These, however, will all be treated under their various heads. Fruit garden. Flowergarden. Pleasure garden, etc. etc.

Garden Balsam. *Justicia pectoralis*.

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 scientific aspects. 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 morphological—chemistry, especially as applied to the examination of organic nature. 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. *Phal'laris*.

Gardenia. (Named after *Dr. Garden*, an American. Nat. ord., *Rubiaceæ*; Tribe, *Gardenieæ*.)

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 coming 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.

GREENHOUSE.

- G. amœna*. 4. Pink. July. China. B. M. t. 1904.
 — *angustifolia*. 3. White. 1823.
 — *citriodorata*. B. M. t. 4987. See *Mitriostigma axillare*.
 — *florida*. 5. Pale yellow. August. China. 1754.
 — *Fortunei*. 5. White. July. North China. 1844.
 — *plœna*. 5. Pale yellow. August. China. 1754.
 — *simplici*. 5. White. January. E. Ind. 1851.
 — *variegata*. Leaves cream-spotted.
 — *globosa*. White. June. Caffraria.
 — *marubra*. White. Japan. 1866.
 — *radicans*. 1. White. June. China. 1804. B. M. t. 2627 and 3349.
 — *Rothmanni*. 10. Pale yellow. Cape of Good Hope. 1774. G. C. 1855, p. 436.
 — *spinosâ*. 8. White. July. China. 1800.
 — *Thunbergii*. 6. White. February. Cape of Good Hope. 1773.

STOVE.

- G. armata*. 10. White. July. W. Ind. 1813.
 — *campanulata*. E. Ind. 1815.
 — *Devonia*. B. R. 1846, t. 63. See *Randia*.
 — *dumetorum*. 6. White. July. E. Ind. 1777.
 — *fra-grans*. 4. White. E. Ind. 1820.
 — *hexagona*. White. Brazil. 1868.
 — *latifolia*. 7. Pale yellow. E. Ind. 1787.
 — *longistola*. Salis. Parad. t. 93. See *Randia*.
 — *longistyla*. B. M. t. 4322. See *Macrophyra*.
 — *lucida*. 4. White. E. Ind. 1819.
 — *malleifera*. B. M. t. 4307. See *Randia malleifera*.
 — *montana*. 8. White. E. Ind. 1819.
 — *nitida*. 3. White. October. Sierra Leone.
 — *octomeria*. B. M. t. 5410. See *Randia malleifera*.
 — *pavetta*. 6. White. July. E. Ind. 1817.
 — *Sherbournia*. 3. White, red. June. Sierra Leone. 1842. Climber. B. M. t. 4044. Now referred to AMARALLA.
 — *Stanleyana*. B. M. t. 4185. See *Randia Stanleyana*.
 — *tubiflora*. Andr. Rep. t. 183. See *Ozyanthus tubiflorus*.

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. *Allium ophioscorodon*.

Garden Swift Moth. (*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, snow-drops, 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 thorax 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 discrimi-

nation, 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.*

Gardoquia. (Named after *Gardoqui*, a Spaniard. Nat. ord., *Labiata*; Tribe, *Satureineæ*. Allied to *Melissa*.)

Of all the Lipworts, there is not a greenhouse rival to *G. Hookeri* when well grown. Greenhouse evergreens, except *G. betonicoides*, 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. betonicoides. B. M. t. 3860. See *Cedronella mexicana*.

- *discolor*. Purple. June. Chili. 1827.
 — *Gilliesii*. 2. Lilac. June. Chili. 1828.
 — *Hookeri*. B. M. t. 1747. See *Calamintha coccinea*.
 — *multiflora*. 1. Purple. April. Chili. 1837. B. M. t. 3772.

Garland Flower. *Pleura'ndra cneorum*.

Garlick. (*Allium sativum*.) Grows best on a light, rich soil.

Planting.—It is generally propagated by parting the roots, 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. *Crataeva*.

Garrya. (Named after *Mr. Garry*, of the Hudson's Bay Company, who facilitated Douglas' botanical researches in North West America. Nat. ord., *Cornaceæ*.)

Hardy evergreen shrubs. Layers in the autumn, and cuttings toward the end of summer, in sandy soil, under a hand-light; sandy loam.

- G. elliptica*. 6. Green. October. California. 1828. E. R. t. 1686.
 — *Fremonti*. N.W. America. G. C. 1881, xv. p. 431.
 — *laurifolia*. 6. White. Mexico. 1839.
 — *Macfadyniana*. 6. Green. Jamaica. 1842.
 — *macrophylla*. 6. Green. Mexico. 1846.
 — *Thureti*. Hybrid between *G. elliptica* and *G. Macfadyniana*. 1862. Rev. Hort. 1869, p. 17.

Garu'ga. (Its East Indian name. Nat. ord., *Burseraceæ*; Tribe, *Bursereæ*. 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.

G. madagascariensis. 50. May. Madagascar. 1824.

— *pinna*. 60. E. Ind. 1808. Wight Ic. tt. 1594-5.

Gas-heating. If the flame is supplied with air by the aid of a small pipe communicating with the outside of the house, is inclosed 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., *Liliaceæ*; Tribe, *Aloineæ*.)

Greenhouse evergreens, from the Cape of Good Hope, and all with red flowers, except where otherwise specified. Many of the species have been described and figured under the name of ALOE.

- G. acinacifolia*. 3. Orange. July. 1819.
 — *mi'nor*. 2. Scarlet. July. 1820.
 — *angula*. 2. July. 1791.
 — *mi'nor*. 1½. August. 1820.
 — *angustifolia*. 1½. June. 1731.
 — *longifolia*. 1½. July. 1796.
 — *apicrolæsa*. 2. 1879.
 — *Bayfieldii*. ¾. Syn., *Aloe Bayfieldii*.
 — *bicolor*. 1. 1824.
 — *brevis*. 3. July. 1809.
 — *peruviana*. 1½. Scarlet. July. 1820.
 — *canadensis*. 1. July. 1822.
 — *carinata*. 2. July. 1731.
 — *cheilophylla*. 1879.
 — *colubrina*. 2. Coral-red, green. S. Africa. 1873.
 — *conspicua*. 2. June. 1796.
 — *crassifolia*. 1½. July. 1820.
 — *Croucheri*. 2. Red, whitish. August. Natal. 1870.
 — *decipiens*. 2. Scarlet. July. 1820.
 — *dista*. 1½. Coral-red. S. Africa. 1876.
 — *dista*. 2. Scarlet. July. 1820.
 — *major*. 2. Scarlet. July. 1820.
 — *natale'nsis*. Natal. 1879.
 — *ensifolia*. 1. July. 1823.
 — *exava*. 1½. 1824.
 — *obliqua*. 1½. July. 1759.
 — *excolæsa*. 4. Coral-red. 1860.
 — *fasciata*. 1½. July. 1820.
 — *laxa*. 2. Scarlet. July. 1820.
 — *formosa*. 2. Scarlet. July. 1820.
 — *fuscopunctata*. 2. 1860.

- G. glabra*. 3. July. 1796.
 — *mi'nor*. 2. Scarlet. July. 1820.
 — *gracilis*. Natal. 1860.
 — *intermedia*. 2. July. 1700.
 — *asperrima*. 2. July. 1820.
 — *laevior*. 2. Scarlet. July. 1820.
 — *longior*. 2. Scarlet. July. 1820.
 — *lætopunctata*. 2. Scarlet. July. 1820.
 — *denticulata*. 2. Scarlet. July. 1822.
 — *laevis*. 1½. July. 1820.
 — *linita*. 2. Scarlet. July. 1820.
 — *maculata*. 2. Scarlet. July. 1759.
 — *fallax*. 2. Scarlet. July. 1820.
 — *marmorata*. 1½. 1879.
 — *molis*. 1. July. 1823.
 — *ni'gricans*. 2. July. 1790.
 — *marmorata*. 1½. July. 1820.
 — *polyspiata*. Algoa Bay. 1862.
 — *nitens*. 2. Scarlet. July. 1820.
 — *bre'vior*. 2. Scarlet. July. 1820.
 — *nitida*. 1. July. 1820.
 — *grandipunctata*. 1. July. 1822.
 — *obtusata*. 1½. July. 1820.
 — *obtusifolia*. 1½. July. 1796.
 — *palle'scens*. 1. Algoa Bay. 1860.
 — *pa'ra*. 2. Scarlet. July. 1820.
 — *parvifolia*. 1860.
 — *pethame'nsis* is a hybrid between *G. verrucosa* and *Aloe variegata*.
 — *pi'cta*. 3. Scarlet. July. 1820.
 — *planifolia*. Red, greenish. Summer. Algoa Bay. 1860.
 — *pluripunctata*. 2. Scarlet. July. 1820.
 — *porphyrophylla*. 1873.
 — *pu'chra*. 3. Scarlet. July. 1759.
 — *repens*. 1. July. 1821.
 — *retata*. 2. Scarlet. July. 1820.
 — *squarrosa*. 2½. 1879.
 — *strigata*. 2. Scarlet. July. 1820.
 — *subcarinata*. 2. Orange. July. 1818.
 — *viridior*. 2. Scarlet. July. 1820.
 — *subni'gricans*. 2. Scarlet. July. 1820.
 — *glabrior*. 2. Scarlet. July. 1826.
 — *subverrucosa*. 2. July. 1820.
 — *parvipunctata*. 2. July. 1820.
 — *sulcata*. 2. Scarlet. July. 1820.
 — *trigona*. 1½. July. 1820.
 — *unda*. 2. Scarlet. July. 1820.
 — *variolosa*. 1. Algoa Bay. 1860.
 — *venusta*. 2. Scarlet. July. 1820.
 — *verrucosa*. 2. July. 1731.

Gastonia. (After *Gaston de Bourbon*, son of Henri IV. of France. Nat. ord., *Araliaceæ*.)

G. cutispongia. See *Polyscias*.
 — *palmda*. E. R. t. 894. See *Trevesia*.

Gastroca'rpha. (From *gaster*, the belly, and *karpheos*, twigs. Nat. ord., *Compositæ*.)

G. runcinata. Swt. Fl. Gard. t. 229. See *Moscharia*.

Gastrochi'lus. (From *gaster*, belly, and *cheilos*, lip; in reference to the swollen lip. Nat. ord., *Scitamineæ*; Tribe, *Zingibereæ*. Allied to *Hedychium*.)

Must not be confounded with Don's *Gastrochilus*, a synonym of *Saccolobium*. Stove herbaceous perennials. Divisions of the plant as fresh growth is commencing; sandy loam.

- G. Jenkinsonii*. 2. Orange, crimson. June. E. Ind. 1841.
 — *longiflorus*. 2. Yellow, red. July. E. Ind. 1843.
 — *pulcherrimus*. 2. Yellow, pink. August. Rangoon. 1828.

Gastroglottis. See **Liparis.**

Gastrolobium. (From *gaster*, belly, and *lobos*, a pod; inflated seed-pod. Nat. ord., *Leguminosæ*; Tribe, *Podalyriææ*. Allied to *Eutaxia*.)

Greenhouse evergreens, from West Australia, and all with yellow flowers, except where otherwise mentioned. Seeds sown in a bed 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 fibry, with a portion of silver sand, and small pieces of charcoal; impatient of sour, stagnant soil.

G. acutum. B. M. t. 4040. See *Oxylobium acutum.*

— *bilobum.* 2. May. 1803. B. M. t. 2212.

— *calycinum.* April.

— *cordatum.* See *Oxylobium spectabile.*

— *epacrioides.* 1847.

— *obovatum.* April.

— *ovalifolium.* Lem. Jard. Fl. t. 247.

— *oxylobioides.* April. 1840.

— *pyramida* le. Syn., *Oxylobium ovalifolium* of Paxt. Fl. Gard. ii. t. 86.

— *retusum.* See *Oxylobium retusum.*

— *spathulatum.* 1.

— *spectabile.* Orange, crimson. 1859.

— *spinosum.* 3. April. 1840. Paxt. Mag. xi. p. 171.

— *trilobum.*

— *velutinum.* Orange. April. 1852. Paxt. Fl. Gard. iii. p. 76.

— *villosum.* 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., *Amaryllidææ*. A sub-genus of *Cyrtanthus*.)

Dr. Burchell discovered the pretty bulb, *clavatum*, 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, fibry peat, and dried leaf-mould; plenty of water when growing, and dry when at rest.

G. clavatum. B. M. t. 2291. See *Cyrtanthus uniflorus*.

— *sanguineum.* See *Cyrtanthus sanguineus*. B. M. t. 5218.

— *stamineum.* Rosy-crimson. S. Africa. 1871.

Gaten or **Gater-tree.** *Co'rnus sanguinea.*

Gatherer. The hand is the best instrument for collecting fruit into the basket; but to avoid the danger and

No. 1.



No. 2.



breakage of branches incidental to using long ladders, the following instruments have been designed. No. 1 for apples

and other single fruit; No. 2 for grapes, the stalk of which it severs and retains in its grasp.

Gathering. See **Fruit-room.**

Gaudichaudia. (Named after *C. Gaudichaud*, a French Naturalist. Nat. ord., *Malpighiaceæ*; Tribe, *Gaudichaudææ*.)

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.

G. cynanchoides. 10. Yellow. Mexico. 1824.

Gaultheria. (Named after *Dr. Gaulther*, a Canadian. Nat. ord., *Ericaceæ*; Tribe, *Andromedææ*. Allied to *Pernettia*.)

The oil of Wintergreens used to flavour drugs, and also by perfumers, is obtained from the berries of *G. procumbens*. Chiefly by layers and seeds. *G. procumbens* requires a moist peat-soil; *G. Shallon* 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. cocci'nea. 1. Pink. Caraccas. 1849.

— *nummularioides.* White, or rosy-pink.

Himalayas. Syn., *G. nummulariæ*

(Paxt. Fl. Gard. ii. p. 164) and *G.*

repens.

— *procumbens.* ½. White. July. N. Amer. 1762.

— *Shallon.* 4. White. May. N. Amer. 1826. B. M. t. 2843.

GREENHOUSE.

G. anti'poda. 6. White. New Zealand. 1820.

— *bracteata.* Red. July. Columbia. 1848.

B. M. t. 4461.

— *cordata.* White. May. Japan.

— *discolor.* White, pink. Bootan.

— *ferrugi'nea.* Pink. June. Brazil. 1852.

— *fragrans.* See *G. fragrantissima.*

— *fragrantissima.* White. Himalaya. 1869. Syn., *G. fragrans.*

— *glabra.*

— *caracasana.* White. Columbia. 1874.

— *insipida.* 6-8. White. Columbia. 1873.

Half-hardy.

— *Lindenia'na.* Pure white. Venezuela. Paxt. Fl. Gard. i. p. 112.

— *serpyllifolia.* A synonym of *Phalerocarpus hispidulus*.

Gau'ra. (From *gauros*, superb; referring to the beauty of some of the species. Nat. ord., *Onagraceæ*. Allied to *Stenosiphon*.)

Annual, biennial, and perennial herbs—are all hardy, and all may be sown in April, and the perennials may also be divided. Sandy, rich loam suits them all.

G. angustifolia. 2. Pink. August. Carolina. Perennial. Syn., *G. fruticosa*.

— *biennis.* 5. Red, white. September. N. Amer. 1762. B. M. t. 389.

— *cocci'nea.* ½. Scarlet. September. Louisiana. 1811. Perennial.

— *fruticosa.* Jacq. Ic. t. 457. See *G. angustifolia*.

— *Lindhei'meri.* 4. White, red. July. Texas. 1850. Paxt. Fl. Gard. iii. p. 127. Perennial.

- G. muta* *bills*. 2. Yellow. July. N. Amer. 1795. Annual.
 — *œnothærofolia*. 1½. Purple. July. S. Amer. 1816. Biennial.
 — *parviflora*. 4. Yellow. August. N. Amer. 1835. Annual. B. M. t. 3506.
 — *simulata*. Blush. July. N. Amer. 1826. Biennial.
 — *tripe* *tala*. 1½. Pink. August. Mexico. 1804. Annual.

Gau'ssia. (Commemorative. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)
 Stove Palms.

- G. Ghiesbreghtii*. W. Indies. Syn., *Chamædorea Ghiesbreghtii* and *Oreodoxa ventricosa*.
 — *princeps*. W. Indies.

Gaylussacia. (Named after M. Gay Lussac, a celebrated French chemist. Nat. ord., *Vacciniaceæ*. Allied to *Vaccinium*.)

Cranberry-like half-hardy evergreens. Seeds and layers; sandy peat, a little loam, and leaf-mould; require the protection of a pit or the greenhouse in winter.

- G. dumosa*. 1-5. White to rose-red. June. N. Amer. 1774. Syn., *Vaccinium dumosum*. B. M. t. 1106.
 — *frondosa*. 3-6. Greenish-purple. May. N. Amer. 1761. Syn., *Vaccinium frondosum*. Andr. Rep. t. 140.
 — *Lindenia* *na*. White. Caraccas. 1850.
 — *nitida*. Scarlet. Bahia. 1853.
 — *nummularia*. White. Himalaya. 1851.
 — *pseudovaccinium*. 1-2. Crimson. May. Brazil. 1843. B. R. 1844, t. 62. Syn., *Vaccinium brasiliense*.
 — *resinosa*. 1-3. Reddish. May. N. Amer. 1782. Syn., *Vaccinium resinosum*. B. M. t. 1288.
 — *rosea*. Rose. May. Pern. 1843.

Gazania. (From *gazza*, richness; in reference to the large gaudy flowers. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*. Allied to *Gorteria*.)

Natives of Cape of Good Hope. 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. Useful plants on sunny borders in summer.

- G. heterophylla*. ½. Orange. July 1812. Herbaceous.
 — *longica* *pa*. ½. Orange-yellow. July. Algoa Bay.
 — *pavonia*. 1½. Yellow. July. 1804. B. R. t. 35. Syn., *Gorteria pavonia*, Andr. Rep. t. 523.
 — *pinna* *ta integrifolia*. Yellow. 1881.
 — *ringens*. 1. Orange. June. 1755. Syn., *Gorteria ringens*, B. M. t. 90.
 — *spaldens*. 1½. Orange, black, white. Perhaps a hybrid.
 — *subulata*. 1. Yellow. July. 1792.
 — *uniflora*. 1. Yellow. July. 1816. B. M. t. 2270.

Gazania'opsis. (From *Gazania*, and *opsis*, like; resembling the genus *Gazania*. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*.)

Half-hardy perennial. A sunny position in common soil. Seeds; cuttings under a hand-light.

- G. stenophylla*. Leaves bronzy-green to golden yellow, white beneath. Garden hybrid. 1882.

Geisso'is. (From *geisson*, the house tiles; alluding to the imbricated seeds. Nat. ord., *Saxifragaceæ*; Tribe, *Cunoniaceæ*.)

A magnificent stove tree. Racemes of flowers produced on the old wood. Cuttings under a hand-glass in heat. Peat and loam.

- G. racemosa*. Crimson. New Caledonia. 1851. Ill. Hort. ser. 2, t. 385.

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., *Acanthaceæ*; Tribe, *Justicieæ*. Allied to *Aphelandra*.)

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. aurantiaca*. 2. Orange, red. Autumn. 1848.
 — *coccinea*. Scarlet. Autumn. Jamaica. Syn., *Eranthemum coccineum* and *Salpiscantha coccinea*. B. M. t. 4158.
 — *fulgida*. Scarlet. August. W. Ind. 1804.
 — *longiflora*. 3. Scarlet. July. Brazil. 1826. B. R. t. 1045.

Geissorhi'za. Tile Root. (From *geisson*, a tile, and *rhiiza*, a root; referring to the dry coats which cover the fleshy roots like tiles on a roof. Nat. ord., *Iridææ*; Tribe, *Iziææ*. Allied to *Trichonema*.)

Half-hardy bulbs, from South Africa. Except when planted out on a border, in front of a greenhouse, or in frames, 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. cilicaris*. 1. May.
 — *erecta*. See *Hesperantha*.
 — *exaltata*. ½. White. May. 1789.
 — *grandis*. 1. Straw, crimson. May. S. Africa. 1866. B. M. t. 5877.
 — *hirta*. 1. White. May. 1825.
 — *humilis*. Yellow, rose. May. 1822.
 — *imbricata*. 1. Variegated. May. 1825.
 — *inflata*. 1½. Yellow, purple. May. 1824. Syn., *G. vaginata*.
 — *juicea*. 1. White. July. 1822.
 — *Larochetii*. ¾. Violet. May. 1790.
 — *obtusata*. 1. Yellow. May. 1801. B. M. t. 672.
 — *secunda*. 1. White. May. 1795. Syn., *Ixia secunda*. B. M. t. 1105.
 — *albescens*. 1. White. May. 1795.
 — *œrulea*. 1. Blue. May. 1795.
 — *setacea*. 1. Sulphur. July. 1809. B. M. t. 1255.
 — *subulata*. 1. Yellow. May. 1825.
 — *vaginata*. Swt. Fl. Gard. t. 138. See *G. inflexa*.

Geitonople'sium. (From *geiton*, a neighbour, and *plesion*, near; alluding to its affinity with the genus *Eustrephus*. Nat. ord., *Liliaceæ*; Tribe, *Luzuriageæ*.)

Greenhouse climber. For cultivation, see *EUSTREPHUS*.

- G. cymosum*. Green. New Holland. 1832.

Ge'la. (From *geleo*, to shine; referring to the surface of the leaves. Nat.

ord., *Rutaceæ*.) By some authorities united to **Acronychia**.

Greenhouse evergreen shrubs. Cuttings of half-ripened shoots in May, under a hand-light, in sandy soil; sandy peat.

G. lanceolata. 4. Yellow. Cochinchina. 1820.
— *oblongifolia*. See *Ximelia oblongifolia*.

Gela'sine. (From *gelasinos*, a smiling dimple; referring to the flowers of these pretty bulbs. Nat. ord., *Iridææ*; Tribe, *Sisyrinchieæ*. Allied to *Nemastylis*.)

A bulb, from the Rio Grande in South America, almost, if not altogether, hardy; but *Trichone'ma*, so well known, will give a good idea of it; light, sandy soil suits it best. It seeds freely, and seedlings flower the second season from the sowing, and, like most Irids, they increase by offsets.

G. azurea. 1. Blue. May. S. Amer. 1838.
B. M. t. 3779.

Gelse'mium. (From *gelsemius*, an Italian name of the Jasmine; alluding to the similarity of the flowers. Nat. ord., *Loganiaceæ*; Tribe, *Gelsemieæ*.)

A hardy climbing shrub, commonly called Carolina Jasmine. Cuttings under a hand-glass. Rich loam.

G. nitidum. Yellow. June. N. America. 1840.
Bentl. and Tr. t. 181.

Genetyllis. (From *genetyllis*, protective of birth; alluding to the form and position of the flowers. Nat. ord., *Myrtaceæ*.) Now united to **Darwinia**.

Greenhouse evergreens. Cultivated like the Myrtle.

G. fimbriata. B. M. t. 5864. See *Darwinia fimbriata*.

— *fuchsioïdes*. 3. Scarlet. 1855. L'Hort. Fr. 1864, t. 15. Syn., *Darwinia Hookeriana*.

— *macrostegia*. 2. Crimson. May. Western Australia. 1854. Syn., *Darwinia macrostegia*.

— *tulipifera*. 2½. Straw, crimson. April. Swan River. 1854. B. M. t. 4558. Syn., *Hedera-roma tulipifera*.

Geni'pa. Genip-tree. (From *Genepapa*, the native name. Nat. ord., *Rubiaceæ*; Tribe, *Gardenieæ*. Allied to *Gardenia*.)

The Genipap, a South American fruit, is produced by *G. americana*; 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.

G. americana. 30. Pale yellow. S. Amer. 1779.

— *edulis*. Synonymous with *Alibertia edulis*.

— *esculenta*. 20. China. 1823.

— *Meriana*. 10. White. Cayenne. 1800.

— *oblongifolia*. 20. Yellow. Peru. 1821.

Geni'sta. (An old Latin name used by Virgil. Nat. ord., *Leguminosæ*; Tribe, *Genistææ*. Allied to *Spartium*.)

Low shrubs, all with yellow flowers. 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 increased 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. *Lusit'nicæ* and *radia'ta* look interesting even in winter, when the leaves are gone. *A'nglica* is the rough-looking spring dwarf-bush that blooms so freely in our moist moors. *Tinc-to'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 *triquetra*, and its next-door neighbour, *triangularis*. Common, loamy soil suits all the hardy ones.

GREENHOUSE DECIDUOUS.

G. congesta. 4. June. Tenerife.
— *monosperma*. 4. July. South Europe. 1690.
B. R. t. 1918. Hardy against a wall in the South of England.
— *sphaerocarpa*. See *Retania sphaerocarpa*.

GREENHOUSE EVERGREENS.

G. bracteolata. 2. May. 1823. Maund Bot. v. t. 235.
— *canarie'nsis*. 2. June. Canaries. 1659.
B. C. t. 1201.
— *clava'ta*. 3. June. Mogadore. 1812.
— *ferox*. 1½. July. Barbary. 1800.
— *linifolia*. 3. June. Spain. 1739. B. M. t. 442.
— *Owenia'na*. A hybrid between *G. Everstiana* and *G. elegans*. 1889.
— *Spachia'na*. 2. Canaries. B. M. t. 4195.
— *umbellata*. 3. June. Barbary. 1799.

HARDY DECIDUOUS.

G. aphylla. A synonym of *Eremospartum aphyllum*.
— *humifusa*. 1. July. France. 1819. Trailer.
— *scorpius*. 4. April. South Europe. 1570.
— *tetragona*. 1. July. Podolia. 1822. Trailer.
— *virgata*. A synonym of *Eremospartum aphyllum*.

HARDY EVERGREENS.

G. æthne'nsis. 3. July. Sicily. 1816. Synonymous with *Dendrospartum æthnense*.
— *Amsa'nctia*. Yellow. 1884.
— *Andrea'na*. Wings bright chestnut. Normandy. Rev. Hort. 1886, p. 372. Syn., *Sarcothamnus scoparius*, var. *Andreana*.
— *a'nglica*. 2. July. Britain.
— *angulata*. 3. June. Maryland. 1739. A synonym of *Cytisus angulatus*.
— *Anza'nica*. 4. July. Italy. 1818. Swt. Fl. Gard. t. 266.
— *ca'nadicans*. 2. May. Spain. 1735. Wats. Dendr. t. 80.
— *capitata*. Perhaps a synonym of *G. clavata*.
— *cine'rea*. 4. July. South Europe. Wats. Dendr. t. 76.
— *decumbens*. ½. June. Burgundy. 1775. Trailer. A synonym of *Cytisus decumbens*. B. C. t. 718.
— *diffusa*. 3. June. Hungary. 1816.
— *florida*. 6. July. Spain. 1752.
— *fragrans*. Syn., *Spartium fragrans*.
— *germanica*. 2. July. Germany. 1773.
— *inermis*. 2. July. Germany.
— *hispanica*. 2. July. Spain. 1759. Jacq. Ic. t. 557.
— *horrida*. 2. July. Pyrenees. 1821.
— *italica*. 3. July. Italy.
— *lusit'nicæ*. 2. May. Portugal. 1771.
— *ma'nica*. 3. July. South Europe. 1816.
— *ovata*. 3. July. Hungary. 1816. B. C. t. 482.
— *parviflora*. 3. July. South Europe. 1817. Synonymous with *Gonicystis angulatus*.

- G. patens*. 2. June. Spain.
 — *patula*. 3. July. Caucasus. 1818.
 — *pilos*a. 6. June. England. Eng. Bot. ed. 3, t. 327. Green weed.
 — *polygalæfolia*. 3. July. Spain. 1820.
 — *procœ*. A garden hybrid. 1882.
 — *procumbens*. 1½. July. Hungary. 1816. Traller. B. R. t. 1150. A synonym of *Cytisus decumbens*.
 — *purpurea*. Yellow. April. S. Europe.
 — *radia*ta. 1½. July. Italy. 1758.
 — *sagitt*alis. ½. June. Germany. 1570.
 — — *minor*. May. Traller.
 — *scarios*a. 6. July. Italy. 1821. Syns., *G. triangularis* and *G. trigueta*. B. C. t. 1135.
 — *serice*a. 3. June. Austria. 1812. Jacq. Ic. t. 141.
 — *sibirica*. 2. July. Siberia. 1785.
 — *silvestris*. 2. July. Hungary. 1818.
 — *tinctoria*. 3. July. Britain. Eng. Bot. ed. 3, t. 328.
 — — — *florè-plèno*. 2. July.
 — — — *hirsu*ta. 2. July. Britain.
 — — — *latifol*ia. 2. July. Auvergne. 1824.
 — — — *pratensis*. 2. July. Italy.
 — *triacanthos*. 2. July. Spain.
 — — — *interru*pta. 2. May. Tangier.
 — *triangularis* and *triquetra*. B. M. t. 314. See *G. scariosa*. Hungary. 1815.
 — *viscosa*. B. M. t. 2135. See *Izanthos*.

Gentiana. Gentian. (Named after *Gentius*, king of Illyria, who first experienced the virtue of Gentian. Nat. ord., *Gentianaceæ*; Tribe, *Swerticeæ*.)

The root of *G. lutea* is the true Gentian of the druggists, an intense bitter, only exceeded by that of *Aletris farinosa*, a little North American Bloodroot, the most intense bitter known, and by *Quassia amara*. 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 *acaulis*, make nice edgings to walks and borders. The rarer species require light sandy peat, and all should be periodically raised from seeds.

HARDY ANNUALS.

- G. amarella*. ½. Purple. August. Britain.
 — — *lutea*. ½. Yellow. August.
 — *angustifolia*. ½. Purple. July. N. Amer. 1812.
 — *carinthiaca*. See *Pleurogyne carinthiaca*.
 — *germanica*. ½. Blue. August. Germany. 1818.
 — *glacialis*. ½. Blue. July. Alps. 1819.
 — *hymilis*. ½. Purple. April. Caucasus. 1824.
 — *Moorecroftiana*. ½. Pale blue. W. Himalayas. B. M. t. 6727.
 — *nivalis*. ½. Blue. August. Scotland.
 — *obtusifolia*. ½. Yellow. July. Switzerland. 1826.
 — *pratensis*. ½. Blue. July. Siberia. 1817.
 — *prostrata*. ½. Blue. Corinthian Alps, Siberia, and N. America. 1888.

HARDY BIENNIALS.

- G. barbat*a. ½. Blue. August. Siberia. 1764.
 — *caucasic*a. ½. Violet. July. Caucasus. 1804. B. M. t. 1038.
 — *conferta*. Blue. August. Altaia. 1827.
 — *crinit*a. ½. Blue. July. N. Amer. 1804. B. M. t. 2031.
 — *uliginosa*. Blue. August. Germany. 1827.
 — *uniflora*. Violet. July. Carpathian Mountains. 1828.

HARDY HERBACEOUS PERENNIALS.

- G. aestiva*. ½. Blue. July. Austria. 1818.
 — *acaulis*. ½. Blue. May. Wales. B. M. t. 52. There are many varieties of this species.

- G. adscendens*. ½. Blue. July. Siberia. 1799. B. M. t. 705 and 723.
 — — — *decumbens*. ½. Blue. June. Siberia. 1799.
 — *affinis*. 1-1½. White, striped greenish outside. Rocky Mountains?
 — *alguida*. ½. White. July. Siberia. 1808.
 — *alpina*. ½. Blue. July. Alps. 1817. B. C. t. 476.
 — *altaica*. 1. Purple. May. Siberia. 1824.
 — *Andrusii*. 1-2. Blue. N. America. 1776. Syn., *G. saponaria* of most gardens. The Closed Gentian.
 — *angulosa*. ½. Purple. Altai. 1824.
 — *angustifolia*. ½. Blue. May. Alps. 1819.
 — *arverne*nsis. Deep blue. Allied to *G. Pseudomonanthe*, Fl. and Pom. 1882, p. 75.
 — *asclepiadea*. 1. Blue. July. Austria. 1629. B. M. t. 1078.
 — — — *alba*. 2. White.
 — — — *major*. 2. Blue. July.
 — — — *ochroleuca*. 1. Cream. July.
 — *au*rea. ½. Yellow. August. Norway. 1823.
 — *barbata*. 1. Blue. June to August. Caucasus. 1890.
 — *bavaria*. ½. Blue. July. Europe. 1775. B. C. t. 1256.
 — *Bigelovii*. 1. Violet. New Mexico. B. M. t. 6874.
 — *biloba*. 2½. Yellow. July. Alps. 1820.
 — *Burseri*. 2. Yellow. July. Pyrenees. 1820.
 — *calycosa*. ½. Blue, dotted with white. W. United States. 1883. Gf. t. 1270, a-c.
 — *campanulata*. 2. Sulphur. July. Switzerland. 1819.
 — *carpathica*. Carpathian Alps. Jard. 1888, p. 113.
 — *Catesbœi*. 1½. Blue. July. N. Amer. 1803. Andr. Rep. t. 418.
 — *Charpentieri*. Yellow, dotted with red. Swiss Alps. 1888.
 — *ciliata*. ½. Blue. Germany. 1759. B. M. t. 639.
 — *clavata*. ½. Blue. 1820.
 — *Christi*. ½. Dark blue. Alps. 1888.
 — *crucifolia*. 1. Dark blue. July. Austria. 1596.
 — *Fetissovi*. Blue. Turkestan. 1882. Gf. t. 1069, f. 1-5.
 — *imbria*ta. ½. Blue. August. Caucasus. 1818. Andr. Rep. t. 509.
 — *florida*. Yellow.
 — *foliosa*. Lilac. Andes of Pichincha at the snow line.
 — *Fortunei*. Lilac. Siberia.
 — *frigida*. ½. White. July. Syria. 1817.
 — *Fracchi*. Stemless. Blue. Alps. 1888.
 — *Gaudiniana*. Lurid purple. Swiss Alps. Syn., *G. spuria*.
 — *Gebleri*. Blue. August. Russia. 1832.
 — *gelida*. 1. Blue. July. Siberia. 1807. Paxt. Mag. vii. p. 5.
 — *hybrida*. 2½. Yellow, purple. July. Switzerland. 1817.
 — *imbria*ta. ½. Blue. July. Switzerland. 1819.
 — *incarnata*. 2. Pink. September. N. Amer. 1812. B. M. t. 1856.
 — *intermedia*. 2. Purple. September. N. Amer. 1820. B. M. t. 2303.
 — *Kesselringi*. ½. Blue. Turkestan. 1882. Gf. t. 1087, f. 3-4.
 — *Kochiana*. Stemless. Dark blue, with five dark-green spots. Alps. Wein. Gart. Zeit. 1888, p. 181.
 — *Kummeriana*. Hybrid between *G. lutea* and *G. pannonica*. N. Tyrol. 1888. Syn., *G. Hængsti*.
 — *Kuroo*. ½. Blue, white. Autumn. W. Himalaya. 1879.
 — *linedris*. 1. Blue. August. Carolina. 1816.
 — *lutea*. 4. Yellow. July. Alps. 1596.

- G. macrophylla*. 1. Blue. July. Siberia. 1796. B. M. t. 1414.
 — *ochroleuca*. 2. Yellowish. N. Amer. 1803. B. M. t. 1551.
 — *ornata*. $\frac{1}{2}$. Blue. May. Himalaya. 1880. B. M. t. 6514.
 — *pannonica*. 1. Purple. July. Alps.
 — *plebeia*. $\frac{3}{4}$. Dark blue. J. ly. Germany. 1834.
 — *Pneumonanthe*. $\frac{1}{2}$. Blue. August. England.
 — *floréalbo*. $\frac{1}{2}$. White, green. August. Germany. 1834.
 — *gutta*. $\frac{1}{2}$. Blue. August. B. M. t. 1101.
 — *pseudopneumonanthe*. $\frac{1}{2}$. Blue. August. N. Amer. 1800.
 — *puila*. $\frac{1}{2}$. Blue. May. Switzerland. 1817.
 — *punctata*. 3. Yellow. July. Alps. 1775.
 — *purpurea*. 3. Blue. July. Alps. 1768. Andr. Rep. t. 117.
 — *floréalbo*. 2. White. July. European Alps. 1823.
 — *pyrenæica*. $\frac{1}{2}$. Blue. July. Pyrenees. 1825.
 — *quinquefolia*. $\frac{1}{2}$. Blue. August. N. Amer. 1824. B. M. t. 3496.
 — *rubra*. Yellow, purplish outside. Swiss Alps. Syn., *G. Thomasii*.
 — *saponaria*. 2. Blue. August. N. Amer. 1776. B. M. t. 1039. *G. Andrewsii* is often cultivated under this name.
 — *alba*. White. 1880.
 — *floréalbo*. $\frac{1}{2}$. White. September. N. Amer. 1826.
 — *septemfida*. $\frac{3}{4}$. Blue. July. Persia. 1804. B. M. t. 1229 and 1410.
 — *carcasica*. Blue. August. Caucasus.
 — *cordifolia*. 1. Blue. Asia Minor. Syn., *G. gelida* of some gardens.
 — *gutta*. $\frac{1}{2}$. Blue. June. Levant. 1804.
 — *Thomasii*. See *G. rubra*.
 — *triflora*. $\frac{1}{2}$. Blue. July. Siberia. 1807.
 — *umbellata*. $\frac{1}{2}$. Purple. June. Caucasus. 1823.
 — *utriculosa*. $\frac{1}{2}$. Purple. April. S. Europe. 1822.
 — *verna*. $\frac{1}{2}$. Blue. May. England. B. M. t. 491.
 — *floréalbo*. $\frac{1}{2}$. White. April.
 — *Walujewi*. Whitish or pale blue. Turkestan. 1884. Gfl. t. 1140.

Geodorium. (From *ge*, the earth, and *doron*, a gift. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Cymbidiææ*. Syn., *Otandra*.)

Stove terrestrial orchids.

- G. citrinum*. 1. Yellow. October. E. Indies. 1800. B. M. t. 2195.
 — *dilatatum*. 1. Pale flesh-colour. Summer. India. B. R. t. 675.
 — *Duperrea*. Cochinchina. 1882.
 — *fucatum*. 1. Pink. July. Ceylon. 1832. B. R. t. 1687.

Geoffræa. Bastard Cabbage-tree. (Named after *Br. Geoffroy*, of Paris, author of "Materia Medica." Nat. ord., *Leguminosææ*; Tribe, *Dalbergiææ*. Allied to *Andira*.)

Stove evergreen trees. Cuttings of ripened shoots in sand and peat, and under a bell-glass; peat and loam.

- G. Bredemeyeri*. See *G. superba*.
 — *inermis*. See *Andira inermis*.
 — *racemosa*. See *Andira racemosa*.
 — *spinos*. 30. Yellow. New Grenada. 1818.
 — *superba*. Yellow. July. Caraccas. 1824. Syn., *G. Bredemeyeri*.
 — *violacea*. 20. Violet. Guiana. 1823.

Geoffroya. See *Geoffræa*.

Geometra. The *Amphidasis* and *Hybernaria* of some entomologists form a genus of moths including *G. polosaria*, 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.

G. 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 cloth dipped in tar, and bound round a tree's stem, prevents its ascent.

G. pinaria attacks the pine and fir tribe.

Geonoma. (From *genomos*, skilled in agriculture; as much as to say that only a skilful planter could increase these palms. Nat. ord., *Palmeææ*; Tribe, *Areceææ*.)

Stove palms. Seed; rich, sandy loam.

- G. acapulco*. 5. Brazil. 1823.
 — *acutiflora*. 8. French Guiana. 1846.
 — *Carderi*. See *Prestea Carderi*, B. M. t. 7108.
 — *corallifera*. $\frac{5}{8}$. Red.
 — *devesa*. 3. French Guiana. 1846.
 — *fragilis*. French Guiana. 1849.
 — *Ghiesbreghtii*. See *Calyptrogyne Ghiesbreghtiana*.
 — *gracilis*. Brazil. 1874.
 — *Hérbertii*. Garden variety. 1839.
 — *imperialis*. S. America. 1868.
 — *intermedia*. Leaves light green; leaf-stalks reddish-brown. 1832.
 — *interrupta*. 6. Peru. 1849.
 — *lacera*. Central America. 1869.
 — *macrostachys*. 5. Brazil. 1828.
 — *magniflora*. See *Calyptrogyne Ghiesbreghtiana*.
 — *Martiana*. Costa Rica.
 — *Seemanni*. Central America. 1873.
 — *maxima*. 12. French Guiana.
 — *pinnatifrons*. 15. Caraccas. 1821.
 — *Portiana*. New Grenada. 1853.
 — *putchella*. New Grenada. 1853.
 — *Schattiana*. Brazil. 1820.
 — *simplicifrons*. 5. Trinidad. 1818.
 — *Spixiana*. 15. Brazil. 1824.
 — *undata*. Venezuela. 1850.
 — *Verschaffeltii*. See *Calyptrogyne Ghiesbreghtiana*.
 — *zamorensis*. Peru. 1869.

Georchis. See *Goodyera*.

Georgina. 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 *Wilde* nor *Sprengel's* *Georgina* appeared for more than eighty years subsequently. *G. variabilis* is a synonym of *Dahlia variabilis*.

Geranium. Crane's Bill. (From *geranos*, a crane; referring to the beak-like torus, or projection beyond the seeds. Nat. ord., *Geraniaceæ*; Tribe, *Geraniæ*.) See also **Pelargonium**.

The name *Geranium* has often been used in gardens and garden literature to include numerous plants belonging to the genus *Pelargonium*. The differences between these two genera may be stated thus:

Geranium.—Flowers regular, without a spur. Stamens, ten.

Pelargonium.—Flowers irregular, rarely sub-regular. Posterior sepal, with a spur united to the pedicel. Stamens, five or fewer.

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:—*sylda ticum*, *arne num*, *sanguineum*, *lanceolatum*, *Wallichia num*, *prate nse flo-re-ple no*, *dahuricum*, *pilosum*, and *cristatum*, etc.

HALF-HARDY HERBACEOUS.

- G. aconitifolium*. 1½. White. June. Switzer land. 1775.
 — *argenteum*. ½. Striped. July. S. Europe. 1699. Jacq. Ic t. 546.
 — *altaticum*. 1-1½. Purple. Algeria. June. 1878.
 — *cafrum*. ¾. Lilac. S. Africa. 1862.
 — *canescens*. ½. Pink. June. Cape of Good Hope. 1787.
 — *inca num*. ½. Pink. June. Cape of Good Hope. 1701.
 — *mexicanum*. 1. Pale purple. August. Mexico. 1832.
 — *ornithopodium*. White, with red veins. S. Africa. 1872.

HARDY ANNUALS.

- G. lanuginosum*. Rose. July. N. Amer. 1817. Jacq. H. Schenb. t. 140.
 — *patens*. Pale. June. Iberia. 1827.

HARDY HERBACEOUS.

- G. affine*. 1. Blue. June. Altaia. 1832.
 — *albifolium*. 1½. Whitish. July. N. Amer. 1827. B. M. t. 3124.
 — *altaticum*. 1½. Pale red. July. Altaia. 1818.
 — *anemonefolium*. 3. Red. August. Madeira. 1788. Greenhouse evergreen. B. M. t. 206. Swt. Ger. t. 244.
 — *angulatum*. 1. Purple. June. 1789. B. M. t. 208.
 — *arne num*. 2. Purple, with black veins. Nepaul. 1874. Syn., *G. Backhousianum*.
 — *asphodeloides*. Levant. 1828.
 — *batrachiodes*. 1. Blue. July. Europe. 1817.
 — *caeruleum*. 1. Blue. July. Dahuria. 1824.
 — *cine reum*. 1. Red. August. Pyrenees.
 — *collinum*. 1. Purple. July. Siberia. 1815.
 — *cristatum*. 1½. Red. July. Iberia. 1820. B. M. t. 3732.
 — *dahuricum*. 1. Purple. June. Dahuria. 1820.
 — *erianthum*. 2. Crimson. June. California. 1839. B. R. 1842, t. 52.

- G. eriostemon*. 1½. Blue. July. Siberia. 1822. Swt. Ger. t. 197.
 — *pauciflorum*. 1½. Pale blue. August. Nepaul. 1822.
 — *fulvum*. 1½. Brown. July. South Europe. 1759.
 — *gymnocarion*. 1. Blue. July. Iberia. 1814.
 — *ibericum*. 1½. Blue. July. Levant. 1802. B. M. t. 1386.
 — *Lamberti*. 1½. Red. July. Nepaul. 1824.
 — *lanceolatum*. ¾. Striped. June. Britain. Trailing.
 — *longipes*. 1. Lilac. July. 1823.
 — *lucidum*. ½. Pink. June. Britain.
 — *macrorrhizum*. 1½. Purple. June. Italy. 1576. Jacq. Ic. t. 134.
 — *maculatum*. ¾. Purple. July. N. Amer. 1732. Swt. Ger. t. 332.
 — *multiflorum*. 1. Red. August. Cape of Good Hope. 1817. Swt. Ger. t. 245.
 — *nemorosum*. 1. Purple. July. Italy. 1821.
 — *nepalense*. ¾. Red. June. Nepaul. 1818. Swt. Ger. t. 12.
 — *pahistretum*. 2. Purple. July. Germany. 1732.
 — *parviflorum*. ¾. Purple. June. Van Diemen's Land. 1816.
 — *phaenum*. 1½. Blackish purple. May. England.
 — *pilosum*. 3. Purple. July. New Zealand. 1821. Andr. Rep. t. 259.
 — *prate nse*. 1½. Blue. June. Britain.
 — *flo-re-albo*. 1½. White. June. Britain.
 — *flo-re-albo-ple no*. 2. White. May. Britain.
 — *flo-re-ple no*. 2. Blue. June. Scotland.
 — *flo-re-variegata*. 1½. Variegated. July. Britain.
 — *pyrenaicum*. 1. Purple. June. Britain.
 — *reflexum*. 1½. Red. July. Italy. 1758. Andr. Rep. t. 224.
 — *Robertianum*. 1. Red. April. Britain.
 — *flo-re-albo*. 1. White. April. Britain.
 — *rubrifolium*. 1. Pink. July. Himalayas. 1839. B. R. 1840, t. 67.
 — *sanguineum*. 1. Crimson. July. Britain.
 — *villosissimum*. ¾. Blood. July. Europe. Trailing.
 — *sibiricum*. 1. White. July. Siberia. 1758. Jacq. Vind. t. 19.
 — *striatum*. 1. Striped. August. Italy. 1629. B. M. t. 55.
 — *sylda ticum*. 2. Purple, with crimson veins. July. Europe.
 — *tuberosum*. 1. Pink. July. Italy. 1596. Swt. Ger. t. 155.
 — *Charleyi*. Afghanistan. 1887. B. M. t. 6910.
 — *ramosum*. 1. Purple. July. South Europe. B. R. 1839, t. 10.
 — *umbrosum*. 1. Purple. July. Hungary. 1804.
 — *Vlassovianum*. 1. Red. July. Crimea. 1821. Swt. Ger. t. 228.
 — *Wallichianum*. ¾. Striped. July. Nepaul. 1819. Swt. Ger. t. 90.

Gerardia. (Named after *Gerard*, the English herbalist. Nat. ord., *Scrophulariaceæ*; Tribe, *Gerardiæ*. Syn., *Dasytoma*.)

All but *delphinifolia* 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 *quercifolia*, by divisions in spring; sandy, fibry loam, if peat is not to be had; the stove species require similar treatment, but extra heat.

STOVE HERBACEOUS.

G. delphinifolia. See *Sopubia delphinifolia*.

HARDY ANNUALS AND BIENNIALS.

G. afzelii. See *Seymeria tenuifolia*.

- G. apylla*. 3. Rose. July. 1834. Annual.
 — *maritima*. 2. Yellow. July. 1823.
 — *pedicularia*. Yellow. June. 1826. G. C. 1872, p. 43. Syn., *Dasytoma pedicularia*.
 — *purpurea*. 1½. Purple. July. 1772. B. M. t. 2048.
 — *tenuifolia*. 1. Purple. July. 1812.
- HARDY HERBACEOUS.
- G. flava*. 1½. Yellow. July. 1796. Syn., *Dasytoma pubescens*.
 — *quercifolia*. 1. Yellow. July. 1812. Fl. and Pom. 1872, p. 33. Syn., *Dasytoma quercifolia*.

Gerbera. (Named after *Gerber*, a German naturalist. Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*.)

Greenhouse 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. crenata*. B. R. t. 855. See *Mairea crenata*.
 — *Jamesoni*. Rich orange-scarlet. Natal. 1889. B. M. t. 7087.

German Catchfly. *Viscaria vulgaris*.

Germander. *Teucrium*.

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.

Gero'pogon. 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., *Compositæ*; Tribe, *Cichoriaceæ*. Now united with **Tragopogon**.)

Hardy plants, from Italy. Annuals by seed in April, in common soil; perennial by seed and division of the plant in spring.

- G. calyculatus*. See *Scorzonera hirsuta*.
 — *glaber*. B. M. t. 479. See *Tragopogon glaber*.
 — *hirsutus*. Sibth. Fl. Gr. t. 778. See *Tragopogon hirsutus*.

Gerrarda'nthus. (From *Gerrard*, a collector in Natal, and *anthos*, a flower. Nat. ord., *Cucurbitaceæ*; Tribe, *Zanoniæ*.)

A greenhouse climber. Sandy loam. Seeds. *G. tomentosus*. Yellow. August. Natal. 1874. B. M. t. 6694.

Gesnera. (Named after *Conrad Gesner*, a celebrated botanist of Zurich. Nat. ord., *Gesneraceæ*; Tribe, *Gesnerææ*. 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. acapulcoensis*. 1. June. Jamaica. 1793.
 — *aggregata*. 3. June. Brazil. 1816.

- G. allagophylla*. 1½. Orange. July. Brazil. 1834. B. M. t. 1767.
 — *Arnoldi*. 1. July. Brazil. 1841.
 — *barbata*. Scarlet, yellowish.
 — *Blaasii*. Brazil. Syn., *Dircaea Blassii*. Fl. Ser. t. 1140.
 — *breviflora*. 1. Red. August. 1847.
 — *bulbosa*. 2. June. Brazil. 1816. B. R. t. 343. *G. bulbosa* of B. M. t. 3041 is *G. Cooperi*; of B. M. t. 8888 is *G. magnifica*.
 — *laterita*. See *G. Hookeri*.
 — *caracacana*. 2. July. Caraccas. 1842.
 — *cardinalis*. Scarlet. Brazil. Syns., *G. lateritia*, *Paxt. Mag. ix. p. 245*, *G. macrantha*, *Dircaea cardinalis*, Gfl. t. 41, and *D. lobulata*, Fl. Ser. t. 183.
 — *chelonoides*. Columbia. Syn., *Corytholoma chelonoides*, Gfl. t. 374.
 — *cochlearis*. 2. Bright scarlet. May. Brazil. B. M. t. 3787.
 — *Cooperi*. 2. May. Brazil. 1829. Syn., *G. bulbosa* of B. M. t. 3041.
 — *cordata*. ¾. Pale scarlet. July.
 — *corymbosa*. 2. July. Jamaica. 1822.
 — *digitata*. June. Brazil. 1842.
 — *discolor*. Red, yellow. September. S. Amer. 1843. Syn., *G. polyantha* of B. M. t. 3995.
 — *Donkeldarii*. 2. Red. June. Columbia. B. M. t. 5070.
 — *Douglasii*. 1½. Red, yellow. September. Rio Janeiro. 1826. B. R. t. 1110, B. C. t. 1939.
 — *verticillata*. 2. Crimson. May. Rio Janeiro. 1835.
 — *eliptica*.
 — *hu'tea*. 1. Yellow. May. Santa Martha. 1844. B. M. t. 4242.
 — *longata*. 2. Scarlet. September. S. Amer. 1835.
 — *fruticososa*. 2. August.
 — *exoniensis*. 1. Orange-scarlet, yellow. Winter. Garden hybrid.
 — *faucialis*. 2. July. Brazil. 1833. B. M. t. 2659.
 — *Gerardiana*. 2. Red, yellow. September. S. Amer. 1843. *Paxt. Mag. xiii. p. 55*. Syn., *G. Herbertiana*.
 — *gloxiniæfolia*. Pink. 1860.
 — *Gollmeriana*. Scarlet, yellow. Columbia.
 — *gracilis*. Purple spotted. Columbia? 1848. Syns., *G. punctata* and *Corytholoma gracile*.
 — *Herbertiana*. See *G. Gerardiana*.
 — *hirsuta*. 1. July. Cumana. 1826.
 — *Hookeri*. Scarlet. Columbia. Syn., *G. bulbosa*, var. *lateritia*. B. M. t. 4240.
 — *humilis*. ¾. Cuba.
 — *lasiantha*. 3. Autumn. Mexico.
 — *lateritia*. 2. July. Brazil. 1834. B. R. t. 1950. Syn., *G. Sellowi* in part.
 — *latifolia*. August. Caraccas. 1839. Syn., *G. macrostachya*. B. R. t. 1202.
 — *Leopoldi*. Red. Brazil. Fl. Ser. tt. 704-5. Syn., *G. tetraphylla*.
 — *Lindleyi*. Scarlet, yellow. July. Brazil. 1825. Syn., *G. rutila*, var. *atrosanguinea*. B. R. t. 1279.
 — *macrantha*. See *G. cardinalis*.
 — *macrostachya*. B. R. t. 1202. See *G. latifolia*.
 — *maculata*. Purplish spotted. Brazil. Syns., *G. Douglasii*, var. *verticillata* of *Paxt. Mag. vi. p. 26*, *G. purpurea*, B. M. t. 5115, *G. verticillata*, B. M. t. 2776, *Dircaea-Gesnera purpurea*, Fl. Ser. t. 191 and 1046, and *Dircaea picta*, Lem. Jard. Fl. t. 302.
 — *magnifica*. Purple. August. Syn., *G. bulbosa* of B. M. t. 8888, but not of B. R. t. 343, nor B. M. t. 3041.
 — *Marchii*. 3. Scarlet. Mexico. 1844. B. R. t. 3744. Syns., *G. pendulina*, *Corytholoma Marchii* and *C. pendulinum*.

- G. multiflora* 2. White. August. Columbia. 1848.
- *nægelioides*. Rosy-pink, red; throat yellow. Summer. A garden hybrid of which there are numerous varieties
- *au'reo-ro'seum*. Rosy lilac, orange, spotted with red.
- *bi color*. Rosy-red, orange-yellow
- *ca'ndida*. White, pale yellow.
- *coralli'na*. Deep red, orange, spotted with red.
- *lilacine'lla*. Lilac, marbled with a darker shade of lilac, lemon-yellow.
- *sci'ntillans*. Plum, rosy-red, orange-yellow.
- *nigr'scens*. Dark red, light orange. Garden hybrid.
- *oblonga'ta*. Crimson. April. S. Amer. 1830.
- *palm'stris*. Gf. t. 247. See *G. sceptrum*, var. *igne'a*.
- *penduli'na*. See *G. Marchii*.
- *pi'cta*. 3. Red, yellow. August. Columbia. 1848.
- *polyan'tha*. 2. June. Brazil. 1839. *G. polyan'kha* of B. M. 3995 is *G. discolor*.
- *refle'xa*. April. Valparaiso. 1837. Kn. and West. ii. t. 67. Syn., *Dircaea refle'xa*.
- *rup'e'stris*. Faxt. Mag. v. p. 53. See *G. tuberosa*.
- *rupi'cola*. ‡. May. Brazil. 1835. Syn., *Corytholoma rupicolu'm*.
- *ru'tila*. 2. Scarlet, yellow. August. Brazil. 1825. B. R. t. 1158.
- *a'tro-sangui'nea*. B. R. t. 1279. See *G. Lindleyi*.
- *sca'bra*. 1. July. Jamaica. 1820.
- *sce'ptrum*. 4. July. Brazil. 1836.
- *i'gnea*. 3. Reddish-yellow. September. Brazil. 1835. Syn., *G. palustris*.
- *Schiedia'na*. 1‡. July. Mexico. 1844.
- *Sello'ii*. 2. July. Brazil. 1835. See also *G. lateritia*.
- *spica'ta*. Grenada. 1831.
- *sple'ndens*. Scarlet. Brazil. Syns., *G. Houttii*, *Dircaea cardinalis*, Gf. t. 344, *D. lobulata*, Lem. Jard. Fl. tt. 219-220, and *D. Suttoni*, var. *picta*.
- *stri'cta*. 5. July. Brazil. 1835. B. M. t. 3738.
- *Sutto'ni*. 2. July. Rio Janeiro. 1833. B. R. t. 1637.
- *a'lba*. July. Brazil. 1840.
- *pi'cta*. See *G. splendens*.
- *tetraphyl'la*. See *G. Leopoldi*.
- *trifo'ra*. 2. Yellow, red. July. New Grenada. 1846.
- *tubero'sa*. ‡. Autumn. Brazil. 1834. B. M. t. 3664. Syn., *G. rupestris*.
- *tubifo'ra*. 2. March. S. Amer. 1815.
- *vesti'ta*. 1‡. Orange. July. Bogota. 1842.
- EXCLUDED SPECIES.
- G. cinnabari'na*. B. M. t. 5036. See *Nægelia*.
- *Gardene'ri*. Fl. Ser. t. 145. See *Houttea*.
- *Gardne'ri*. B. M. t. 4121. See *Houttea*.
- *honde'nsis*. B. M. t. 4217. See *Isoloma*.
- *libane'nsis*. B. M. t. 4380. See *Pentstaphilia*.
- *longifo'lia*. B. R. 1842, t. 40. See *Isoloma*.
- *prasin'a'ta*. B. R. t. 423. See *Pahivana*.
- *Seema'nni*. B. M. t. 4504. See *Isoloma*.
- *tomento'sa*. B. M. t. 1023. See *Rhytidophyllum*.
- *zebr'i'na*. B. M. t. 3940; B. R. 1842, t. 16. See *Nægelia*.

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, with-

out buds. The first mode may be used when the kind or variety is plentiful, and the bulbs 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 repotting, 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 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 bulbs in January, and place them in heat, giving a little water. Temperature, 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 bulbs; 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.

Gethyllis. (From *getheo*, to rejoice; referring to the sweetness of the flowers of some of them. Nat. ord., *Amaryllidæ*; Tribe, *Amaryllæ*. Allied to *Sternbergia*.)

Here the Amaryllids reach their minimum stature; *G. ciliaris*, if not the smallest, is as dwarf as any in the order. There are only a few of them in cultivation. Greenhouse bulbs, from Cape Colony, with white flowers. Offsets and seeds; sandy loam and peat; kept nearly dry in winter.

- G. a'fra*. $\frac{1}{2}$. White, flushed with red outside. August. 1820. B. R. t. 1016.
- ciliaris*. $\frac{1}{2}$. White. July. 1788. Jacq. H. Schœnb. t. 79.
- lanceolata*. 8. White. July. 1794. Now known as *Apodolirion lanceolatum*.
- spiralis*. $\frac{3}{4}$. White. December. 1780. B. M. t. 1088.
- villosa*. $\frac{3}{4}$. White, tinged with pink outside. July. 1787.

Getonia. (Probably the native name. Nat. ord., *Combretaceæ*. Now referred to *Calycopteris* under the specific names mentioned below. Allied to *Terminalia*.)

Stove evergreen climbers from the hot hills of the Indian peninsula. Cuttings of ripened shoots in sand, under a glass, in bottom-heat; sandy peat and fibry loam.

- G. floribunda*. 6. Yellow, green. 1815. CALYCOPTERIS FLORIBUNDA.
- nutans*. 6. 1816. CALYCOPTERIS NUTANS.

Geum. Avens. (From *geyo*, to stimulate; the roots of some of them, and of allied species, have the same properties as Peruvian bark. Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*. Allied to *Potentilla*.)

Hardy herbaceous perennials. *G. chilense*, var. *grandiflorum* is very showy. Seeds, and dividing the plants in spring; sandy loam, with a little leaf-mould.

- G. agrimonioïdes*. 1 $\frac{1}{2}$. White. July. N. Amer. 1811.
- a'bum*. 1. White. July. N. Amer. 1730.
- aleppicum*. Jacq. Ic. t. 93. See *G. strictum*.
- atlanticum*. 1. Yellow. July. South Europe. 1810.
- brachypetalum*. 1. Yellow. July. 1818.
- canadense*. 1 $\frac{1}{2}$. Yellow. July. Canada. 1810.
- chilense*. 2. Copper. July. Chili. 1826. Syns., *G. coccineum* of B. R. t. 1088, ex-

- cluding the synonyms there given, and *G. Quellyon*, Swt. Fl. Gard. t. 292.
- G. chilense a'tro-sanguineum*. 2. Dark blood.
- fo're-pléno*. Bright scarlet.
- grandiflorum*. 1 $\frac{1}{2}$. Scarlet. July. B. R. t. 1348.
- miniatum*. Salmon coloured.
- ciliatum*. 1. Yellow. July. N. Amer. 1818.
- coccineum*. $\frac{1}{2}$ -1. Purplish. Asia Minor. Swt. Fl. Gard. t. 485. *G. coccineum* of B. R. t. 1088 is *G. chilense*.
- elatum*. 1-2. Yellow. July. Himalayas. 1879. B. M. t. 6568. Syn., *Steversonia elata*.
- heterophyllum*. 2. White. July. 1816.
- hybridum*. 1. Red, brown. July. Europe.
- inclinatum*. See *G. pyrenaicum*.
- intermedium*. 1 $\frac{1}{2}$. Yellow. July. Volhinia. 1794.
- japonicum*. 1-2. Yellow. Summer. Japan.
- Laama'nni*. See *Coluria geoides*.
- macrophyllum*. 2. Yellow. July. Kamtschatka. 1804.
- nival'e a'bum*. White. Juna.
- nutans*. 1 $\frac{1}{2}$. Yellow. July. N. Amer. 1825.
- Pe'ckii*. $\frac{1}{2}$. Yellow. July. N. Amer. 1826. Syn., *Steversonia Peckii*. B. M. t. 2863.
- Quellyon*. Swt. Fl. Gard. t. 292. See *G. chilense*.
- Portenschlagianum*. 1 $\frac{1}{2}$. Yellow. July. 1820.
- pyrenaicum*. 1 $\frac{1}{2}$. Yellow. July. Pyrenees. 1804.
- radiatum*. 1. Yellow. July. N. Amer. 1815.
- ranunculoïdes*. 1. Yellow. July. 1823.
- rhœticum*. $\frac{1}{2}$. Bright yellow. 1882. Gfl. t. 1229. A hybrid.
- riva'le*. 1-3. Reddish-purple. Juna. Britain. Eng. Bot. ed. 3, t. 459.
- rotundifolium*. 1. Yellow. July. Russia. 1820.
- strictum*. 1. Striped. Juna. N. Amer. 1778. Syn., *G. aleppicum*. Jacq. Ic. t. 93.
- virginianum*. 1 $\frac{1}{2}$. White. July. N. Amer.

Giant Fennel. *Fe'rula*.

Gibraltar Mint. *Me'ntha pule-gium gibraltari'cum*.

Gilia. (Named after *Gilio*, a Spanish botanist. Nat. ord., *Polemoniaceæ*. Syns., *Egochloa*, *Cantua*, *Dactylophyllum*, *Fenzlia*, *Huegelia*, *Ipomopsis*, *Leptodactylon*, *Leptosiphon*, *Lisianthus*, and *Navarretia*.)

Hardy annuals, except *G. aggregata* and *Brandegei*. 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 biennial (*G. aggregata*), sown in August, potted, and kept over the winter, will bloom freely the following summer.

- G. achilleaefolia*. 1 $\frac{1}{2}$. Pink. August. California. 1833. B. M. t. 5939. *G. achilleaefolia* of B. R. t. 1628, B. M. t. 3440 and Swt. Fl. Gard., ser. 2, t. 280 is *G. multicaulis*.
- aggregata*. Scarlet. July. America. 1822. Greenhouse biennial. Syn., *Cantua aggregata*.
- androsa'cea*. 1. Blue, white. August. California. 1833. Syn., *Leptosiphon androsacens*.
- arena'ria*. 1. Blue. June. California. 1833.
- Brande'gei*. $\frac{1}{2}$. Yellow. Colorado. 1878. B. M. t. 6378.
- californica*. 3. Pink. July. California. 1854. Syn., *Leptodactylon californicum*. B. M. t. 4872.
- capitata*. 2 $\frac{1}{2}$. Blue. July. Columbia. 1826.

- G. capitata corolla a'ba.* 2. White. June. Gardens. 1829.
- *cilia'ta.* Pink, yellow. 1853. Syn., *Leptosiphon ciliatum.*
- *coronopifolia.* 2½. Scarlet. July. Carolina. 1726.
- *cotulaefolia.* ½. White. June. California. 1833. Syn., *Navarretia cotulaefolia.*
- *crassifolia.* 2. Yellowish. June. Chili. 1832.
- *densiflora.* ¾. Purple. June. California. 1833. Syn., *Leptosiphon densiflorus.*
- *a'ba.* ¾. White. June. California. 1833.
- *dianthoides.* ¾. Lilac. July. California. 1855.
- *eryngioides.* Blue. Chili. 1833. Syn., *Navarretia eryngioides.*
- *floccosa.* ¾. Yellow. June. N. Amer. 1833
- *gracilis.* ¾. Pink. July. N. Amer. 1826.
- *grandiflora.* 1½. Blue, yellow. September. California. Syn., *Leptosiphon grandiflorus.*
- *incomspicua.* 2. Blue. August. N. Amer. 1793. Syn., *Cantua parviflora.*
- *intertexta.* 1½. Blue. June. California. Syn., *Navarretia intertexta.*
- *laciniata.* ¾. Purple. July. Chili. 1831.
- *liniflora.* ½. White. June. California. 1833.
- *lutea.* Yellow. ¾. California. 1852. Syn., *Leptosiphon luteus.*
- *paludus.* 1½. Pale yellow. September. California. 1833. Syn., *Leptosiphon luteus*, var. *pallidus.*
- *microantha.* ¾. Rose. California. 1870. Syns., *Leptosiphon parviflorus* and *L. roseus.*
- *an'rea.* ¾. Yellow. California.
- *multicaulis.* 2. Blue. California. 1833. Syn., *G. achilleaefolia* as mentioned above.
- *parviflora.* 2. Blue. October. America. 1793.
- *pharnaceoides.* ¾. White. June. California. 1833.
- *pubescens.* ¾. Blue. June. California. 1833. Syn., *Navarretia pubescens.*
- *pulchella.* 2½. Scarlet. July. North-west America. 1826. Syn., *Ipomopsis elegans* of B. R. t. 1281, but not of Michaux.
- *pungens.* 1½. Pink. July. N. Amer. 1827. Syn., *Navarretia pungens.*
- *pusilla.* ½. June. Chili. 1833.
- *squarrosa.* 1. Blue. August. Santa Cruz. 1847. Syn., *Navarretia squarrosa.*
- *tenuiflora.* 2. Rose, violet. August. California. B. R. t. 1888.
- *tricolor.* 1. Purple, orange. August. California. 1833. B. M. t. 3463. Gd. t. 1042, f. 2.
- *a'ba.* ¾. White. July. California. 1833.
- *virgata.* ¾. Blue. June. California. 1833. Syn., *Huegelia virgata.*

Gilibertia. (Named after Gilibert, a German botanist. Nat. ord., *Araliaceae*. Allied to *Cussonia*.)

Stove evergreen shrubs. Cuttings of the young shoots in sand, under a bell-glass, and in heat; sandy peat and fibry loam.

- G. brasiliensis.* 4. Greenish. Tropical America.
- *palmeta.* See *Trevisia palmata.*
- *umbellata.* Greenish. Peru. Syn., *Dendropanax umbellatum.* Rev. Hort. 1854, p. 107.

Gillenja. (Named after one Gillenius. Nat. ord., *Rosaceae*; Tribe, *Spiræe*. Allied to *Exochorda*.)

Hardy herbaceous perennials, with red and white flowers, from North America. Division of the plant seed; common soil.

- G. stipulacea.* 2. July. 1805.
- *trifoliata.* 2. July. 1713. Syn., *Spiræea trifoliata.* B. M. +
- *major.* 3. July.

Gilliesia. (Named after Dr. Gillies of Mendoza. Nat. ord., *Liliaceae*.)

Showy greenhouse, or half-hardy bulb. Sandy loam.

- G. graminea.* 1. Greenish. September. Valparaiso. 1825. B. R. t. 992.

Gilliflower, Gilloflower, or Gillyflower. Corrupted from the French Giroflée, and applied to *Dianthus Carophyllus*, *Matthiola incana*, and *Cheiranthus Cheiri*.

Ginger. (*Zingiber officinale*.) 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 microscopic fungus, allied to yeast (*To'ru'la*).

Ginger Bread Palm. *Hypphaene thebaica*.

Ginger Bread Plum. *Parinarium macrophyllum*.

Gi'ngo. The Maiden-hair Tree. (The Japanese name. Nat. ord., *Coniferæ*. Syns., *Pterophyllus* and *Salisburia*.)

Ornamental hardy trees of handsome appearance. Seeds, common soil.

- G. biloba.* 80. Spring. N. China. 1754. Syn., *Salisburia adiantifolia.*
- *laciniata.* Leaves deeply cut.
- *pendula.* Branches drooping.
- *pyramidalis.* Garden variety. 1838.
- *variegata.* Leaves slightly variegated.

Gipsy Moth. *Li'paris dispar*.

Githa'go. See *Lychnis*.

Gladiolus. Corn Flag. (From *gladius*, a sword; referring to the shape of the leaves. Nat. ord., *Iridæe*; Tribe, *Iaviceæ*.)

- Bulbs, from South Africa, except where otherwise mentioned. The hardiest merely require border-room, and are propagated by seeds, and by taking up and dividing the rhizomes or 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*, etc., may be planted in the end of October; *ramo'sus*, *formo'sissimus*, etc., 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. abbreviat'us*. Andr. Rep. t. 166. See *Antholyza quadrangularis*.
- *Adla'mi*. Dull yellow with minute red spots. Transvaal. 1889.
- *aequinoc'tia'lis*. April. Sierra Leone. 1842. A synonym of *Acidanthera aequinoc'tialis*.
- *ala'tus*. 2. Scarlet, yellow. June. 1795. Jacq. Ic. t. 259.
- — *algeo'nsis*. 2. Orange. July. 1824.
- *a'lbidus*. 1. White. June. 1774. Jacq. Ic. t. 256.
- — *pi'ctus*. 1. Red, white. July. 1794.
- *angustifo'lius*. A synonym of *Babiana tubiflora*.
- *angu'stus*. 2. Yellow. June. 1756. Jacq. Ic. t. 252.
- — *mi'nor*. Flowers smaller. Andr. Rep. t. 589.
- *atroviolat'ceus*. Dark blue, purple, white. Palestine. 1889.
- *bla'ndus*. 1. 1/2. Flesh. June. 1774. B. M. t. 625, 648 and 1665.
- — *campanula'tus*. Pale purple. B. M. t. 645.
- *brachya'ndrus*. 2. Scarlet, whitish. Zambesi Land. July. 1879. B. M. t. 6463.
- *brevifo'lius*. 1. 1/2. Pink. June. 1802.
- *byzanti'cus*. 2. Red. July. Turkey. 1629. B. M. t. 874.
- *campanula'tus*. 1. 1/2. Light purple. May. 1794. Andr. Rep. t. 188.
- *cardinalis*. B. M. t. 135. See *Tritonia crocata*.
- *ca'rneus*. 2. Flesh. June. 1796. Jacq. Ic. t. 255.
- *cauca'sicus*. Caucasus. 1842.
- *cochled'rus*. 1. 1/2. White, red. March. 1829. Swt. Fl. Gard. ser. 2. t. 140.
- *Colvi'lei*. 1. Bright red, marked with pale purple. July. Hybrid between *G. cardinalis* and *G. tristis*.
- — *alba*. White.
- *commu'nis*. 2. Red. July. South Europe. 1596. Sibth. Fl. Gr. t. 37.
- — *albus*. 2. White. June. South Europe.
- *ca'rneus*. 1. 1/2. Flesh. July. South Europe. 1596.
- *co'ncolor*. 1. Yellow. June. 1790.
- *Coop'e'ri*. 3. Red, yellow. September. Natal. 1862. B. M. t. 6202.
- *crispifo'rus*. Various. July. 1842.
- *cri'spus*. Jacq. Ic. t. 267. See *Tritonia crispa*.
- *crue'ntus*. Blood-red, white. September. Natal. 1863. B. M. t. 6810.
- *cuspidat'us*. 1. 1/2. White, brown. May. 1795. Jacq. Ic. t. 257.
- *de'bilis*. 1. 1/2. White. May. B. M. t. 2585.
- *decorat'us*. 3. Scarlet, yellow. E. Africa. 1890.
- *draecoc'phalus*. 2. 1/2. Greenish-yellow, with purple lines. Natal. 1871. B. M. t. 5884.
- G. Ecklo'ni*. 1-1. 1/2. Pinkish-white, densely red spotted. Autumn. S. Africa. 1862.
- *e'dulis*. 1. 1/2. White. June. 1816. B. R. t. 169.
- *Eulo'ni*. White tipped with purple. 1890.
- *elongat'us*. See *Babiana tubiflora*.
- *festi'mus*. Pale rose. July. 1844.
- *fistulo'sa*. Jacq. H. Schœnb. t. 16. See *Watsonia spicata*.
- *flexu'sus*. 1. Orange. June. 1825.
- *floribu'ndus*. 1. Citron. July. 1788. Jacq. Ic. t. 254.
- *fra'grans*. Jacq. H. Schœnb. t. 14. See *Babiana plicata*.
- *gandave'nsis*. Rich crimson, yellow. Summer. Hybrid.
- *gra'obis*. 2. Blue, white. April. 1800. Jacq. Ic. t. 246.
- *hastat'us*. 1. Flesh. May. 1816. B. M. t. 1564.
- *hirsu'tus*. 1. 1/2. Pink. June. 1795. B. M. t. 574, 727, 823, and 992.
- *hyali'nis*. 1. Yellow, red. June. 1825. Jacq. Ic. t. 242.
- *imbrica'tus*. 1. Red. June. Russia. 1820.
- *inclinat'us*. See *Babiana tubiflora*.
- *involu'tus*. 1. 1/2. Pink. June. 1757.
- *iridifo'lius*. Jacq. Ic. t. 235. See *Watsonia Meriana*.
- *Ki'rkiti*. 3. Rose. Grahamstown. 1890.
- *Kotschy'anus*. Light violet. Afghanistan and Persia. B. M. t. 6897.
- *Le'chtlini*. Scarlet, yellow. Transvaal. 1889.
- *lineat'us*. B. M. t. 487. See *Montbretia lineata*.
- *longifo'rus*. Jacq. Ic. t. 262. See *Babiana tubiflora*.
- *Mille'ri*. 1. 1/2. Violet. May. 1751. B. M. t. 632.
- *Mortu'tus*. 1. 1/2. White. 1837. B. M. t. 3680.
- *micronat'us*. Jacq. Ic. t. 253. See *Babiana micronata*.
- *namaque'nsis*. 2. Orange. June. 1800.
- *na'vus*. Andr. Rep. t. 137. See *Babiana nana*.
- *natale'nsis*. 4. Scarlet, yellow. August. Natal River. 1830. B. C. t. 1756.
- *ochroleu'cus*. Transvaal Republic.
- *oppositifo'rus*. April. Madagascar. 1843.
- *papi'lio*. Purple, yellow. S. Africa. 1866. B. M. t. 5565.
- — *atra'tus*. Dark purple. 1885.
- *permea'bilis*. 2. Orange. June. 1825.
- *plica'tus*. Jacq. Ic. t. 237. See *Babiana stricta*, var. *sulphurea*.
- *Pottsii*. See *Montbretia Pottsii*.
- *pra'cox*. Andr. Rep. t. 38. A synonym of *Antholyza revolutum*.
- *primulif'rus*. Primrose-yellow. E. Africa. 1890.
- *psittaci'nus*. 3. Scarlet, yellow. Summer. S. E. Africa. B. M. t. 3032.
- *pubibu'ndus*. 3. Rose. Hybrid between *G. blandus* and *G. cardinalis*. Swt. Fl. Gard. ser. 2. t. 176.
- *puncta'tus*. Greenish-yellow, brownish-purple. 1889.
- *purpu'reo-aura'tus*. Yellow, purple. Natal. 1872.
- *quadrangula'ris*. B. M. t. 567. See *Antholyza quadrangularis*.
- *Quartini'anus*. 4. Yellow spotted with scarlet. August. Tropical Africa. 1834. B. M. t. 6739.
- *ramo'sus*. 5. Rose. July. 1838. Paxt. Mag. vi. p. 99.
- *recur'vus*. 2. Striped. May. 1758. B. M. t. 578. Syn., *G. ringens*.
- *refract'us*. Jacq. Ic. t. 241. See *Freesia refracta*.
- *ri'ngens*. Andr. Rep. t. 27. A synonym of *G. recurvus*.
- *ro'seus*. Jacq. Ic. t. 261. See *Tritonia capensis*.
- *sambuci'nus*. Jacq. H. Schœnb. t. 15. See *Babiana sambucina*.

- G. Saundersii*. Scarlet, white. August. S. Africa. 1871.
 — *segutum*. 2. Purple. July. South Europe. 1596. B. M. t. 719.
 — *sericeo-villosus*. 3. Yellow. S. Africa. 1864.
 — *strictus*. See *Babiana stricta*.
 — *sulphureus*. Jacq. Ic. t. 239. See *Babiana stricta*, var. *sulphurea*.
 — *tenuis*. 2. Yellow. June. 1825. Jacq. Ic. t. 248.
 — *tennis*. 1. Red. June. Tauria. 1823.
 — *trichonemifolius*. 1½. Yellow. June. 1800. B. M. t. 1483.
 — *trimaculatus*. 1. Red, white. June. 1794.
 — *tristis*. 1. Brown, red. July. 1745. B. M. t. 272 and 1098.
 — *tubatus*. Jacq. Ic. t. 264. See *Babiana tubata*.
 — *tubiflorus*. Jacq. Ic. t. 266. See *Babiana tubiflora*.
 — *turicensis*. Garden hybrid between *G. gandavensis* and *G. Saundersii*. 1889.
 — *undulatus*. 1. Pink. May. 1760. Jacq. Ic. t. 251.
 — *paullidus*. 1. Pink. May. 1760.
 — *versicolor*. 1½. Brown. June. 1794. Andr. Rep. t. 18.
 — *vinevis*. 1½. Pink. June. 1806.
 — *tenuior*. 1. Variegated. June. 1779.
 — *victoralis*. Garden hybrid between *G. communis* and *G. Colvillei*.
 — *vinulus*. Creamy white, feathered with crimson. 1888.
 — *viperatus*. 2. Green, white. May. 1787. B. M. t. 688.
 — *watsonioides*. 1½. Scarlet. Mount Kilimanjaro. 1887. B. M. t. 6919.
 — *Watsonius*. Jacq. Ic. t. 233. See *Antholyza revoluta*.
 — *xanthoepifolius*. Red. Lil. t. 124. 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 hybridizing, 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.

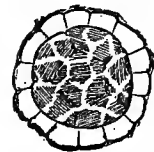
Winter Culture.—In September pre-

pare 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 be spotted, let every leaf be sponged over with water impregnated with flower of sulphur. If dry weather prevails much, syringe the plants every evening severely:

Gladiolus disease. In wet seasons, especially in damp heavy soils, the Gladiolus is subject to a peculiar disease, caused by some fungus. At present the disease is very imperfectly understood, for badly diseased corms are often found to contain the mycelium of two or three kinds of fungi, as well as infusoria. A curious mycelial growth is, however, usually found in the diseased corms, called *Rhizoctonia crocorum*, or "Copper-web," which also attacks and destroys the corms of Crocus, Narcissus bulbs, Asparagus, etc., and probably is the main agent in producing the Gladiolus disease. The fruit of this fungus is unknown, but in 1876 Mr. W. G. Smith discovered some curious bodies

in a diseased Gladiolus corm which may perhaps prove to be the fruit of *Rhizoctonia*; no mycelium was, however, found with them. These bodies, one of which is shown in our engraving, belong to



the genus *Urocystis*, and have received the name of *U. gladioli*; they are com-

pound spores, consisting of from three to six inner brown cells or spores, and an indefinite number of outer nearly transparent cells. Both kind of cells or spores burst and produce threads of mycelium. No remedy is known.—From the "Gardeners' Chronicle," 1876, n. s. vi. 420.

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, etc., 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.

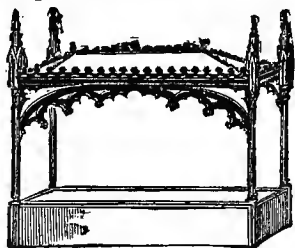
Another glass case is made for protecting a single branch. It is thus described by Mr. Maund:

"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 shown in the annexed outline, to fix against the wall, and inclose 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 inclosed 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 mid-day 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 so-called *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.

Glastonbury Thorn. A variety of *Crataegus oxyacantha*.

Glasswort. *Salicornia*.

Glau'cium. Horn Poppy. (From *glaukos*, greyish-green; referring to the colour of the leaves. Nat. ord., *Papaveraceæ*; Tribe, *Eupapavereæ*. Allied to *Eschscholtzia*.)

Seeds in common borders, in March or April.

HARDY BIENNIALS.

- G. flavum*. See *G. luteum*.
— *fulvum*. 2. Orange. August. South Europe. 1802.
— *luteum*. 2. Yellow. August. Britain. Eng. Bot. ed. 3, t. 66. Syn., *G. flavum*.

HARDY ANNUALS.

- G. arabicum*. Red. June. Arabia. 1837.
— *persicum*. 1. Red. August. Volhynia. 1829.
— *corniculatum phoeniceum*. 2. Purple. July. S. Europe. Sibth. Fl. Gr. t. 489.
— *flaviflorum*. 2. Yellow. July. Tauria. 1823.
— *rubrum*. 1. Red. July. Greece. 1818.
— *tricolor*. 1. Red. July. Persia. 1828.
— *Serpieri*. Yellow. Greece. 1873. Gf. t. 776.
— *floropleno*. Yellow. Greece. 1873.
— *squamuligerum*. Yellow. Altai. 1879.

Glaucous. Greyish, or milky-green.

Glau'x. (From *glaukos*, greyish-green. Nat. ord., *Primulacæ*; Tribe, *Lysimachieæ*. Allied to *Anagallis*.)

Hardy British perennial trailers, found in marshes near the sea. Sandy, moist soil; seeds. *G. maritima*. Flesh-coloured. June. Eng. Bot. ed. 3, t. 1150.

— *alba*. †. White. May.

Glazing. See **Greenhouse and Stove**.

Glecho'ma. See **Nepe'ta**.

Gledi'tschia. (Named after *Gleditsch*, a German botanist. Nat. ord., *Leguminosæ*; Tribe, *Eucasalpineæ*. Allied to *Colvillea*.)

Ornamental hardy deciduous trees. Seeds imported from America and the South of France, where *triacanthos*, etc., ripen their seeds. *Sinensis inermis*, etc., are generally grafted. The seed should be sown in March, after being soaked twelve hours in warm water. Common soil.

- G. flava*. See *G. triacanthos*.
— *horrida*. Wats. Dendr. t. 75. See *G. sinensis*.
— *lavis*. See *G. triacanthos*, var. *inermis*.
— *macrantha*. 20. Green. July.
— *micrantha*. 10. Green. July.
— *monosperma*. 20. Green. July. N. Amer. 1723.
— *sinensis*. 20. Green. China. 1812. Syn., *G. horrida*.
— *inermis*. 20. Green. June.
— *major*. 30. Green. June. China.
— *na'na*. 12. Green. June. China.
— *pendula*. Green. June.
— *triacanthos*. 30. Green. N. Amer. 1700. Honey Locust. Wats. Dendr. t. 133. Syn., *G. flava*.
— *inermis*. 30. Green. July.

Gleiche'nia. (Named after *Gleichen*, a German botanist. Nat. ord., *Filices*.)

Ornamental Stove Ferns, with brown spores. Division of the plant; peat and loam.

- G. bifurcata*. May. Malacca.
G. cryptocarpa. 3. Chili. 1865.
 — *dica' rpa*. Tasmania. Hook. Fil. Exot. t. 40.
 — — *longipinna'ta*. Australia. 1879.
 — *dicho'toma*. Tropics.
 — *exce'lsa*. May. Isle of Luzon.
 — *flabella'ta*. July. N. Holland. 1823. Hook. Fil. Exot. t. 71.
 — *furca'ta*. Jamaica. 1860.
 — *giga'ntea*. June. E. Ind. Hook. Sp. Fil. t. 3.
 — *helicistophy'la*. New Zealand.
 — *Herna'nni*. Isle of Luzon. 1839. Hook. Ic. Fil. t. 14.
 — *Mende'lii*. Australia. 1879.
 — *microphy'la*. July. N. Holland. 1823.
 — *nucrona'ta*. Mindora.
 — *pectina'ta*. 3. August. Trinidad. 1824.
 — *pub'e'scens*. 3. August. S. Amer. 1822.
 — *ri'gida*. June. Isle of Luzon. 1839.
 — *rupo'stris*. New Holland. 1860.
 — *se'mi-nesti'ta*. New Zealand. 1857. Hook. Sp. Fil. t. 2.
 — *spehu'ncea*. July. N. Holland. 1824. Hook. Sp. Fil. t. 1.

Glo' bba. (A native name. Nat. ord., *Scitamineæ*; Tribe, *Zingiberæ*. Allied to *Colebrookia*.)

Stove herbaceous plants. Parting the roots; sandy loam.

- G. a' lba*. Belg. Hort. xxxv. p. 286, t. 20. See *G. albo-bracteata*.
 — *a' lbo-bractea'ta*. 2. White, yellow. Sumatra. 1882.
 — *a'tro-sangui'nea*. 1. Red, yellow. Borneo. 1882. B. M. t. 6626. Syn., *G. coccinea*.
 — *bulbi'fera*. 2. Yellow. July. E. Ind. 1820.
 — *Careya'na*. 1½. Yellow. August. Pegu. 1822.
 — *cocci'nea*. See *G. atro-sanguinea*.
 — *ere'cta*. 1. White. July. E. Ind. 1820.
 — *Maranti'na*. 1½. Yellow. July. E. Ind. 1800. B. C. t. 100.
 — *orize'nsis*. 2. Pink. July. E. Ind. 1819.
 — *pe'ndula*. 1. Yellow. July. E. Ind. 1822.
 — *racemo'sa*. 1. Yellow. July. Ceylon. 1812.
 — *Schombu'rgkii*. 1. Yellow, orange. August. Siam. 1864. B. M. t. 6298.
 — *sessili'flora*. 1½. Yellow. August. Pegu. 1807. B. M. t. 1428.

Globe Amaranth. *Gomphre'na*.

Globe Flower. *Tro'llius*.

Globe Mallow. *Sphaeral'a'cea*.

Globe Thistle. *Echi'nops*.

Globula'ria. (From *globulos*, a small round head; referring to the flower-heads. Nat. ord., *Selaginaceæ*. 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 conservative wall; and *aly'pum* should be tried in a dry, sheltered place, on a rock-work, with a slight protection in winter.

GREENHOUSE HERBACEOUS.

- G. aly'pum*. 2. Pale. August. South Europe. 1640.
 — — *integrifo'lia*. 2. Pale. August. South Europe.
 — *salici'na*. 3. White. July. Madeira. 1775. Syn., *G. longifo'lia*.

HARDY HERBACEOUS.

- G. bellidifo'lia*. See *G. cordifo'lia*.
 — *cordifo'lia*. ½. Blue. July. Germany. 1633. Syn., *G. bellidifo'lia*.
 — — *na'na*. ½. Blue. July. France. 1824. Syn., *G. nana*.
 — *incane'scens*. Purple. June. Italy. 1828.
 — *linifo'lia*. See *G. spinosa*.
 — *na'na*. See *G. cordifo'lia*, var. *nana*.
 — *nudica'ulis*. ½. Blue. July. Germany. 1929.
 — *spino'sa*. ½. Blue. June. Spain. 1640. Syn., *G. limifo'lia*.
 — *vulga'ris*. ½. Blue. June. Europe. 1640.

Globu'lea. (From *globulos*, a small globe; referring to glands on the petals. Nat. ord., *Crassulaceæ*. United to *Crassula* by Bentham and Hooker.)

Greenhouse succulents, from the Cape of Good Hope, and with white flowers, except *a'tro-purpurea*. Cuttings of firmish young shoots, taken off and dried for a day or two before inserting them in sandy soil, and placing a hand-light over them, but not close. Sandy loam, a little peat, charcoal, and brick-rubbish, in small pieces, the dust being sifted out. Keep dry during winter.

- G. a'tro-purpu'rea*. ½. Purple. August. 1823.
 — *cane'scens*. See *Crassula canescens*.
 — *capita'ta*. ½. July. 1819.
 — *cultra'ta*. See *Crassula cultrata*.
 — *hi'spida*. ½. November. 1823.
 — *impre'ssa*. ½. August. 1820.
 — — *mi'nor*. ½. August. 1820.
 — *mo'lis*. 1. August. 1774.
 — *nudica'ulis*. See *Crassula nudicaulis*.
 — *obvalla'ta*. See *Crassula obvallata*.
 — *panicula'ta*. ½. July. 1823.
 — *sulca'ta*. See *Crassula sulcata*.

Glo'nera. See *Psychotria*.

Glorio'sa. (From *gloriosus*, glorious; referring to the flowers. Nat. ord., *Liliaceæ*; Tribe, *Uvulariæ*.)

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 it has done flowering, and the leaves turned 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. nepale'nsis*. 2. Yellow. June. Nepaul. 1825. Half-hardy.
 — *si'mplex*. 2. Blue. July. Senegal. 1756.
 — *supe'riba*. 6. Orange. July. E. Ind. 1690. Andr. Rep. t. 129.
 — — *grandi'flora*. Orange. Tropical Africa. Syn., *Methonica grandiflora*. B. M. t. 5216.
 — — *Leopoldia'na*. 6. Yellow. July. 1847.
 — *vire'scens*. 4. Orange. August. Mozambique. 1823. B. M. t. 2539.

Glory Pea. *Clia'nthus*.

Glossa'nthus. (From *glossa*, a

tongue, and *anthos*, a flower; referring to the shape of the corolla. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*.) See **Klugia**.

G. malabaricus. See *Klugia Notoniana*.
— *Notonia*'na. See *Klugia Notoniana*.
— *zeylanicus*. See *Klugia zeylanica*.

Glossoc'onia. (From *glossokomos*, a money-bag; referring to the shape of the flower. Nat. ord., *Campanulaceæ*; Tribe, *Campanuleæ*.) See **Codonopsis**.

G. ovata. B. R. 1842, t. 3. See *Codonopsis ovata*.
— *lurida*. See *Codonopsis rotundifolia*, B. M. t. 4942.

Glossod'ia. (From *glossa*, a tongue, and *eidos*, like; referring to the lip, or labellum. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Diurideæ*. Allied to *Arethusa*.)

Greenhouse terrestrial orchids. Offsets; sandy loam and peat; dryish in winter.

G. major. Blue. June. Australia. 1810.
Syn., *Caladenia major*.
— *minor*. Blue. June. Australia. 1810.
Syn., *Caladenia minor*.

Glottid'ium. (From *glottis*, the valve of the windpipe; referring to the division in the seed-pod. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*.) See **Sesbania**.

G. florida'num. See *Sesbania disperma*.

Gloxinia. (Named after P. B. Gloxin, a botanist of Colmar. Nat. ord., *Gesneraceæ*; Tribe, *Gesnereæ*.)

Very handsome stove herbaceous perennials. For culture, see **GESNERA**.

G. caulescens. 3. Purple. July. Pernambuco. 1828. B. R. t. 1127.

— *digitaliflora*. 3. Pale crimson. June. Mexico. 1843. Paxt. Mag. x. p. 198.

— *discolor*. 1½. Lilac, blue. March. Brazil. 1843.

— *imbriata*. 1½. White, yellow. September. B. M. t. 4430.

— *hirsuta*. B. R. t. 1004. See *Sinningia*.

— *hypocrytiflora*. B. M. t. 5655. See *Isoloma hypocrytiflora*.

— *hirsuta*. 3. Blue. July. S. Amer. 1824.

— *macrophylla*. Violet. September. Brazil. 1844.

— *maculata*. 1. Purple. September. S. Amer. 1739. B. M. t. 1191.

— *insignis*. Lilac, crimson. Brazil. 1864.

— *pallidiflora*. 1. Purple. October. Santa Martha. 1845. B. M. t. 4213.

— *Passingha*'mt. Paxt. Mag. xii. p. 267. See *Sinningia speciosa*.

— *picta*. Lilac, blue. June. S. Amer. 1842.

— *variegata*. Pale blue. S. Amer.

— *rubra*. Scarlet. September. Rio Janeiro. 1840. Paxt. Mag. vii. p. 271.

— *speciosa*. B. R. t. 213, 1127, 1844, t. 48. B. M. t. 1937, 3208, 4934, and 3943. See *Sinningia speciosa*.

— *tubiflora*. 1. White. July. South Brazil. 1837. B. M. t. 3971. Now referred to *Achimenes*.

— *virginale*. Garden variety. 1889.

Gly'ce. (From *glukus*, sweet; alluding to its flavour. Nat. ord., *Crucifereæ*. Now referred to **Alyssum**.)

G. mari'tima. Synonymous with *Alyssum maritimum*.

Gly'cine. (From *glukus*, sweet; referring to the taste of the roots of some Nat. ord., *Leguminosæ*.)

The well-known Chinese twiner, popularly called *Gly'cine sinensis*, belongs to *Wistaria*. Seeds in a hotbed, 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. Bachtousia'na.

— *hedysaroides*. 1½. Purple. July. Guinea. 1823. Shrub.

— *rosea*. 1. Rose. Ceylon. 1848.

GREENHOUSE EVERGREEN TWINERS.

G. claudes'tina. 2. Purple. July. Australia. 1818. Syn., *G. minima*.

— *minima*. See *G. claudestina*.

EXCLUDED SPECIES.

G. a'pios. B. M. t. 1198. See *Apios tuberosa*.

— *biloba*. See *Cologania biloba*.

— *bimaculata*. B. M. t. 263. See *Hardenbergia*

monophylla,

— *bituminosa*. B. R. t. 261. See *Fageia*

bituminosa.

— *coccinea*. B. M. t. 270. See *Kenneyda*.

— *Comptonia*'na. B. M. t. 298. See *Hardenbergia Comptoniana*.

— *filosa*. See *Amphicarpæa sarmentosa*.

— *heterophylla*. See *Rhynchosia glandulosa*.

— *humifusa*. See *Westonia humifusa*.

— *lignosa*. See *Sweetia lignosa*.

— *mollis*. See *Teramnus mollis*.

— *monota*. See *Amphicarpæa monoica*.

— *monophylla*. Jacq. H. Schenb. t. 232. See

Hallia.

— *punctata*. See *Turpinia punctata*.

— *rubicunda*. B. M. t. 288. See *Kenneyda*.

— *sarmentosa*. See *Amphicarpæa sarmentosa*.

— *striata*. See *Galactia*.

— *vincentina*. B. R. t. 799. See *Chaetocalyx*

vincentina.

Glycyrrh'iza. Liquorice. (From *glukus*, sweet, and *rhiza*, a root; referring to the sweet juice of the roots of the liquorice. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. Closely allied to *Astragalus*.)

Hardy herbaceous perennials. The true liquorice is the root of *G. gla'bra*; but those of *echinata* 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'rri'ma. 2. Blue. July. Siberia. 1795.

— *echinata*. 3. Pale. July. Italy. 1596.

B. M. t. 2154.

— *fa'tida*. 3. Pale yellow. July. Africa. 1817.

— *gla'bra*. 3. Pale blue. July. Italy. 1562.

Sibth. Fl. Gr. t. 709.

— *glandulifera*. 3. Pale. July. Hungary. 1805.

— *hirsuta*. 3. Pale. July. Levant. 1739.

— *lepida*'ta. 3. Pale. July. Missouri. 1811.

B. M. t. 2150.

— *uralen'sis*. 3. Pale blue. July. Siberia. 1818.

Glycyrrh'iza gla'bra Culture.

Common 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 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. (Derivation unexplained.) Nat. ord., *Tiliaceæ*; Tribe, *Apeibeæ*.)

Stove shrub. For cultivation, see APEIBA, to which it is allied.

G. Monte'roi. Yellow. Benguela. 1866. B. M. t. 5610.

Glyphospérma. (From *glyphe*, carving, and *sperma*, a seed.) Nat. ord., *Liliaceæ*; Tribe, *Asphodeleæ*. Closely allied to *Anthericum*.)

Hardy plant with grass-like leaves, requiring slight protection in winter. Sandy soil.

G. Palmé'ri. 1½. Light salmon-colour, or white. February. Northern Mexico. 1881. B. M. t. 6717.

Glyptostro'bus. See *Taxodium*.

Gmeli'na. (Named after *G. Gmelin*, a German naturalist.) Nat. ord., *Verbenaceæ*; Tribe, *Viticeæ*. Allied to *Tectona*.)

Evergreen trees. Seeds; cuttings of firm young shoots in sand, and in heat; rich, fibry loam.

G. asiá'tica. 10. Yellow. E. Ind. 1792. Stove.
— *Rhee'dii.* 14. Orange. May. E. Ind. Stove. B. M. t. 4395.
— *speciosí'ssima.* 15. White. Nepal. 1823. Greenhouse.

Gnaphá'lium. Cudwort, or Everlasting. (From *gnaphalon*, soft down; in reference to the woolly covering of the leaves.) Nat. ord., *Compositæ*; Tribe, *Inuloideæ*. 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. *G. albe'scens* requires a cool stove, and the addition of a little neat.

G. albe'scens. 2. White. Jamaica. 1798. Stove evergreen.
— *involuta'tum.* 1. Brown, yellow. July.

New Zealand. 1699. Hardy herbaceous, B. M. t. 2582.

G. obtusifó'lium. 1. Yellow. July. N. Amer. 1782. Hardy annual.
— *pennsylvá'nicum.* 1½. Purple. July. N. Amer. 1732. Greenhouse biennial. Syn., *G. purpureum*.
— *sanguí'neum.* 1½. Crimson. July. Egypt. 1768. Hardy biennial.
— *undulá'tum.* 1. Yellow, white. July. Africa. 1732. Hardy annual.

EXCLUDED SPECIES.

G. apiculá'tum. B. R. t. 240. See *Helichrysum*.
— *arena'rium.* B. M. t. 2159. See *Helichrysum*.
— *conge'stum.* B. M. t. 2328. See *Helichrysum*.
— *diótum.* See *Antennaria dioica*.
— *east'mium.* B. M. t. 300. See *Helipterum*.
— *grandifó'rum.* Andr. Rep. t. 489. See *Helichrysum*.
— *Leontopó'dium.* B. M. t. 1958. See *Leontopodium*.
— *modé'stum.* B. M. t. 2710. See *Helipterum*.

Gni'dia. (An ancient name for laurel.) Nat. ord., *Thymelacææ*; Tribe, *Enthymelacææ*. Allied to *Pimelea*.)

Greenhouse evergreens, with pale yellow flowers, from South and East Tropical 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. Shade in summer.

G. argé'ntea. 2. June. 1826.
— *bifo'ra.* 2. June. 1800.
— *capita'ta.* 1. July. 1788.
— *denuda'ta.* 1½. Pale yellow. 1820. B. R. t. 757.
— *fla'va.* 2. Dark yellow. June. 1825.
— *imbrica'ta.* 2. June.
— *juniperifó'lia.* 2½. June. 1810.
— *laeviga'ta.* 1. June. 1822.
— *pinifó'lia.* 2. June. 1768. B. M. t. 2016.
— *oppositifó'lia.* 1. June. 1783. B. M. t. 1902. Syn., *G. latifolia*.
— *seri'cea.* 1½. July. 1786.
— *simplex.* 1. July. 1786. B. M. t. 812.
— *stri'cta.* 2½. June. 1810.
— *tomentó'sa.* 4. Pale yellow. March. B. R. t. 2761.

Goat's Beard. *Spiræ'a aru'ncus.*

Goat's Foot. *O'xalis capri'ná.*

Goat Moth. See *Co'ssus ligni'perda*.

Goat's Rue. *Gale'ga.*

Goat's Thorn. *Astra'galus traga-ca'ntha.*

Gobbo. See *Artichoke*.

Gode'tia. (Named after *M. Godet*, a foreigner.) Nat. ord., *Onagraceæ*.) See *Ænothera*.

Hardy annuals. Seed sown in common soil, in March and April; also in September, and protected with an evergreen branch in winter.

G. albe'scens. 1½. Purple. June. Columbia River. 1841. B. R. 1842, t. 9.
— *decu'mbens.* See *Ænothera decumbens*.
— *grandifó'ra.* 2½. White, purple. July. Columbia River. 1831. B. R. 1842, t. 61.
— *le'pida.* B. R. t. 1849. See *Ænothera lepida*.
— *Lindlé'yi.* See *Ænothera Lindlé'yi*.
— *pu'mila.* See *Ænothera*.
— *purpu'rea.* See *Ænothera purpurea*.
— *quadrivó'lnera.* See *Ænothera quadrivalvis*.

- G. Romanzo'vii*. 1. Purple. June. N. Amer. 1827. B. R. t. 562.
 — *ro'seo-a'liba*. 1. Red, white. May. Nepal. 1827.
 — *rubicu'nda*. B. R. t. 1856. See *Oenothera rubicunda*.
 — *tenella*. See *Oenothera tenella*.
 — *tenuifo'lia*. See *Oenothera tenuifo'lia*.
 — *vimi'nea*. See *Oenothera viminea*.
 — *vino'sa*. B. R. t. 1880. See *Oenothera vinosa*.
 — *Whi'tneyi*. 1. Crimson. Summer. 1871. Fl. Mag., newser. t. 227.

God'ya. (Named after *E. Godoy*, whose Spanish title was the Prince of Peace. Nat. ord., *Ochnaceæ*; Tribe, *Luxemburgiæ*.)

Stove evergreen trees. Cuttings of ripened shoots in sand, under a glass, and in strong bottom-heat.

- G. gemmifo'ra*. 8. Yellow. Brazil. 1820.
 — *sple'ndida*. 10. White. Columbia. 1869.

Godwinia gi'gas. B. M. t. 6048. See *Dracontium gigas*.

Goe'thea. (In honour of the poet *Goethe*. Nat. ord., *Malvaceæ*; Tribe, *Ureneæ*.)

- Stove evergreen. For culture, see PAVONIA.
G. Mackoy'na. 2. Blackish, rose. Brazil. 1878. B. M. t. 6427. Syn., *Pavonia Mackoyana*.
 — *multifo'ra*. Dull purple, red. September. Brazil. 1876. Syns., *Pavonia multiflora* and *P. Woti*.
 — *strictifo'ra*. 1½. Crimson, white. August. Brazil. 1852. B. M. t. 4677.

Golden Apple. *Æ'gle*.

Golden Hair. *Chryso'coma comau'rea*.

Golden Rod. *Solida'go*.

Golden Saxifrage. *Chrysople'sivium*.

Golden Thistle. *Sco'lymus and Pro'tea sco'lymus*.

Goldfu'ssia. (Named after *Dr. Goldfuss*, professor of natural history in the university of Bonn. Nat. ord., *Acanthaceæ*.) United with **Strobilanthes**.

- G. anisophy'lia*. B. M. t. 3403. See *Strobilanthes anisophylla*.
 — *glomera'ta*. B. M. t. 3881. See *Strobilanthes glomeratus*.
 — *isophy'lia*. B. M. t. 4363. See *Strobilanthes isophyllus*.
 — *Thomso'ni*. B. M. t. 5119. See *Strobilanthes Walli'chii*.

Goldy Locks. *Chryso'coma*.

Gomez'a. (After *Bernhard Ant. Gomez*, a Portuguese naval surgeon, who wrote on Brazilian plants in 1803. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidææ*.)

Stove orchids.

- G. Barke'ri*. 1. Green. January. Brazil. 1836. Syns., *Rodriguezia Barkeri*, B. M. t. 3497, and *Odontoglossum Barkeri*.
 — *cri'spa*. Greenish-yellow. October. Brazil.

1839. Syns., *Rodriguezia crispa*, B. R. 1840, t. 54, and *Odontoglossum crispatum*.

- G. folio'sa*. Yellow, red. February. Brazil. 1825. Syns., *Odontoglossum foliosum*, *Pleurothallis foliosa*, B. M. t. 2746, and *Rodriguezia suaveolens*.
 — *laxifo'ra*. ½. Pale green. Brazil. 1834. Syns., *Rodriguezia laxiflora* and *Odontoglossum laxiflorum*.
 — *planifo'lia*. Yellowish-green, white. February. Brazil. Syns., *G. recurva* of B. C. t. 660, *Rodriguezia planifolia*, B. M. t. 3504, and *Odontoglossum planifolium*.
 — *recu'rva*. ¾. Yellowish-green. May. Brazil. 1824. B. M. t. 1748. Syns., *Rodriguezia recurva*, and *Odontoglossum recurvum*.

Gom'phea. Button Flower. (From *gomphos*, a club; said to be the shape of the fruit. Nat. ord., *Ochnaceæ*; Tribe, *Ochnææ*.)

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.

- G. de'corans*. Yellow. Brazil. 1868.
 — *Jabota'pita*. 5. Jamaica. 1820.
 — *læviga'ta*. 4. 1820.
 — *laurifo'lia*. 5. Jamaica. 1823.
 — *ni'tida*. 4. Jamaica. 1803.
 — *obtusifo'lia*. 3. Madagascar. 1803.
 — *olivæ'formis*. Yellow. Brazil. 1861.
 — *Theophrá'sta*. Orange. Mexico. Syn., *Wolkensteinia Theophrasta*.
 — *zeyla'nica*. 4. Ceylon. 1823.

Gomphoca'rpus. (From *gomphos*, a club, and *karpos*, a fruit; shape of the seed-pods. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynancheæ*. 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 fibry peat.

- G. arbo're'scens*. 5. White. December. 1714. Syn., *Asclepias arborescens*, Jacq. H. Schœnb. t. 50.
 — *cri'spus*. 1. Yellow. July. 1714.
 — *frutico'sus*. 5. White. July. 1714. B. M. t. 1628. Syns., *G. sinai'cus* and *Asclepias fruticosus*.
 — *navicula'ris*. White. July.
 — *padifo'lius*. Ref. Bot. t. 254. See *Xysmalobium*.
 — *sinai'cus*. See *G. fruticosus*.

Gompholo'bium. (From *gomphos*, a club, and *lobos*, a pod; shape of seed-vessel. Nat. ord., *Leguminosææ*; Tribe, *Podalyriææ*.)

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 fibry pieces, with rubby charcoal, potsherds, and silver sand; drainage must be well attended to, as saturated soil is their ruin. All have yellow flowers, except where otherwise mentioned.

- G. adu'ncum*. May. 1837.
 — *angustifo'lium*. May. 1825.
 — *arista'tum*. May. 1837.
 — — *muticuum*. August. 1839. Syn., *G. Drummondii*.
 — *barbi'gerum*. B. M. t. 4171. See *G. latifolium*.
 — *capita'tum*. 2. July. 1830.

- G. Drummondii*. See *G. aristatum*, var. *muticum*.
 — *glabra* tum. 1½. June. 1820.
 — *glaucescens*. See *G. grandiflorum*, var. *setifolium*.
 — *grandiflorum*. 2. June. 1803.
 — — *setifolium*. 2. June. 1826. Syn., *G. glaucescens* and *G. maculatum*.
 — *Hendersoni*. August. 1840. Syn., *Burtonia Hendersoni*.
 — *Knightsii* num. 2. August. 1830. B. R. t. 1468.
 — *lana* tum. See *G. tomentosum*.
 — *latifolium*. 2. May. 1803. Syn., *G. barbigerrum*.
 — *macula* tum. Andr. Rep. t. 427. See *G. grandiflorum*.
 — *margina* tum. 2. May. 1820. B. R. t. 1490.
 — *minus*. 2. May. 1812. Syns., *G. tetra-theocoides* and *Burtonia minor*.
 — *mirbelioi* des. 1½. May. 1832.
 — *peduncula* re. 2. May. 1824. B. C. t. 1639.
 — *pinna* tum. 2. May. 1820.
 — *polymorphum*. 2. June. 1803. B. M. t. 1533. Syns., *G. tenue*, *G. venulosum*, and *G. versicolor*.
 — *reticula* tum. 1½. May. 1824.
 — *splendens*. June. 1843.
 — *tene*llum. 1½. May. 1824.
 — *tenue*. B. R. t. 1615. See *G. polymorphum*.
 — *tetra-theocoides*. See *G. minus*.
 — *tomentosum*. 3. May. 1803. B. R. t. 1474.
 — *venulosum*. B. R. t. 1574. See *G. polymorphum*.
 — *venustum*. 3. May. 1803. B. M. t. 4258.
 — *versicolor*. B. R. 1839, t. 43, and B. M. t. 4179. A form of *G. polymorphum*.
 — *virga* tum. 1½. May. 1820.

Gomphrena. Globe Amaranth.

(From *gomphos*, a club; the shape of the flowers. Nat. ord., *Amaranthaceae*; Tribe, *Gomphreneae*.)

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, etc., as the Cockscobs.

- G. brasiliensis*. Jacq. Ic. t. 346. See *Mogiphanes*.
 — *coctinea*. Orange-red. Mexico. 1853. Rev. Hort. 1854, p. 9.
 — *decumbens*. Rosy-red. Central America. Jacq. H. Schenb. t. 482. Syn., *G. bicolor*.
 — — *obovata*. Less brilliantly coloured than the type.
 — *globosa*. 1½. Red. July. India. 1714. Annual.
 — — *albiflora*. 1. White. July. India. 1714. Annual.
 — *perennis*. 2. Pale yellow. August. S. Amer. 1732. Herbaceous.
 — *pulchella*. 1½. Rosy. July. Brazil. 1843. Annual.
 — *sericea*. 2. White. Quito. 1820. Syn., *Alternanthera sericea*.
 — *villosa*. Striped. June. Monte Video. 1826. Evergreen shrub.

Gonutis. (A palm of that name in Malabar. Nat. ord., *Palmeae*; Tribe, *Areceae*.) Now included in **Arenga**.

Stove palm. Seed, on strong heat; peat and loam.

- G. saccharifer*. 40. Moluccas, 1820.

Gonatanthus. (From *gonia*, an angle, and *anthos*, a flower; alluding to the bent flower-spathe. Nat. ord.,

Araceae; Tribe, *Colocasieae*. Allied to *Colocasia*.)

Stove perennial with handsome leaves. For cultivation, see *COLOCASIA*.

- G. sarmentosus*. Yellow. E. Indies. B. M. t. 5275.

Gonatotus. (From *gonu*, the joint or knot of a reed, and *pous*, a foot; the leaf-stalk is swollen at the middle. Nat. ord., *Araceae*.) Now referred to **Zamioculcas**.

Stove tuberous perennial, requiring the same treatment as *ANCHOMANES*, which it somewhat resembles in general appearance.

- G. Boivianii*. 3. Spathe greenish-yellow, brown; spadix greenish-yellow. Zanzibar. 1873. Syn., *Zamioculcas Boivianii*.

Gongo'ra. (Named after a Spanish viceroy of New Grenada. Nat. ord., *Orchideae*; Tribe, *Vandae-Cyrtopodieae*. Allied to *Batemannia*.)

Stove orchids. Divisions; baskets filled and packed with sphagnum, fibry peat, and broken pots, and pieces of charcoal. Summer temp., 60° to 90°, with plenty of atmospheric moisture; winter, 55° to 65°, and dryish.

- G. armenitaca*. Apricot. July. Nicaragua. 1850. Syn., *Acropera armenitaca*.
 — *atro-purpurea*. 1. Dark purple. June. Trinidad. 1824. B. M. t. 3220.
 — — *major*. Purple. May. Demerara. 1834.
 — — *picta*. Yellow, purple. May. Demerara. 1836.
 — *busonia*. 1. Variegated. May. Brazil. 1841. B. R. 1841, t. 2.
 — — *leucochila*. B. R. 1847, t. 17. See *G. quinquenervis*.
 — — *major*. Purple, white. May. Brazil. 1837.
 — — *fulva*. 2. Yellow, blue. July. Mexico. 1838.
 — — *violiflora*. Yellow. May. Mexico. 1841.
 — *cassidea*. Yellow, purple. Columbia. 1874.
 — *Charontis*. Yellow, brown, white, crimson. Columbia. 1877.
 — *flavola*. Light ochre. G. C. 1886, v. p. 466.
 — *galeata*. 1. Yellow, spotted. August. Mexico. 1828. Syns., *Acropera Loddigesii*, B. M. t. 3563, and *Maxillaria galeata*, B. C. t. 1645.
 — *Galeotia* na. Red, yellow. April. Mexico. 1842.
 — *grossa*. Yellowish, blackish-purple. Ecuador. 1877.
 — *leuchochila*. See *G. quinquenervis*.
 — *maculata*. 2½. Yellow-spotted. May. Demerara. 1832. B. R. t. 1616.
 — — *alba*. 2. White. May. Guiana. 1836.
 — *aurantia*. Orange. May. Guiana. 1842.
 — *canadica*. White. May. Guiana. 1843.
 — *citri*na. Yellow. May. Guiana. 1837.
 — *fulgens*. Guiana. 1837.
 — *fulva*. Guiana. 1836.
 — *gracilis*. Guiana. 1839.
 — *grisea*. Demerara. 1836.
 — *igne*a. 2. Flame. May. Brazil. 1837.
 — *lutea*. Guiana. 1835.
 — *sanguinea*. Demerara. 1836.
 — *squarrens*. Guiana. 1837.
 — *tricolor*. 5. Golden-brown. May. Panama. 1842. B. R. 1847, t. 69.
 — *nigra* ta. Dark purple. July. Demerara. 1838.
 — *portentosa*. Yellowish, violet, purple. Spring. Ecuador. 1869. B. M. t. 6284.
 — *quinquenervis*. Yellow, purple. May. Peru.

Syns., *G. bufonia*, var. *leucochila*, and *G. leucochila*.

G. si mikis. Brazil?

— *speciosa*. B. M. t. 2755. See *Coryanthes speciosa*.

— *truncata*. Red, yellow. April. Mexico. 1842. B. R. 1845. t. 56.

— *viridi-purpurea*. B. M. t. 2978. See *Cirrhæa viridi-purpurea*.

Goniophlebium. (From *gonia*, an angle, and *phlebia*, a vein; alluding to the veins of the fronds. Nat. ord., *Filices* — *Polypodiaceæ*. Allied to *Polypodium*.)

Stove ferns. Division in the spring, as fresh growth is commencing; peat and loam. *G. attenuatum* will do with greenhouse treatment.

G. albo punctatum. July. S. Amer. 1840.

— *ama-num*.

— *argutum*. Nepaul. 1845.

— *attenuatum*. †. June. N.S. Wales. 1823.

— *catherinæ*. 1. Brazil. 1841.

— *colpodes*. Venezuela.

— *cuspidatum*. Java.

— *dissimile*. 2. June. Brazil. 1820.

— *distantis*. Tropical America.

— *fraxinifolium*. Tropical America.

— *glaucophyllum*. Columbia. 1874.

— *glaucum*. Brazil.

— *grandiceps*. †. Formosa. 1836.

— *harpedes*. Brazil. 1847.

— *inca-num*. W. Ind. 1840.

— *latipes*. Brazil. 1841.

— *latchnopus*. N. India. 1879.

— *loriceum*. Tropical America.

— *menisifolium*. Brazil. 1840.

— *nerifolium*. 5. July. Brazil, 1837.

— *pectinatum*. †. July. W. Ind. 1793.

— *piiloselloides*.

— *sepiatum*. 1. Brown. Brazil. 1841.

— *sub-auriculatum*. Malay Archipelago.

— *trilobatum*. Chili.

— *vaccinifolium*. Brazil. 1841.

— *va-cillans*. Brazil.

— *verrucosum*. Malacca.

Goniopteris. (From *gonia*, an angle, and *pterus*, a fern; referring to the leaves. Nat. ord., *Filices*.)

Stove ferns. Treatment the same as for *Goniophlebium*. The New Zealand and New Holland species will thrive in the greenhouse.

G. aspera. July. Isle of Luzon.

— *asplenoides*. July. Jamaica. 1841.

— *costata*. June. E. Ind.

— *orenota*. W. Ind. 1835.

— *fraxinifolia*. 2. August. Brazil. 1841.

— *megalodes*. July. W. Ind. 1843.

— *penicillata*. July. New Zealand. 1835.

— *prolifera*. 1. May. E. Ind. 1820.

— *rubida*. July. Isle of Luzon.

— *tetragona*. W. Ind. 1843.

— *urophylla*. June. E. Ind.

Gonioscypha. (From *gonia*, an angle, and *scyphos*, a cup; referring to the bracts at the apex of the inflorescence. Nat. ord., *Liliaceæ*.)

Stove or greenhouse perennial. Sandy loam; seeds.

G. eucomoides. 1. Dull green. Bhotan. G. C. 1886, xxvi. p. 744.

Gonocalyx pulcher, is probably a species of **Ceratostemma**. It is a beautiful greenhouse shrub, with bright rose-coloured flowers, and was introduced from Columbia in 1858.

Gonolobus. (From *gonia*, an angle, and *lobos*, a pod; referring to the shape of the seed-vessel. Nat. ord., *Asclepiadaceæ*; Tribe, *Gonolobæ*.)

The hardy species by seeds and divisions, in dry, sandy soil. The greenhouse and stove species by 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. discolor. See *G. obliquus*.

— *la-vis*. Green. June. N. Amer. 1806. Syn.,

G. viridiflorus. B. R. t. 1126.

— *macrophyllus*. 6. Yellow. July. N. Amer.

— *Nuttallianus*. 4. Green. July. Mississippi.

— *obliquus*. 8. Purplish. July. N. Amer.

1809. Syns., *G. discolor* and *Cynanchum*

discolor. B. M. t. 1273.

GREENHOUSE TWINERS.

G. carolinensis. 6. Brownish-purple. July.

Carolina. 1824. Deciduous. Syn.,

Cynanchum carolinensis. Jacq. Ic.

t. 342.

— *prostratus*. See *Lachnostoma prostratum*.

STOVE TWINERS.

G. crispiflorus. See *Fischeria scandens*.

— *Cundurango*. See *Marsdenia Cundurango*.

— *diadema-tus*. Green. September. Mexico.

1812. B. R. t. 252.

— *Ghiesbreghtii*. Jamaica. 1858.

— *grandiflorus*. 10. Green. July. Trinidad.

1826.

— *hipsidus*. B. M. t. 3786. See *Fischeria*.

— *maritimus*. B. R. t. 931. See *Lachnostoma*.

— *Martiana*. See *Fischeria*.

— *ni-ger*. 6. Dark purple. October. Mexico.

1825.

— *refracta*. Brazil.

— *repens*. Jamaica.

— *scolopendroides*. Jamaica.

— *serrulata*. Jamaica.

— *suberosus*. 6. Green. August. S. Amer.

1782. Syn., *Cynanchum suberosum*.

Goodea. (Named after *Dr. Goodenough*, bishop of Carlisle. Nat. ord., *Goodenoviæ*.)

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. Greenhouse.

G. albescens. Yellow. Australia. 1862.

— *albida*. See *Scævola microcarpa*.

— *bellidifolia*. †. July. 1823.

— *calendula-cea*. Andr. Rep. t. 22. See *Scævola*

suaveolens.

— *coerulea*. Blue. June. Syn., *G. rigida*.

— *decurrens*. 1. May. 1925.

— *gracilis*. †. July. 1822. B. C. t. 1032.

— *grandiflora*. 4. July. 1808. B. M. t. 890.

— *hedera-cea*. †. July. 1813.

— *heterophylla*. 1. Pale red. July. 1826.

— *inca-na*. †. Blue. May. 1842.

— *lavigata*. B. M. t. 287. See *Scævola micro-*

carpa.

— *ovata*. 2. July. 1798.

— *paniculata*. 1. July. 1823.

— *rigida*. See *G. coerulea*.

— *stelligera*. †. June. 1823.

— *tenuella*. Andr. Rep. t. 466. See *Velleia*

trinervis.

Goodia. (Named after *P. Good*, a

collector of plants in Australia for Kew Gardens. An anomalous genus of *Leguminosæ*.)

Greenhouse evergreen shrubs, with yellow blossoms. Seeds and cuttings of the young shoots in May, in sand, under a glass; sandy peat and fibry loam. A shady place for the pots in summer.

G. latifolia. 3. June. Australia and Tasmania. 1793. B. M. t. 958.

— *polyseperma*. 2. June. S. Africa. 1790. Now called *Argyrolobium Andrewianum*.

— *pubescens*. June. Tasmania. 1805. B. M. t. 1310.

Goodyera. (Named after *J. Goodyer*, a British botanist. Nat. ord., *Orchidaceæ*; Tribe, *Neottieæ-Spirantheæ*. Allied to *Neottia*. Syn., *Peranium*.)

Terrestrial orchids. Divisions of the roots; peat and loam, with a little decayed wood and charcoal.

HARDY.

G. pubescens. 3. White. July. N. Amer. 1802. B. M. t. 2540.

— *repens*. 3. White. July. Scotland. B. C. t. 1987.

— *tessellata*. 3. White. July. N. Amer. 1821. B. C. t. 952.

STOVE.

G. cordata. Yellowish-brown. September. India. 1870. Syn., *Georchis cordata*.

— *discolor*. 1. White. November. S. Amer. 1815. B. R. t. 271.

— *macrantha*. Pink; leaves yellow-edged, veins bright green. Japan. 1867.

— *macrophylla*. 3. White. August. Madeira. 1880.

— *Ordia'na*. See *Anæctochilus*.

— *procera*. 2. White. June. Nepaul. 1821. B. R. t. 639.

— *rubicunda*. Cinnamon. July. Manilla. 1838.

— *Rodrigasia'na*. Leaves velvety green; midrib whitish. New Guinea. 1886. III. Hort. t. 616.

— *velutina*. Pink; leaves purplish-green, midrib white. Japan. 1867.

G. Domini and *G. Veitchii* are garden hybrids.

Gooseberry. *Ribes grossularia*.

Varieties.—*General Dessert Kinds.*

The letters R. Y. G. W. refer to the colours, red, yellow, green, white.

— Champagne, R. and Y.; Early Green, hairy, G.; Golden Drop, Y.; Rockwood, Y.; Pitmaston Green-Gage, G.; Warrington, or Aston Seedling, R.; Taylor's Bright Venus, W.; Whitesmith, W.; Glenton Green, G.; Walnut, G.; Early Sulphur, Y.; Massey's Heart of Oak, G.; Wellington's Glory, W.; Rumbullion, Y.

Late Dessert kinds (for retarding on trellises).—Warrington, R.; Pitmaston Green-Gage, 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.; Wel-

lington's Glory, W.; Queen Charlotte, W.; Greenwood, G.; Glenton Green, G. There are many new sorts that do well in particular localities, and these should be selected with great care.

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, more or less, 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*.

Gordonia. (Named after Mr. Gordon, a London nurseryman. Nat. ord., *Ternstroemiaceæ*; Tribe, *Gordonieæ*. Allied to *Stuartia*.)

Hardy deciduous shrubs, except where otherwise stated; 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. *G. pubescens* and its variety *subglabra* are the hardiest; but *lasiantha* 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. andromala*. 3. Cream-colour. November. Tropical Asia. 1816. Syn., *Polyspora azillaris*. B. M. t. 4019. Greenhouse.
— *Franklinii*. See *G. pubescens*, var. *subglabra*.
— *grandis*. White. 1880. Greenhouse.
— *hematoxylon*. 40. White. Jamaica. 1820. Stove.
— *javaniica*. 4. White. August. Java. 1850. Paxt. Fl. Gard. i. p. 140, f. 93.
— *lasiantha*. 6. Yellow. September. N. Amer. 1739. B. M. t. 688.
— *pubescens*. 4. White. July. Carolina. 1774.
— *subglabra*. 4. White. September. N. Amer. 1774. Syn., *G. Franklinii*.

Gorse. *Ulex europæus*.

Gorteria. (Named after D. Gorter, a Dutch botanist. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*. Allied to *Gazania*.)

Greenhouse annual. Sow in common soil in the greenhouse, in March; or in the open border at the end of May.

- G. acutifolia*. See *Haplocarpha Leichtlinii*.
— *asteroides*. Jacq. Ic. t. 591. See *Berkheya incana*.
— *pavonia*. Andr. Rep. t. 528. See *Gazania pavonia*.
— *personata*. †. Yellow. August. Cape of Good Hope. 1774.
— *ringens*. B. M. t. 90. See *Gazania ringens*.

Gossypium. Cotton-tree. (From *goz*, Arabic for a soft substance. Nat. ord., *Malvaceæ*; Tribe, *Hibisceæ*.)

The cotton of commerce is the woolly covering of the seeds of several species of this genus. *G. barbadense* and *herbaceum*, 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 hot-bottom-heat; rich, sandy loam.

- G. arboreum*. 12. Yellow. July. E. Ind. 1694. Evergreen shrub.
— *barbadense*. 5. Yellow. September. Barbadoes. 1750. Biennial. B. R. t. 84.
— *Comestit*. Yellow, with blood-red spot at the base of each petal. 1889. Syn., *G. indicum*, var. *Comestit*.
— *herbaceum*. 3. Yellow. July. E. Ind. 1594. Annual.
— *indicum*. 3. Yellow. August. E. Ind. 1800. Biennial.
— *Kirkii*. E. Tropical Africa. 1881. Probably the source of the cultivated varieties of *G. barbadense*.
— *latifolium*. 5. Yellow. July. 1800. Evergreen shrub.
— *obtusifolium*. 5. Yellow. July. E. Ind. Evergreen shrub.
— *religiosum*. 3. Yellow. July. India. 1777. Herbaceous perennial.

Gouania. (Named after A. Gouan, once professor of botany at Montpellier. Nat. ord., *Rhamnææ*; Tribe, *Gouanieæ*.)

Evergreen stove climbers. Cuttings of half-ripened shoots in sand, under a bell-glass, in bottom-heat; fibry peat and sandy loam.

- G. cordifolia*. 10. Yellow. Rio Janeiro. 1820.
 — *domingensis*. 10. Yellow. W. Ind. 1739.
 — *integrifolia*. 10. Green, yellow. 1800.
 — *mauritia*. 10. Green, yellow. Mauritius. 1823.
 — *tiliifolia*. 10. Yellow. July. E. Ind. 1810.
 — *tomentosa*. 10. Green, yellow. W. Ind. 1823.

Gourd. *Cucurbita* and allied genera.

Gove'nia. (Named after *J. R. Gowen*, a distinguished horticulturist, and cross-breeder of plants. Nat. ord., *Orchideæ*; Tribe, *Vandæo-Cyrtopodiæ*. Allied to *Batemanina*.)

Stove terrestrial orchids. Divisions of the plant; peat and loam, with a little charcoal and silver sand.

- G. Andrieuxii*. Yellowish, white, purple. Mexico. 1884.
 — *deliciosa*. White, purple. 1884.
 — *fasciata*. 1½. Yellow. January. Mexico. 1843.
 — *Garáneri*. 2. Green, yellow. December. Organ Mountains. 1837. B. M. t. 3660.
 — *lagenophora*. 1½. White. January. Mexico. 1844.
 — *lika'cea*. 1. White. July. Mexico. 1837.
 — *sulphurea*. Pale yellow. Paraguay. 1885.
 — *superba*. 5. Yellow. March. Mexico. 1823.
 — *utricula'ta*. 1½. Cream. August. Jamaica. 1843. B. M. t. 4151.

Grabowski. (In honour of *H. Grabowsky*, a Silesian botanist, who lived at the end of the last century. Nat. ord., *Solanaceæ*.)

Hardy or half-hardy shrubs.

- G. boerhaviaefolia*. 6. Dull blue. April. Peru. 1780. B. R. t. 1985.
 — *duplicata*. Greenish. July. S. Brazil. 1840. B. M. t. 3541.

Grællsia. (Name unexplained. Nat. ord., *Cruciferae*; Tribe, *Alysinæ*. Allied to *Aubretia*.)

Half-hardy herbaceous plant, suited for rock-work; common sandy soil; division, and cuttings under a hand-light, in sandy soil, in summer.

- G. saxifragæfolia*, ½. White. July. Persia. 1844.

Graft, 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 plant. 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:—1st. To increase choice kinds. 2nd. To increase the vigour of delicate kinds. 3rd. To

reduce the vigour of those which are too gross. 4th. To accelerate the period of fruiting. 5th. To adapt kinds to soils for which they would be unfitted on their own roots. 6th. To renovate old kinds.

We now proceed to give a series of cuts, 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 from which the wood itself is produced, just as when the sides of a wound have to be reunited. This power exists in the cambium layer, which lays 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 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, etc. 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 represented in this sketch, is only a kind of crown grafting, and is practised on stocks 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 alburnum 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; the cut will sufficiently illustrate it.

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 albuminous union. The cut will explain it.



ground.



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, and we only insert the annexed engraving, because it completes our catalogue of all the known modes. 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 inches 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:

1st. 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.

2nd. Let all the processes be per-

formed with a very clean and exceedingly sharp knife, taking care that nothing, such as dirt or chips, gets between the scion and the stock.

3rd. 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.

4th. 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-scrappings to the mass. A vessel with very finely-sifted 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 whole 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 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. *Amomum gra'na-paradi'si*.

Gramma'ngis. (From *gramma*, writing; referring to the markings on the flowers. Nat. ord., *Orchidæ*; Tribe, *Vandæe-Cymbidieæ*.)

Stove orchids. Same culture as SACCOLOBIUM

G. Ellisii. †. Sepals yellow, marked with brown; petals and lip whitish. Summer. Madagascar. Syn., *Grammatophyllum Ellisii*. B. M. 5179.

— *Daya'num*. Brown, yellow. 1880.

— *Huttoni*. Pale brown, chocolate; lip greenish with chocolate stripes. June. Java. 1867. Syn., *Cymbidium Huttoni*. B. M. t. 5676.

Gramma'nthes. (From *gramma*, writing, and *anthos*, a flower; marks like V being on the corolla. Nat. ord., *Crassulaceæ*.)

Half-hardy annuals, from South Africa. Sow thinly in pots, well-drained; lime-rubbish and sandy loam, equal parts; plants may be kept in a greenhouse, or planted on rock-work in summer.

G. chlorastro'ra. †. Yellow, red. July. 1774. B. M. t. 4607.

— *caesia*. †. Orange, yellow. July. B. M. t. 6401.

— *gentianoides*. †. Pinkish-red. 1788. Fl. Ser. t. 518. Syns., *G. dichotoma* and *G. retroflexa*.

Grammatoc'a'rpus. (From *grammata*, letters, and *karpus*, fruit; in allusion to the markings on the fruit. Nat. ord., *Loaseæ*. Syn., *Scyphanthus*.)

Half-hardy annual twiner.

G. volu'bilis. Golden-yellow. August. Chili. 1824. B. M. t. 5028. Syn., *Scyphanthus elegans*.

Grammatophy'llum. (From *grammata*, letters, and *phyllon*, a leaf; referring to the markings on the leaves. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Cymbidiææ*. Allied to *Brassia*.)

Stove orchids. Divisions; basket well raised in it, and packed with sphagnum and fibry peat.

G. elegans. Polynesia. 1883.

— *Ellisii* and its var. *Daya'num*. See *Grammangis Ellisii*.

— *Measuresia'num*. 5. Yellow, with dark brown blotches. Phillipine Islands. 1889.

— *multiflor'um*. 2. Brown, green. May. Manilla. 1838. B. R. 1839, t. 65.

— *trigr'num*. Spotted. May. Manilla. 1837. B. R. 1839, t. 69.

— *panther'num*. New Guinea. 1878.

— *Rampleria'num*. Madagascar. 1877.

— *specios'um*. 6. Yellow, brown. May. E. Ind. 1837. B. M. t. 5157.

Grammi'tis. (From *gramma*, writing; in reference to the spore-cases, or seed apparatus. Nat. ord., *Filices*. See also *Gymnogramme* and *Polypodium*.)

Chiefly stove ferns, with brownish-yellow spores. Division; peat and loam.

G. austr'al'is. July. N.S. Wales. 1822.

— *cuculla'ta*. July. Isle of Luzon. 1840.

— *elonga'ta*. July. W. Ind. 1824.

— *furca'ta*. July. Trinidad. 1825.

— *hirta*. July. Isle of Luzon. 1840.

— *lanco'la'ta*. July. Mauritius. 1824.

— *linea'ris*. July. Jamaica. 1823.

Granadi'lla. This is a name sometimes given to several species of the *Passiflora*; but one only is the true *Granadilla*, *Passiflora quadrangula'ris*; but *P. e'dulis* 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, etc.

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 *Cucurbitaceæ* 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. e'dulis*—in fact, a heat equivalent to the Pine stove; whilst *P. e'dulis* 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. e'dulis* 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 fertilizing 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. edulis* 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.

Granary Weevil. See *Cala'ndra grand'ria*.

Grange'ria. (Named from *N. Granger*, a traveller in Egypt and Persia. Nat. ord., *Rosaceæ*; Tribe, *Cryso'balan'ceæ*.)

Stove evergreen tree. Cuttings of ripe shoots in sandy soil, in heat, under a glass; peat and loam.

G. borbo'nica. 40. White. Bourbon. 1823. Syn., *G. buzi'folia*.

Grape Hyacinth. *Musca'ri*.

Grape Pear. *Amela'nchier botrya'pium*.

Grape Vine. *Vi'tis vin'ifera*.

Varieties for Walls.—1, August Muscat. 2, Early Black July. 3, Miller's

Burgundy. 4, Esperione. 5, Hâtif di Génes. 6, Royal Muscadine, White. 7, Royal Muscadine, Black. 8, Sweet Water, White Dutch. 9, Sweet Water, Black. 10, Black Hamburg. 11, Black Prince. 12, Claret. 13, Verdelho. 14, Pitmaston White Cluster. 15, Lashmar's Seedling.

As superior kinds for a pretty good climate and aspect, we recommend Nos. 2, 4, 6, 8, 10, 11; as kinds for inferior aspects, Nos. 2, 6, 10, 14.

For Greenhouse.—1, Black Hamburg. 2, Black Damascus. 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, 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, Black Hamburg. 6, Black Damson. 7, Royal Muscadine. 8, Dutch Sweet Water. 9, Chasselas Mnsqué. 10, West's St. Peter's. 11, Charlesworth Tokay. 12, Black Barbarossa. Of these, Nos. 1, 2, 3, 4, 11, are kinds of superior merit, and require much heat. No. 7, 8, at the warmest end, will be exceeding early. Nos. 5, 6, 9, 10, will provide for a succession. Of No. 12, we at present have no experience: it is stated to be a very long keeper, and is highly recommended.

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 wood 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, etc., 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 a while. 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 alburnous matter, 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 mean time 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 viney 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, etc., 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 in-door 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 in-door 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, etc.

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 in-door 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 another quarter of coarse manure, leaf-mould, etc., 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, etc. 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, a 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 facilitate 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 bor-

ders; 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 effected 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 dampness 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 greater demand is made upon it to sustain the excessive perspiration 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 over-heating 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 dis-

ease, 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*.

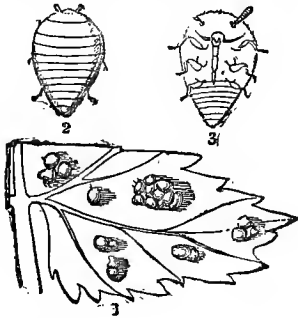
Insects.—See *Acarus*, *Aphis*, *Coccus*, *Curculio*, and *Thrips*.

Grape Phylloxera, or **Grape Louse**. *Phylloxera vastatrix*. This terrible enemy to the Grape-vine is an insect intermediate in character between the *Aphididae* (plant-lice), and *Coccidae* (scale-insects, mealy bug, etc.), but is retained in the former family.

The Phylloxera attacks both the leaves and roots of the Vine, and has

two corresponding types of existence, which may be designated respectively the Gall type and Root type.

The *Gall type* is found in the galls formed by itself upon the leaves (Fig. 1). Each gall contains one, or some-



times two insects; they are always females, as no male of the gall type is known to exist. The insect is exceedingly small, being about $\frac{1}{16}$ of an inch in length, and is of a dull orange colour; it has very short legs and antennæ, and is furnished with a sucker. Fig. 2 represents the insect seen from above, and Fig. 3 seen from beneath, highly magnified. These females deposit a number of eggs in the gall, which hatch in a few days; the young lice then crawl out of the gall and spread over the plant, usually settling down upon the younger leaves, and at once commence to suck their juices. The puncture causes the tissues of the leaf to bulge out and thicken on the underside, forming a cavity above, which gradually deepens and incloses the louse, forming the gall; the mouth of the gall is closed in with hairs. In a few days after forming the gall, the louse commences to deposit eggs—the number deposited by each louse is said to average about two hundred—these hatch and make new galls, and the process is repeated during the summer for five or six generations. When the leaves fall, the gall louse migrates to the roots and there hibernates. The gall type does comparatively little harm to the Vine.

The Root type.—Of this type there are two forms, a wingless and a winged form. When first hatched the larvæ of both forms are alike, and almost undistinguishable from those hatched in the galls; after a time they shed their smooth larval skin and become tubercled or warted, which is never the case with

the gall type. Soon two forms are distinguishable: the one is of a greenish yellow, with the front part swollen out, tapering at the abdomen; the other is of a brighter yellow, with a more oval outline, and the abdomen more truncated at the tip.

The first form, like the gall type, never acquires wings, but remains upon the roots of the Vine, and is employed in depositing parthenogenetic eggs during the greater period of its existence. As it matures it becomes more degraded in structure, especially with regard to the eyes, which are perfect in the larva state, and gradually become more simple with each moult, finally consisting of but triple eyelets.

The second form is more active than that just described, and when mature is furnished with wings. In the larval and pupa state the body is tubercled. When the pupa are full fed, they crawl up to the surface of the ground and over the Vines, and there assume the winged state. The body of the winged insect is without tubercles; it is of a deep yellow colour, with whitish wings. Most of these are females with an enlarged and elongated abdomen; the abdomen of the males is short and contracted, terminating in a fleshy protuberance. The winged insects are chiefly developed during the latter part of July, August, and September; and it is this form that is chiefly concerned in the spread of the disease, for the wingless root type and gall type can only spread the disease by crawling from Vine to Vine—necessarily a slow process.

The injury done to the Vines is effected by the root type, as the gall type is comparatively harmless. The root *Phylloxera* commences its attack by feeding on the juices of the tips of the roots, the punctures made by the insect causing a swelling, and finally the decay of the root attacked; they then attack a fresh root, until the whole of the root system is eventually destroyed by them, and the Vine dies. The first year of attack there is scarcely any outward sign of disease; but the second year it is made evident by the unhealthy appearance of the leaves, and the small amount of growth. The symptoms become more and more evident, and the third or fourth year the Vine dies; though before death takes place the *Phylloxera* leaves the doomed Vine for a fresh one.

Remedies.—No disease among plants has probably ever caused such consterna-

tion in Europe as the Phylloxera disease, and consequently no disease has perhaps had so many remedies tried upon it, or with such little effect. The remedies said to be most efficacious are submersion, and the application of sulpho-carbonate of potassium.

If submersion by flooding with water be tried, it should be done very thoroughly or it is of little avail. It should be done two or three times during the autumn and winter months, allowing the water to remain five or six weeks each time. During the growing season the Vines should not be inundated for more than two or three days at a time; by this plan, where practicable, the insect may be effectually exterminated.

The application of the sulpho-carbonate of potassium seems to be the best and simplest yet discovered, as it is said to completely destroy the Phylloxera, without injuring the Vine in the least. It is applied thus:—Take from 1 to 1½ oz. of dry sulpho-carbonate of potassium and dissolve in water; the solution is to be poured into holes made around the stem of the Vine, and the holes plugged up.

Great care should always be taken to prevent the introduction of the Phylloxera into a vinery. Any suspected plants should be bathed in some strong soap-suds before planting, and the soil well sprinkled with lime, sulphur, or potassic salts mixed with guano, or alkaline sulphate, mixed with copperas and rapeseed; or watered with sulphuret of potassium dissolved in liquid manure.—Condensed from the "Gardeners' Chronicle" for 1874.

Graptophyllum. (From *grapho*, to write, and *phyllon*, a leaf; referring to the markings on the leaves. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*. 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.

- G. Ea'rhii.* 10-15. Red. Australia. Syn., *Eartia exelsa*.
- *hort'e'ise.* Crimson. July. 1815. Syn., *Justicia pieta*. B. M. t. 1227. The Caricature Plant.
- *tu'rido-sangu'neum.* Leaves purplish, with blood-red veins. Syn., *Justicia pieta*, var. *tu'rido-sanguinea*. B. M. t. 1870.
- *mediaura'tum.* See *Aphelandra mediauratum*.
- *vers'icolor.* Leaves blotched with rosy-white, veins purple. India. 1861.

Grasses for lawns and grass-plots. — See **Lawns**.

Grati'ola. Hedge Hyssop. (From *gracia*, grace; referring to its medicinal

virtues. Nat. ord., *Scrophulariaceæ*; Tribe, *Gratiolææ*. Allied to *Mimulus*.)

Hardy herbaceous plants. Division of the plants in spring; rich, moist soil. *G. latifolia* and *tetra'gona* require the protection of a frame in winter.

- G. au'rea.* ½. Yellow. June. N. Amer. 1820. B. C. t. 1399.
- *caroline'nsis.* See *G. virginiana*.
- *latif'olia.* See *G. peruviana*.
- *megalo'carpa.* Pale yellow. July. N. Amer. 1828.
- *offici'nal'is.* 1. Light blue. July. Europe. 1568.
- *peruvia'na.* 1. White. July. N. Holland. 1822. Syn., *G. latifolia*.
- *pilo'sa.* White. July. N. Amer. 1827.
- *quadridenta'ta.* See *G. ramosa*.
- *ramo'sa.* ½. White. June. N. Amer. 1821. Syn., *G. quadridentata*.
- *tetra'gona.* B. M. t. 3134. See *Stemodia lobeloides*.
- *veronicæ'folia.* See *Bonnaya veronicæ'folia*.
- *virgi'nicæ.* 1. Yellow. August. Virginia. 1759. *G. carolinensis*.

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.

Grave'sia. (Dedicated to *Mr. Graves*, a botanical collector in Madagascar. Nat. ord., *Melastomaceæ*. Allied to *Bertolonia*.)

Dwarf stove herbs, with beautiful variegated leaves. Seeds and cuttings, which should be rooted in bottom-heat. Rich sandy loam. Moist atmosphere.

G. gutta'ta. Lilac. Brazil. 1864. Belg. Hort. 1870, t. 14. Syn. *Bertolonia guttata*. B. M. t. 5524.

— — — *a'lbo-punctulla'ta*. Brazil. 1864.

— — — *margarita'cea*. Leaves white-spotted. Brazil. 1862. Syn., *Bertolonia margaritacea*.

— — — *ro'seo-punctulla'ta*. Brazil. 1864.

— — — *super'ba*. Leaves brilliant olive-green, marked with rose-coloured spots. Madagascar. Syn., *Bertolonia superbissima*.

Great Burnet. *Pote'rium Sanguis-or'ba*.

Great Centau'rea. *Centau'rea centau'rium*.

Greene'ria fuligi'nea. A fungus producing the disease, known as "Bitter-rot," on grapes.

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

maybe 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 stages 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 compen-

sated 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 to grow the shoots slowly, 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, etc., 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 cleanest, 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 eye-sore 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, more or less, according to the surface of glass, or the presence of opaque walls; 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 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, etc., the forwarding of the growth of Camellias, Epacris, Azaleas, etc., 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 tempera-

tures and atmospheres in one house as you please, by regulating the ventilation of the different compartments. Slight wooden movable divisions we find extremely useful 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, etc., 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 approach-

ing 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 quick-lime 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 mid-day, 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 organizable 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 evapora-

tions, 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 unutilized, 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 organizable 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 $1\frac{1}{2}$ 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: 1st, clean pots; 2nd, secure drainage by an inverted small pot inside a larger one, or by crocks so as to fill it three-quarters full; 3rd, place rough material or moss over the drainage, to prevent the finer soil washing through it; 4th, cover it with an inch or so of sandy soil, similar to that 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; 5th, 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 *Fuci* 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 *Fucus vesiculosus*, so distinguishable by the bladders full of air embedded in its fronds, 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. *Genista pilosa* and *tinctoria*.

'Greigia. (Named after Major-General Greig, a promoter of Russian horticulture. Nat. ord., *Bromeliaceæ*; Tribe, *Bromeliæ*.)

Stove epiphyte. For cultivation, see BILLBERGIA.

G. sphacelata. White and purplish. Chili. 1865. Fruit eatable. Syn., *Billbergia sphacelata* and *Bromelia clandestina*.

Grevillea consp'cua. This is *Pe-largo'nium consp'civum*.

Grevillea. (Named after C. F. Greville, a patron of botany. Nat. ord., *Proteaceæ*; Tribe, *Grevilleæ*. 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 a callus has formed 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°. *Rosmarinifolia* and *mucronulata* have stood out in sheltered places, with little or no protection.

G. acanthifolia. 4. Purple. June. New S. Wales. 1824.

— *acuminata*. See *G. mucronulata*.

— *alpi'na*. 4. Red, yellow. May. Victoria. Syn., *G. alpestris*. B. M. t. 5007.

— *annulifera*. W. Australia. 1882.

— *aquifolia*. Victoria. 1820.

— *aspera*. 3. Pink. June. S. Australia. 1824.

— *asplenifolia*. 5. Pink. July. New S. Wales. 1806. B. M. t. 7070. Syn., *G. longifolia*.

— *Ba'nksii*. 15. Red. Queensland. 1868. B. M. t. 5870.

— *Bau'eri*. 4. Red. June. New S. Wales. 1824. Syn., *G. pubescens*. B. C. t. 1229.

— *berberifolia*. 4. Red. June. 1821.

— *bipinnatifida*. W. Australia. 1837.

— *brachy'ntha*. Purple.

— *buxifolia*. 6. Pink. June. New S. Wales. 1790. B. R. t. 443. Syn., *Embothrium buxifolium*. Andr. Rep. t. 218.

— *Calcy'*. 5. Red. June. 1830. B. M. t. 8133.

— *canes'cens*. 5. Green, tawny. New S. Wales. 1824.

— *ceratophylla*. See *G. refracta*, var. *ceratophylla*.

— *cine'ra*. 4. Red. June. New S. Wales. 1822. Syn., *G. stylosa*. *G. cinerea* of B. C. t. 857 is *G. mucronulata*.

- G. colli'na*. 4. Pink. June. 1812.
 — *conci'na*. 4. Purple. June. 1824.
 — *Drummo'ndii*. 4. White, yellow. June. W. Australia. 1859.
 — *e'legans*. 4. Red, yellow. June. 1859.
 — *erico'f'ia*. Red, greenish. Winter. E. and S. Australia. B. M. t. 6361.
 — *eriosa'cha*. 3-6. Orange. W. Australia.
 — *fascicu'la'ta*. Reddish. Spring. W. Australia. 1873. B. M. t. 6105.
 — *ferrugi'nea*. See *G. floribunda*.
 — *Flinde'r'sii*. 3. Purple. June. New S. Wales. 1824.
 — *floribu'nda*. 3. 1837. Syn., *G. ferruginea*.
 — *Forste'ri*. Scarlet. Australia. 1873.
 — *gibbo'sa*. Queensland. 1821.
 — *Gilliv'ra'i*. 5. White. June. New Caledonia. 1854.
 — *glabra'ta*. 5. White. May. Syns., *G. Manglesii*, *Anadenia Manglesii* and *Manglesia glabrata*.
 — *heterophy'la*. See *G. refracta*, var. *ceratophylla*.
 — *Hilli'na*. Queensland. 1862.
 — *Hookeri'na*. Yellow, crimson. S.W. Australia. B. M. t. 6879.
 — *intra'ca'ta*. 6. White. May. W. Australia. 1871. B. M. t. 5919.
 — *juniperi'na*. 4. Pink. June. N.S. Wales. 1822. B. R. t. 1089.
 — — *sulphu'rea*. 4. Pale yellow. June. 1824.
 — *Lawrencea'na*. White. 1839.
 — *linea'ris*. 6. White. June. 1790. Syns. *G. stricta* and *Embothrium lineare*. Andr. Rep. t. 272.
 — — *a'la*. 4. White. June. 1790.
 — — *incarna'ta*. 4. Flesh. June. 1790.
 — *longifo'lia*. See *G. asplenifolia*.
 — *macrostylis*. Crimson and yellow. April. W. Australia. 1868. B. M. t. 5915.
 — *Mangle'sii*. See *G. glabrata*.
 — *monta'na*. 4. Violet. June. 1822.
 — *micromifo'lia*. 3. Violet. June. 1824.
 — *mucromu'la'ta*. 4. Pink. June. 1809. Syns., *G. acuminata* and *G. cinerea* of B. C. t. 857.
 — *planifo'lia*. 2. Orange. June. 1823.
 — *Preissii*. B. M. t. 5837. See *G. Thelmanniana*.
 — *pube'scens*. B. C. t. 1229. See *G. Baueri*.
 — *pulche'ra*. 2. White. April. S.W. Australia. 1872. B. M. t. 5979.
 — *puncta*. Purple. June. 1822.
 — *refra'cta ceratophy'la*. 4. White. June. 1821. Syns., *G. ceratophylla* and *G. heterophylla*.
 — *robu'sta*. 5. Orange. June. 1829. B. M. t. 3184.
 — *ro'sea*. Pink. June. 1850.
 — *rosmarinifo'lia*. 4. Red. June. 1824. B. M. t. 5971.
 — *seri'cea*. 6. Pink. June. New S. Wales. 1790. Syn., *G. dubia*. B. M. t. 3798.
 — *stri'cta*. See *G. linearis*.
 — *styl'o'sa*. See *G. cinerea*.
 — *sulphu'rea*. See *G. juniperina*, var. *sulphurea*.
 — *Thelmannia'na*. 3-5. Yellowish-green, red. Spring. W. Australia. 1838. Syn., *G. Preissii*. B. M. t. 5837.
 — *trifurca'ta*. 3. Red. June. 1821.

Gre'wia. (Named after *Nehemiah Grew, M.D.*, who wrote on the Anatomy of Plants. Nat. ord., *Tiliaceæ*. Syns., *Chadara* and *Mallococea*.)

Stove and greenhouse trees and shrubs. Cuttings in sand under a bell-glass. Sandy loam and leaf-soil.

- G. asiatica*. 12. Yellow. July. E. Indies. 1792.
 — *occidentalis*. 10. Purple. July. S. Africa. 1690. B. M. t. 422.

- G. parvifl'ora*. 2-3. Yellow. N. China. 1888.
 — *sapi'da*. Yellow. Tropical Himalayas. Decumbent.

Gre'ya. (Named after *Sir George Grey*, Governor-General of the Cape Colony at the time of the discovery of this plant. Nat. ord., *Sapindaceæ*.)

Greenhouse shrub. Seeds; cuttings of the half-ripened shoots, in sand, under a hand-glass. Rich sandy loam. To make it flower well it should be periodically deprived of water for a time. Its time of flowering in its native country is August and September, a period that corresponds with our early spring. Should be exposed to full sunlight and not over-watered.

- G. Sutherla'ndi*. Crimson-scarlet. March. Natal. 1859. B. M. t. 6040.

Gri'as. Anchovy Pear. (From *grao*, to eat; the fruit being eatable. Nat. ord., *Myrtaceæ*; Tribe, *Lecythidæ*. Allied to *Gustavia*.)

Stove evergreen trees. Cuttings of ripe shoots in sand, under a bell-glass, in peat; rich sandy loam.

- G. caulifo'ra*. 50. White. Jamaica. 1768. B. M. t. 5622.
 — *zamore'nsis*. Peru. 1879.

Grie'lum. (From *grielum*, old-looking; referring to the grey, hoary aspect of the plants. Nat. ord., *Rosaceæ*; Tribe, *Neuradæ*. Allied to *Neurada*.)

Greenhouse herbaceous perennials, from South Africa, all having yellow flowers. Division of the roots in spring; rough, sandy soil, well drained.

- G. humifu'sum*. 1. May. 1825. Swt. Geran. t. 306.
 — *laciniatum*. $\frac{1}{2}$. August. 1825.
 — *tenuifo'lum*. 2. May. 1780. Swt. Geran. t. 171.

Griff'nia. (Named after *W. Griffin, Esq.*, a patron of botany. Nat. ord., *Amaryllidæ*; Tribe, *Amaryllææ*. Allied to *Eucrosia* in leaf, and to *Lycorus* in the flower.)

Stove bulbs, from South America. 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. Blumenavia*. 1. White, pink. Brazil. 1866. B. M. t. 5666.
 — *drya'des*. 1 $\frac{1}{2}$. Lilac-blue. Rio de Janeiro. 1868. B. M. t. 5786. Syn., *Amaryllis dryades*.
 — *hyacinthina*. 1. Blue. July. 1815. Syn., *Amaryllis hyacinthina*, B. R. t. 163.
 — — *micrantha*. Flowers smaller. Winter. 1880.
 — *intermedia*. $\frac{3}{4}$. Blue. April. 1823. B. R. t. 990.
 — *Libonia'na*. $\frac{1}{2}$. Blue. March. Brazil. 1848. Lem. Jard. Fl. t. 290.
 — *orna'ta*. 1. Pale lilac. February. Brazil. 1876. B. M. t. 6367.
 — *parvifl'ora*. 2. Pale purple. August. 1815. B. R. t. 511.

Grinde'lia. (Named after *H. Grindel*, a German botanist. Nat. ord., *Compositæ*; Tribe, *Asteroidæ*.)

Hardy and half-hardy plants, all with yellow flowers, and from Mexico, except when otherwise mentioned. *Ciliata* 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.

HERBACEOUS.

- G. angustifolia*. 1. August. 1822. Syn., *G. Duvalii*. *G. angustifolia* of B. R. t. 781 is *G. arguta*.
 — *ciliata*. 1½. August. N. Amer. 1821. Biennial. Syn., *Donia ciliata*.
 — *Duvalii*. See *G. angustifolia*.
 — *grandiflora*. 4. Orange. July. Texas. 1851. Biennial. B. M. t. 4628.
 — *speciosa*. 2. Yellow. Patagonia. 1852.
 — *squarrosa*. 2. August. Missouri. 1811. Syn., *Donia squarrosa*. B. M. t. 1706. Hardy.

EVERGREEN.

- G. coronopifolia*. 1½. August. 1826.
 — *glutinosa*. 2. Peru. 1803. Syn., *Donia glutinosa*, B. R. t. 187.
 — *inuloides*. 1½. August. 1815. B. R. t. 248.
 — *Lambertii*. 2. August. 1816.
 — *spathulata*. 1½. August. 1819.

Griselinia. (Apparently commemorative. Nat. ord., *Cornaceae*.)

Evergreen laurel-leaved shrubs, nearly hardy. Layers and cuttings. Light rich loam.

- G. litoralis*. 30. New Zealand. 1872.
 — *lucida*. 10. New Zealand.
 — — *macrophylla*. A large-leaved variety. 1884.

Grislea. (Named after *G. Grisley*, a Portuguese botanist. Nat. ord., *Lythraceae*. 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, fibry and sandy.
G. secunda. 4. Pale pink. Venezuela. 1820.
 — *tomentosa*. B. M. t. 1906. See *Woodfordia floribunda*.

Grobya. (Named after *Lord Grey of Groby*. Nat. ord., *Orchidaceae*; Tribe, *Vandace-Cyrtopodiaceae*.) United to *Zygotetulum*.

Gronovia. (Named in honour of *Dr. John Frederick Gronovius*, a learned botanist of Leyden. Nat. ord., *Loaseae*.)

Stove or greenhouse climbing annuals. The seeds should be sown on a hotbed; when large enough, pot off singly and train upon sticks. Rich sandy loam. The hairs sting like those of a nettle, which is likewise the case with many of the *Loaseae*.

- G. pulchella*. Lilac, purple, white. Brazil. 1866.
 — *scandens*. Yellow. S. America. 1790. Jacq. Ic. t. 338.

Grotto is a resting-place, formed rudely of rock-work, 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. *Cerasus chamaecerasus*.

Ground Cistus. *Rhodothamnus chamaecistus*.

Ground Ivy. *Ne'peta glecho'ma*.

Ground Nut. *A'pios tuberosa*.

Ground Senna. *Ca'ssia chamaecrista*.

Groundsel Tree. *Ba'ccharis halimifolia*.

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.

Gryllotalpa. See **Mole Cricket**.

Guaiacum. Lignum Vitæ Tree. (The aboriginal name in South America. Nat. ord., *Zygophyllaceae*.)

The Guaiacum bark of *G. officinale* 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, fibry loam.

- G. arboreum*. 30. Blue. Trinidad. 1816.
 — *officinale*. 40. Blue. August. W. Ind. 1694. B. R. 1839, t. 9.
 — *verticillata*. 8. Blue. W. Ind. 1820.

Guano. See **Dungs**.

Gua'rea. (The native name. Nat. ord., *Meliaceae*; Tribe, *Trichiliceae*. Allied to *Amora*.)

Stove evergreen trees. Same culture as for *Guaiaecum*.

- G. grandiflora*. 20. White. June. S. Amer. 1752. Syn., *G. trichiloides*.
 — *ramiflora*. 20. White. Porto Rico. 1822.
 — *Sua'rtzii*. 20. White. June. W. Indies. 1822.
 — *trichiloides*. See *G. grandiflora*.

Guate'ria. (Named after *Guatteria*, an Italian botanist. Nat. ord., *Anonaceae*; Tribe, *Uvarieae*.)

The flowers of *G. virgata* are exceedingly sweet. Stove evergreen trees and shrubs. Cuttings of half-ripened shoots in April, as for *Guaiacum*.

- G. cerasoides*. 16. Green. E. Ind. 1820.
 — *lavrifolia*. 8. White. Jamaica. 1818.
 — *rufo*. 3. Brown. July. China. 1822. B. E. t. 836.
 — *suberosa*. 8. White. E. Ind. 1820.
 — *virgata*. 30. White. Jamaica. 1793. Lance-wood.

Guava. (*Psidium pyrifolium*.) This stove 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.

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., *Sterculiaceæ*; Tribe, *Buettneriæ*. Allied to *Theobroma*.)

The fruit of *G. ulmifolia* is full of a sweet, agreeable pulp. Stove evergreen trees. Cuttings of ripened shoots, and general treatment as for *Guaiacum*.

- G. polybotrya*. 12. Yellow. Brazil. 1816. Syn., *Bubroma polybotryum*.
 — *tomentosa*. 20. Cumana. 1820.
 — *ulmifolia*. 40. Yellow Jamaica. 1739. Syn., *Bubroma Guazuma*.

Guelder Rose. *Viburnum opulus*.

Guernsey Lily. *Nerine sarniensis*.

Guetta'rdia. (Named after *E. Guettard*, a French botanist. Nat. ord., *Rubiaceæ*; Tribe, *Guettardeæ*.)

Stove evergreen trees. General treatment as for *Guaiacum*.

- G. coccinea*. See *Isertia coccinea*.
 — *hirsuta*. 20. Peru. 1820.
 — *hucida*. See *Stenostomum lucidum*.
 — *odora*. 10. Red. Jamaica. 1818.
 — *rugosa*. 20. W. Ind. 1793.

- G. tomentosa*. See *Stenostomum tomentosum*.
 — *sca'bra*. 20. White. W. Ind. 1818.
 — *speciosa*. 20. White. Madagascar and India. 1771. B. R. t. 1393.

Guevi'na. Chilian Nut. (The native name. Nat. ord., *Proteaceæ*. Syn., *Quadria*.)

Greenhouse evergreen tree. Peat and loam. Cuttings in sand under a hand-glass.

- G. Avellana*. 40. White; fruit coral red, edible. June. Chili. 1826. G. C. 1884, xxii. p. 41.

Guicheno'tia. (In honour of *M. Antoine Guichenot*, a French gardener and traveller. Nat. ord., *Sterculiaceæ*; Tribe, *Lasiopetaleæ*.)

Greenhouse shrubs. Cuttings in sand under a bell-glass. Loam and a little peat.

- G. ledifolia*. 3. White. Spring. Australia. 1868. Syn., *Lasiopetalum Baueri* of some gardens.
 — *macrantha*. 3. Purple. March. Swan River. 1847. B. M. t. 4651.

Guilandi'na. Nicker-tree. (Named after *M. Guilandinus*, a Prussian botanist. Nat. ord., *Leguminosæ*; Tribe, *Cæsalpinieæ*.) Now united to *Cæsalpinia*.

Stove evergreen shrubs. Seeds in a hotbed, in spring; cuttings, etc., as for *Guaiacum*.

- G. Bonduc*. 19. Yellow. India. 1640. Syn., *Cæsalpinia Bonduc*.
 — *Bonducella*. 8. Yellow. E. Ind. 1700. Syn., *Cæsalpinia Bonducella*.
 — *microphylla*. Brazil.
 — *Moringa*. Jacq. Ic. t. 461. See *Moringa pterygosperma*.

Guilie'ma. (Dedicated to *Queen Frederica Guilielma Carolina* of Bavaria. Nat. ord., *Palmaceæ*.)

Stove palm. Imported seeds. Rich loam and peat, with a top dressing of rotten cow-dung.

- G. utilis*. Costa Rica. 1872.

Guinea Peach. *Sarcocœphalus*.

Guinea Plum. *Parinarium excelsum*.

Gum Ammoniac. *Dore'ma ammoniacum*.

Gum Arabic Tree. *Acacia arabica*.

Gum Cistus. *Cistus ladaniferus*.

Gum Elemi Tree. *Ammyris Plumieri*.

Gum Lac Tree. *Bursera frondosa*.

Gum Senegal Tree. *Acacia Senegal*.

Gum-tree. *Eucalyptus robusta*.

Gumming. See **Extravasated Sap**.

Gunde'lia. (In honour of *Andrew Gundersheimer*, a German botanist and traveller, who lived at the commencement of the eighteenth century. Nat. ord., *Compositæ*.)

A hardy perennial. Sandy peat. Divisions and seeds.

G. Tournefortii. 1½. Chocolaté, yellow. June. From Afghanistan to Algeria. 1739. Rev. Hort. 1888, p. 53, f. 12.

Gu'nnera. (In honour of *J. E. Gunner*, a Swedish bishop and botanist. Nat. ord., *Arabiaceæ*.)

Hardy ornamental foliaged herbaceous perennials, requiring a protection of leaves in winter. Division. Rich loam.

G. brepho'gea. Greenish. Columbia. 1873.
— *manica'ta*. Leaves large, parasol-shaped. S. Brazil. 1867. Rev. Hort. 1884, t. 531.
— *perpe'nsa*. 1½. Green. August. Cape of Good Hope. B. M. t. 2376.
— *sca'bra*. 4. Green. August. Chili, 1849. Syn., *G. chilensis*. It has large rhubarb-like leaves; their acid stalks are eaten.

Gu'nnia. See *Sarcochilus*.

Gusta'via. (Named after *Gustavus III.* of Sweden. Nat. ord., *Myrtaceæ*; Tribe, *Lecythideæ*.)

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. *G. augu'sta* is a splendid, low, evergreen tree, something like a Myrtle or a *Barringtonia*.

G. augu'sta. 10. White. Guiana. 1794.
— *brastlie'nsis*. Rosy-white. Rio Negro. 1866.
— *fastuo'sa*. 20. White. May. Guiana. 1824.
— *graci'llina*. Rose. September. Columbia. 1874. B. M. t. 6151.
— *ins'i'gnis*. 4. White. July. Columbia. 1855. B. M. t. 5069.
— *pteroca'rrpa*. White. Tropical America. 1861. B. M. t. 5239. Syn., *G. Leopoldii*.
— *Theophr'a'sta*. White. Tropical America. 1873.

Gutierrez'ia. (Probably commemorative. Nat. ord., *Compositæ*; Tribe, *Asteroidæ*.)

Hardy annual. Division. Common garden-soil.
G. gymnospermoides. 4. Yellow. September. New Mexico. 1859. B. M. t. 5155.

Guzma'nnia. (Named after *A. Guzman*, a Spanish naturalist. Nat. ord., *Bromeliaceæ*; Tribe, *Tillandsiæ*. Allied to *Caraguata*, with which it is sometimes united.)

Stove herbaceous perennial. Suckers; rich soil.

G. Bullia'na. Bright red. Summer. Andes of New Grenada. 1884. Syn., *Caraguata angustifolia*.
— *Devansaya'na*. Bracts scarlet; flowers white. Ecuador. 1882. Belg. Hort. 1883, p. 113.
— *erythroce'phala*. Chiriqua. 1883.
— *fra'grans*. See *Canistrum eburneum*.
— *Fuerstenbergia'na*. Bracts bright red; flowers white. Ecuador. 1883. Syn., *Caraguata Fuerstenbergiana*.
— *tricolor*. 1. Green, scarlet. April. S. Amer. 1820. Syns., *Tillandsia monostachya* and *T. pachycarpon*. There are varieties—*fragrans*, *grandis*, and *maculata*.

Gymnade'nia. (From *gymnos*, naked, and *aden*, a gland; the glands of the pollen-masses are naked. Nat. ord., *Orchideæ*; Tribe, *Ophrydeæ-Habenariæ*.)

This genus is scarcely distinguishable from *HABENARIA*, which see for cultivation, and in which it is included in the Genera Plantarum.

G. macra'ntha. 1. Green, flesh-colour. September. Sierra Leone. 1870. Syn., *Eulophia helleborina*.

Gymne'ma. (From *gymnos*, naked, and *nema*, a filament; in reference to the stamens. Nat. ord., *Asclepiadaceæ*; Tribe, *Marsdeniæ*. 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; fibry loam and sandy peat, well drained.

G. tenaci'ssimum. See *Marsdenia tenacissima*.
— *tingens*. 8. July. Trop. Himalayas. 1823. Syns. *G. tingens*, var. *cordifolia*, Wight Ic. 593, and *Asclepias tingens*.

Gymnocla'dus. Kentucky Coffee-tree. (From *gymnos*, naked, and *klados*, a branch; in reference to the soft young wood, devoid of buds. Nat. ord., *Leguminosæ*; Tribe, *Eucæsalpineæ*. Allied to *Parkinsonia*.)

Hardy deciduous trees. 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. canadensis. 20. White. Canada. 1748.
— *chine'nsis*. 10. China. 1889. Soap tree.

Gymnodi'scus. (From *gymnos*, naked, and *discus*, a disk. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*. Allied to *Othonna*.)

Hardy annual. Seeds in March or April, in any common soil.

G. capilla'ris. Yellow. June. Cape of Good Hope. 1822.

Gymnogra'mma. (From *gymnos*, naked, and *gramma*, writing; in reference to the spore-cases. Nat. ord., *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. calome'lanos. 2. July. W. Ind. 1790.
— *chærophy'lla*. ½. June. Brazil. 1825.
— *chrysophy'lla*. 1. July. W. Ind. 1824.
— *corda'ta*. 1. August. Cape of Good Hope. 1838.
— *decompo'sita*. S. America. 1873.
— *eleganti'ssima*. 1889.
— *falca'ta*. May. W. Indies.
— *farini'ferum*. Fronds powdered with white. Ill. Hort. t. 604.
— *ferrugi'nea*. Tropical America.
— *flexuo'sa*. Peru. 1866.
— *hy'brida*. May. S. America.
— *japo'nica*. Japan. 1863.
— *variega'ta*. Japan. 1875.
— *java'nica*. May. Java.

- G. Latha'mia*. Garden hybrid. 1884.
 — *leptophylla*. 1. July. South Europe. 1819.
 — *L'Herminie'ri*. 1. Gnadelonpe.
 — *Marte'nsii*. 2.
 — *peruophylla*. 1. Brazil. 1824.
 — *ochracea*. 1. Yellow. March. Buenos Ayres.
 — *Ped'ra'i*. Peru. 1864.
 — *pedata*. 3. June. New Spain. 1822.
 — *peruvia'na*. 1. July. Peru. 1822.
 — *pulche'lla*. 1 1/2. Venezuela.
 — *ramosa*. Fronds branched. Garden variety.
 — *ru'fa*. 3. June. Jamaica. 1793.
 — *rutae'folia*. 1/2. Australia. Hook. Ic. Fil. t. 90.
 — *schizophylla*. Jamaica. 1881.
 — *sub-pinna'ta*.
 — *sulphu'rea*. 1. July. Jamaica. 1808.
 — *tarta'rea*. 1. August. W. Ind. 1817.
 — *aura'ta*. 2. Peru. 1870.
 — *tomentosa*. Brazil. 1831.
 — *triangula'ris*. 3. Fronds dark orange, or white beneath. 1874. Hook. Ic. Fil. t. 153.
 — *trifolia'ta*. 2. July. Jamaica. 1810.
 — *ve'llea*. New Grenada. 1881.
 — *vesti'ta*. Yellow. May. W. Ind. Ic. Pl. t. 115.
 — *villo'sa*. June. Brazil. 1836.

Gymnol'nia. (From *gymnos*, naked, and *loma*, a border; because there is no pappus. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. Syn., *Gymnopsis*.)

Hardy herbaceous perennials, except *connata*, which requires a greenhouse; allied to RUBECKIA, to which refer for cultivation. It should be protected from severe cold.

- G. connata*. 4. October. Brazil. 1821. Syn., *Gymnopsis connata*.
 — *multiflora*. 1. Yellow. New Mexico. Gfl. 1837. p. 231. Syn., *Helioomeris multiflora*.
 — *triplin'eria*. 3. October. New Spain. 1825. Syn., *Gymnopsis triplinervia*.

Gymno'psis. (From *gymnos*, naked, and *opsis*, like; naked-looking grains. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.) United to **Gymnolomia**.

- G. connata*. See *Gymnolomia connata*.
 — *maculata*. B. R. t. 662. See *Wulfia maculata*.
 — *triplin'eria*. See *Gymnolomia triplinervia*.

Gymno'pteris. (From *gymnos*, naked; and *pteris*, a fern. Nat. ord., *Filices*.)

Stove ferns. Treatment similar to GYMNOGRAMMA.

- G. acuminata*. July. 1831.
 — *alie'na*. Tropical America.
 — *avilla'ris*. June. Isle of Luzon.
 — *nicotianifolia*. July. W. Ind. 1843.
 — *norma'lis*. June. Samarcond.
 — *ophioglossoides*. July. W. Ind.
 — *platyrrhynchos*. Brown. W. Ind.
 — *quercifolia*. Brown. W. Ind. 1840.
 — *subrep'nda*. Brown, yellow. June. Isle of Luzon.
 — *taccos'folia*. June. E. Ind.
 — *triloba'ta*. August. Isle of Luzon.

Gymnospha'ra. (From *gymnos*, naked, and *spha'ra*, a globe; referring to the spore-cases. Nat. ord., *Filices*.)

Stove fern. Treatment similar to GYMNOGRAMMA.

- G. squamula'ta*. Brown, yellow. April. Malacca.

Gymnosta'chys. (From *gymnos*, naked, and *stachys*, a spike. Nat. ord., *Aroideæ*; Tribe, *Orotiæ*. Allied to *Acorus*.)

Greenhouse herbaceous perennial. Suckers and divisions; peat and loam.

- G. d'nceps*. 1. June. N. Holland. 1820.

Gymnosta'chyum. (From *gymnos*, naked, and *stachys*, a spike. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*.)

Stove plants. Leaves variegated. Cuttings. Usual stove treatment. Loam and sandy peat.

- G. ceyla'nicum*. Yellow, white. Ceylon. B. M. t. 4706.
 — *venu'stum*. 1/2. Purple. September. Khasia Mts. Syn., *Justicia venusta*, B. R. t. 1880.
 — *Verschaffe'ltii*. Fl. Ser. t. 1581. See *Fittonia*.

Gymnothe'ca. See *Marattia*.

Gymnothri'x. See *Pennisetum*.

Gynandro'psis. (From *gyne*, female, and *andros*, a male, and *opsis*, like; referring to the appearance of the stamens as if borne on the style. Nat. ord., *Capparidaceæ*; Tribe, *Cleomeæ*. 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; rich, sandy, loamy soil.

STOVE.

- G. pentaphylla*. 2. White. July. E. Ind. 1640. Annual. Syn., *Cleome pentaphylla*, B. M. t. 1681.
 — *specio'sa*. 3. White. July. Carthage. 1818. Biennial.

HARDY ANNUALS.

- G. candela'brum*. 1. Red. July. S. Amer. 1824. B. M. t. 2656.
 — *cocci'nea*. 6-8. Scarlet. Columbia. 1878. Ill. Hort. 1878, t. 310.
 — *pulche'lla*. 1. White. June. Maranhatta. 1825.
 — *sessiliflora*. 1. White. July. W. Ind. 1820.
 — *triphyl'la*. 1. White. July. W. Ind. 1816.

Gyne'rium. (From *gyne*, female, and *erion*, wool; the stigmas being woolly. Nat. ord., *Gramineæ*; Tribe, *Festuceæ*.)

Very ornamental grasses, hardy in the south of England. *G. argenteum*—the Pampas grass—succeeds in any deep rich soil not clayey, but flourishes best on the south side of a sloping ground, sheltered on the north and east sides. April is the best time for planting it. It requires abundance of water during the growing season, and the protection of a mat in winter north of London. If the flower-spikes are required for decorative purposes they should be gathered before the early frosts set in, or they become discoloured.

- G. argenteum*. 12. White. October. Monte. Video. 1848.
 — *purpu'reum*. Panicle purplish. 1866.
 — *juba'tum*. Chimborazo. 1878.

Gyno'xys. (From *gyne*, female, and *oxy*, sharp; alluding to the pointed style. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*.)

Stove climber, with opposite leaves; suitable for trellis-work, and not liable to be attacked by insects. Cuttings. Sandy loam and peat.

G. fragrans. Yellow, white. December. Guatemala. B. M. t. 4511.

Gynu'ra. (From *gyne*, female, and *oura*, a tail; the stigma being elongated and hispid. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*.)

Stove herbaceous perennial. Cuttings. Sandy loam and peat.

G. auranti'aca. Leaves tinged with bright purple. Java. 1822. Ill. Hort. t. 436.

— *bicolor.* 3. Yellow. Moluccas. 1779. B. M. t. 5123. Syn., *Cacalia bicolor*, B. R. t. 110.

— *ovalis.* 3. Yellow. July. China. 1734. Syn., *Cacalia ovalis*, B. R. t. 101.

Gypso'phila. (From *gypsos*, chalk, and *phileo*, to love; in reference to the soil most suitable for them. Nat. ord., *Caryophyllaceæ*; Tribe, *Sileneæ*. Allied to *Saponaria*.)

Both annuals and perennials by seed, and the latter also by division; common garden-soil.

HARDY ANNUALS.

G. tenella. 1. White. July. Europe. 1816.

— *viscosa.* 1½. White. June. Levant. 1773.

HARDY PERENNIALS.

G. cerastio'des. White or lilac, veined pink. May. Temperate Himalayas. 1882. B. M. t. 6699.

— *e'legans.* 1. White. July. Crimea. 1828.

— *fastigia'ta.* 1½. White. June. Germany. 1759.

— *glau'ca.* 1½. White. August. Caucasus. 1822.

— *glomerata.* See *Tunica*.

— *Gmelin'i.* 1. White. August. 1831.

— *perfolia'ta.* 2. Flame. July. Spain. 1732.

— *prostra'ta.* 1. Red. August. Siberia. 1759. B. M. t. 1281.

— *Radda'na.* Pale rose. E. Persia. 1889.

— *repens.* ½. Striped. August. Siberia. 1774.

— *rigida.* See *Tunica*.

— *sabulo'sa.* 1½. White. July. Tauria. 1817.

— *sali'gna.* Pink. June. Europe. 1837.

— *Saxi'fraga.* See *Tunica*.

— *spino'sa.* Pink. June. Persia. 1837.

— *Stev'ni.* 2. White. July. Iberia. 1822.

— *stru'thium.* 2. White. July. Spain. 1729.

— *tenuifo'lia.* 1. Red. July. Caucasus. 1824.

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 pulverized. It has been recommended to be sprinkled in stables, and to be mixed with dung-hills, "to fix the ammonia," as it is popularly termed. All the ammonia lost in fumes from a dung-hill 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 gas-works.

Gyro'mia. (From *guroma*, round; the shape of the flowers in section. Nat. ord., *Liliaceæ*.) See *Medeola*.

H.

Habena'ria. (From *habena*, a rein; referring to the long, strap-shaped spur. Nat. ord., *Orchideæ*; Tribe, *Ophrydeæ-Habenarieæ*. Allied to *Gymnadenia* and *Bonatea*. Syn., *Platanthera*.)

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. bifolia. White. June. Britain. Eng. Bot. ed. 3, t. 1464.

— *blephariglo'ttis.* White. May. Canada. 1820. B. C. t. 925. Syn., *Platanthera holopetala*.

— *bractea'ta.* 1. Pink, white. Salis. Parad. t. 112.

— *cilia'ria.* Yellow. June. N. Amer. 1796. B. M. t. 1668. Syn., *Platanthera ciliaris*.

— *corda'ta.* Green. Madeira. 1832. B. M. t. 3164.

— *crista'ta.* Yellow. September. N. Amer. 1806. Syn., *Platanthera cristata*.

— *dilata'ta.* 1½. White. September. Canada. 1823. Syn., *Platanthera dilatata*.

— *herbi'ola.* Green. June. N. Amer. 1789. Syn., *Platanthera herbiola*.

— *Hooker'i.* Green. June. N. Amer. 1822. Syn., *Platanthera Hookeri*.

— *hyperbo'rea.* Green. June. N. Amer. 1805. Syn., *Platanthera hyperborea*.

— *inci'sa.* Pale yellow. June. N. Amer. 1826. Syn., *Platanthera incisa*.

— *inta'cta.* Purplish. Spring. S. Europe. Syn., *Aceras secundiflora*, B. R. t. 1525.

— *Macowania'na.* S. Africa. 1889. Syn., *Bra-chycorythis Macowaniana*.

— *pro'cera.* 2. Green. August. N. Amer. 1822. B. R. t. 1858.

— *psycho'des.* Yellow. June. N. Amer. 1826.

STOVE.

H. ala'ta. ½. Yellow. June. W. Indies. 1823.

— *ca'ndida.* 1. White. July. Sierra Leone. 1844.

— *ca'rnea.* Pink. Singapore. G. C. 1891, x. p. 729, fig. 105.

— *fla'va.* Yellow. July. Australia. 1823.

— *giga'ntea.* B. M. t. 3374. See *H. Susanne*.

— *goodyer'o'des.* 1. White. December. Bombay. 1834. B. M. t. 3397.

— *gra'cilis.* 1½. Yellow. July. E. Ind. 1823.

— *interme'dia.* 1. Greenish. N. India. 1879.

— *lepto'ceras.* 1½. Green, yellow. October. 1824.

— *Linde'ni.* White. August. Caraccas.

— *longica'ca.* Greenish-white. Demerara. 1830.

— *macro'ceras.* 2. White. June. W. Ind. 1825.

— *maculo'sa.* White. September. Nerida.

— *margarita'cea.* See *Spiranthes*.

— *margina'ta.* ¾. Yellow. July. E. Ind. 1822.

— *membrana'cea.* July. Sierra Leone. 1826.

- H. militaris*. 1. Green; lip scarlet. Cochinchina. 1886. Warn. Orch. Alb. t. 281.
 — *ochroleuca*. †. Pale yellow. June. N. Holland. 1824.
 — *radiata*. Green, white. Japan. 1880. Syn., *Platanthera radiata*.
 — *Susanensis*. Green, white. India. 1834. Syn., *H. gigantea* and *Platanthera Susanensis*.

Habe'ria. (In honour of Karl Konstantin Haberle, a Professor of Botany at Pesth. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*.)

Hardy perennial herb, a native of the Balkan Mountains. For cultivation, see *RAMONDA*, to which it is allied.

- H. rhodopensis*. †. Pale blue. Greece. 1880. B. M. t. 6651.

Habit is the appearance or mode of growth. Thus a *Verbena* may be of straggling, shrubby, or compact habit. This habit is much influenced by soil and cultivation. Thus *Buxus sempervirens* 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. (After C. von Hablitz, a Prussian author and traveller. Nat. ord., *Chenopodiaceæ*.)

A hardy, climbing, deciduous herb. Garden soil. Seeds; divisions.

- H. tamnoides*. Green. Autumn. Caucasus. 1828.

Habra'nthus. (From *habros*, delicate, and *anthos*, a flower. Nat. ord., *Amaryllidaceæ*.) The species with solitary flowers are now referred to *Zephyranthes*, those with umbellate ones to *Hippeastrum*.

- H. Andersoni*. B. R. t. 1345. See *Zephyranthes Andersoni*.
 — *texanus*. B. M. t. 3596. See *Zephyranthes texana*.
 — *angustus*. B. M. t. 2639. A variety of *Hippeastrum bifidum*.
 — *Bagnoides*. B. R. t. 1396. See *Hippeastrum Bagnoides*.
 — *bifidus*. B. M. t. 2599. See *Hippeastrum bifidum*.
 — *concolor*. B. R. 1845, t. 54. See *Zephyranthes concolor*.
 — *fulgens*. B. M. t. 5563.
 — *gracilifolius*. B. B. t. 2464. See *Zephyranthes gracilifolia*.
 — *hesperius*. See *Hippeastrum advenum*.
 — *intermedius*. B. R. t. 1148. See *Hippeastrum bifidum*.
 — *kermesinus*. B. R. t. 1638. A variety of *Hippeastrum bifidum*.
 — *miniatum*. Swt. Fl. Gard. ser. 2, t. 213. See *Hippeastrum advenum*, var. *pallida*.
 — *memorabilis*. See *Hippeastrum bifidum*.
 — *noëlis*. See *Hippeastrum bifidum*.
 — *pedunculatus*. See *Hippeastrum bifidum*.

- H. phycelloides*. B. R. t. 1417. See *Hippeastrum phycelloides*.
 — *pratensis*. B. R. 1842, t. 35. See *Hippeastrum pratense*.
 — *pu'cher*. See *Hippeastrum bifidum*.
 — *pusillus*. B. C. t. 1771. See *Hippeastrum roseum*.
 — *punctatum*. Gfl. t. 1163, fig. 3. See *Hippeastrum*.
 — *robustus*. Swt. Fl. Gard. ser. 2, t. 14. See *Zephyranthes robusta*.
 — *roseus*. Swt. Fl. Gard. ser. 2, t. 107. See *Hippeastrum roseum*.
 — *spathaceus*. See *Hippeastrum bifidum*.
 — *speciosus*. See *Hippeastrum pratense*.
 — *versicolor*. B. M. t. 2485. See *Zephyranthes versicolor*.

Habrotha'mnus. (From *habros*, gay, and *thamnus*, a shrub. Nat. ord., *Solanaceæ*; Tribe, *Cestrineæ*.) United to *Cestrum*, which see.

Greenhouse evergreen shrubs, from Mexico. *H. fasciculatus* grown against a conservatory wall, on an east or west aspect, is hardly 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. carminatus ruber*. Red. Garden variety. 1886.
 — *corymbosus*. B. M. t. 4201. See *Cestrum Endlicheri*.
 — *cyaneus*. See *Ichroma tubulosum*.
 — *elegans*. See *Cestrum elegans*.
 — *fasciculatus*. B. M. t. 4183. See *Cestrum fasciculatum*.
 — *Newellii*. Bright crimson. Seedling. 1876. Garden, August 4, 1888.
 — *purpureus*. B. R. 1844, t. 43. See *Cestrum elegans*.
 — *tomentosus*. See *Cestrum Benthami*.

Hackberry. *Celtis occidentalis*.

Hacquetia. (In honour of B. Hacquet, a German botanist. Nat. ord., *Umbellifereæ*; Tribe, *Saniculeæ*. Allied to *Astrantia*.)

Hardy herbaceous perennial. Division; peat and loam. Does best in a peat bed near water.

- H. epipactis*. †. Yellow. April. Alps. 1823.

Hæmadi'ctyon. (From *haima*, blood, and *diktyon*, a net; referring to the colour of the veins in the leaves. Nat. ord., *Apocynaceæ*; Tribe, *Echitidæ*.) In accordance with the law of priority this name should be superseded by *Prestonia*.

Yellow-flowered, stove, evergreen twiner, from the West Indies. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat; loam and peat, both fibry and sandy.

- H. marginatum*. 6. Yellow. 1888.
 — *nutans*. See *H. venosum*.
 — *madaxima*. Fl. Ser. t. 1728.
 — *refulgens*. Leaves richly coloured. Peru. 1871. Ill. Hort. 1871, t. 49.
 — *subreticum*. July. 1759.
 — *venosum*. 20. July. 1821. Syn., *H. nutans* and *Echites nutans*. B. M. t. 2473.

Hæmanthus. Blood Flower. (From *haima*, blood, and *anthos*, a flower; referring to the colour of the spathe and filaments of some species. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllææ*.)

Greenhouse bulbous plants. Chiefly valued for their leaves, and the markings on the flower-scape. Except *multiflorus* they might be tried in a border, with a glass covering in winter, protected from frost. Offsets; sandy loam, fibry peat, and a little dried cow-dung.

- H. abyssinicus.* See *H. multiflorus*.
 — *albiflos.* 1. White. June. 1791. Jacq. H. Schoenb. t. 59.
 — *albo-maculatus.* ½. White; leaf white-spotted. S. Africa. 1878.
 — *amaryllodes.* ¾. Pink. August. 1825.
 — *Arnottii.* White. S. Africa.
 — *Bauerii.* White. Kaffraria. B. M. t. 6875.
 — *carinatus.* A variety of *H. coccineus*.
 — *carinatus.* ¾. Pink. June. 1819. B. R. t. 509.
 — *cinnabarinus.* ½. Red. W. Africa. 1855. Fl. Ser. t. 1195.
 — *coarctatus.* 1. Pink. February. 1795.
 — *coccineus.* 1. Red. September. 1829. B. M. t. 1075.
 — *carinatus.* ½. Pink. August. 1759. *H. carinatus*.
 — *crassipes.* ¾. Red. June. 1820. Jacq. H. Schoenb. t. 412.
 — *deformis.* ¾. White. March. Natal. 1869. B. M. t. 5903.
 — *hirsutus.* ½. White. Transvaal Republic. 1878.
 — *humilis.* ½. Scarlet. September. 1825. Jacq. H. Schoenb. t. 411.
 — *hyalocarpus.* 1. Red. July. 1822.
 — *incarnatus.* Pink. S. Africa. 1865.
 — *insignis.* See *H. magnificus*.
 — *Kalbreyeri.* See *H. multiflorus*.
 — *Katharinæ.* 1. Red. Natal. 1877. B. M. t. 6778.
 — *lanceifolius.* 1. Red. October. 1794. Jacq. H. Schoenb. t. 60.
 — *Lindeni.* 1½. Rosy-scarlet. Congo. G. C. 1890, viii. p. 436.
 — *maculatus.* 1. June. 1790.
 — *magnificus.* 1½. Scarlet. July. 1838.
 — *insignis.* Scarlet. August. Natal. Syn., *H. insignis*. B. M. t. 4745.
 — *Mannii.* 1. Crimson-scarlet. Spring. Guinea. 1877. B. M. t. 6364.
 — *moschatus.* 1. Red. September. 1816.
 — *multiflorus.* 1. Scarlet. June. Tropical Africa. 1783. Warm greenhouse. B. M. t. 961, and 1995. Syns., *H. abyssinicus*, *H. tenuiflorus* (B. M. t. 3870) and *H. Kalbreyeri* (Fl. Ser. t. 2377).
 — *natalensis.* Green, crimson. Natal. 1863. B. M. t. 5378.
 — *orbicularis.* A synonym of *Brunsvigia gigantea*.
 — *pubescens.* 1. White. July. 1774.
 — *pumilio.* ¾. Pink. August. 1789. Jacq. H. Schoenb. t. 61.
 — *punicus.* 1. Scarlet. June. 1722. B. M. t. 1815.
 — *quadrivalvis.* See *Buphane disticha*. *H. quadrivalvis* of B. M. t. 1523 is *H. pubescens*.
 — *rotundifolius.* 1. Scarlet. July. 1790. B. M. t. 1618.
 — *rupesstris.* ¾. Red. W. Coast of Africa.
 — *sanguineus.* 1. Crimson. August. 1820. Jacq. H. Schoenb. t. 407.
 — *tenuiflorus.* 1. Bright red. April. Mozambique. 1839.
 — *coccineus.* Scarlet. Abyssinia. 1868.

H. tigrinus. 1. Flame. April. 1790. B. M. t. 1705.
 — *toxicarius.* See *Buphane toxicaria*.

Hæmaria. (From *haima*, blood; the under surface of the leaves of some species is of a blood-red colour. Nat. ord., *Orchidææ*; Tribe, *Neotticæ-Spirantheæ*.)

Terrestrial orchids.

- G. discolor.* 1. White; bracts crimson. November. S. China. 1815. Syn., *Goodyera discolor*. B. M. t. 2055.
 — *Olivæ.* ¾. White; lip yellowish. Leaves olive green, with coppery veins. Ill. Hort. t. 124.

Hæmatoxylo. Logwood. (From *haima*, blood, and *xylon*, wood. Nat. ord., *Leguminosææ*; Tribe, *Eucæsalpinææ*.)

Stove evergreen tree. Cutting 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.

- H. campechiarum.* 20. Yellow. S. Amer. 1724. Bent. and Tr. t. 86.

Hæmodorum. Bloodroot. (From *haima*, blood, and *doron*, a gift; referring to the roots being eaten by the natives of Australia. Nat. ord., *Hæmodoræææ*; Tribe, *Euhæmodoræææ*.)

Greenhouse herbaceous plants, from Australia, with orange flowers. Division of the roots, as growth commences, in spring; peat and loam.

- H. planifolium.* 1½. August. 1810.
 — *teretifolium.* 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., *Proteacææ*; Tribe, *Grevilleææ*. Syn., *Mercklinia*.)

Greenhouse evergreen. Australian and Tasmanian 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. An exposed place out of doors in summer.

- H. acanthophylla.* See *H. ceratophylla*.
 — *acicularis.* 3. June. 1790.
 — *Baxteri.* 1830. Ic. Pl. t. 439.
 — *ceratophylla.* 4. Brown. June. 1824. Syn., *H. acanthophylla*.
 — *cinerea.* 5. June. 1808.
 — *clavata.* 5. July. 1824.
 — *cristata.* 1837.

- H. cuculla*'ta. 4. June. 1824. B. M. t. 4528. Syn., *H. Victorica*.
- *Cunninghami*'mii. 14. May. 1824. Syn., *H. longifolia*.
- *daetyloides*. 7. July. 1790. B. M. t. 3760. Syn., *H. ferruginea* of B. C. t. 1501.
- *denticula*'ta. See *H. glabella*.
- *echina*'ta. 3. June. 1824.
- *epiglotis*. 4. May. 1819.
- *ferruginea*. 4. June. W. Australia. 1824. B. M. t. 3424. Syn., *H. repanda*.
- *flavilla*. 4. 1824.
- *florida*. 5. 1808.
- *gibbosa*. 7. May. 1790.
- *glabella*'ta. 12-15. W. Australia. 1837.
- *hirsutifolia*. 4. August. 1803.
- *Lamberti*. 4. 1825.
- *lami'gera*. 3½. June. 1820.
- *latifolia*'ta. 4. 1825.
- *lauri*'na. Rosy-lilac. Australia. G. C. 1885, p. 148, fig. 30.
- *linearis*. 4. May. 1824.
- *longifolia*'ta. See *H. Cunninghami*.
- *margina*'ta. 4. July. 1824.
- *microrr'pa*. N. S. Wales. B. R. t. 475.
- *mitis*'ta. See *H. trifurcata*.
- *myricifolia*'ta. 1823.
- *myrtoides*. 1½. Red. February. Swan River. B. M. t. 4643.
- *nitida*. 5. June. 1808. B. M. t. 2246.
- *nodosa*. 1824.
- *obliqua*. 6. May. 1803.
- *oleifolia*'ta. 5. June. 1794.
- *pectinata*'ta. 4. May. 1810.
- *propinqua*. June.
- *pugionif'ormis*. 6. 1796. B. C. t. 353.
- *repanda*. B. C. t. 1750. See *H. ferruginea*.
- *ruscifolia*'ta. 4. July. 1824.
- *saligna*'ta. 7. April. 1791. Syn., *Embothrium salignum*. Andr. Rep. t. 215.
- *scoparia*. Yellow. Swan River.
- *suaveolens*. 4. 1803.
- *subulata*'ta. 4. May. 1820.
- *suleata*'ta. 4. May. 1820.
- *trif'ormis*.
- *trifurcata*'ta. 5. June. 1824.
- *tuberculata*'ta. 1830.
- *ulc'ina*. 4. 1844.
- *undulata*'ta. 3. June. 1803. Ic. Pl. t. 435-6.
- *varia*. 3. July. 1825.
- *Victorica*'ta. See *H. cucullata*.

Hale'sia. Snowdrop-tree. (Named after *Dr. Hales*, author of "Vegetable Statics." Nat. ord., *Styracaceæ*. Syn., *Pterostyrax*.)

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. d'ptera*. 6. White. April. N. Amer. 1758.
- *hispidata*. White. Japan. 1875. G. C. 1884, xxii. p. 177. Syn., *Pterostyrax hispidum*.
- *parvifl'ora*. 8. White. May. N. Amer. 1822.
- *tetra'ptera*. 10. White. May. Carolina. 1756.

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*, sea-coast, and *dendron*, a tree; referring to its native habitat. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. 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. argenteum*. 6. Pink. May. 1779. Syn., *Robinia Halimodendron*, B. M. t. 1016.
- *brachyse'ma*. 6. Pink. June.
- *subvire'scens*. 6. Pink. May.
- *specio'sum*. Siberia? 1876. Rev. Hort. 1876, p. 30.

Halle'ria. (Named after *Dr. Haller*, a botanist. Nat. ord., *Scrophulariaceæ*; Tribe, *Cheloneæ*. Allied to *Phygelius*.)

Greenhouse evergreen shrubs from South Africa. Cuttings of half-ripened shoots in sand, under a bell-glass; rich, sandy loam. They require plenty of ventilation both summer and winter.

- H. elliptica*. 6. Scarlet. May. 1816.
- *hircida*. 6. Scarlet. May. 1752.

Hal'lia. (After *Bergen Martin Hall*, a pupil of Linnæus. Nat. ord., *Leguminosæ*.)

Greenhouse perennial, sandy loam. Seeds, division, or cuttings in spring.

- H. cordata*'ta. 1. Purple. August. South Africa. Syn., *Hedysarum cordatum*. Jacq. H. Schenb. t. 296.
- *imbricata*'ta. 1½. Purple. South Africa. 1812. B. M. t. 1850 and 2596.

Hal'tica. 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., *Hamamelidæ*.)

Hardy deciduous shrubs, which produce their white 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*. See *H. japonica*.
- *japo'nica*. 20. Pale yellow, claret. Winter. Japan. 1862. B. M. t. 6659. Syn., *H. arborea*.
- *macrophylla*'ta. See *H. virginiana*.
- *virginiana*'ta. 10. May. N. America. 1812. B. C. t. 598. Syn., *H. macrophylla*.

Hamburgh Parsley. *Petroselinum sativum*, var. *latifolium*.

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, etc.

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, and allowed to run in May. Their produce will ripen in July or August. Then to be cut, dried, cleaned, and stored.

Hame'lia. (Named after the celebrated botanist, *Du Hamel*. Nat. ord., *Rubiaceæ*; Tribe, *Hamelieæ*.)

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 fibry loam.

- H. axilla'ris.* See *H. lutea*.
— *chrysa'ntha*. 8. Yellow. November. Jamaica. 1822.
— *latifo'lia*. A synonym of *H. patens*.
— *lu'tea*. 2. Yellow. August. W. Ind. 1822. Jacq. Ic. t. 335. Syn., *H. axillaris*.
— *pa'tens*. 5. Yellow. July. Hispaniola. 1752.
— *sphaeroca'rrpa*. 10. Orange. July. Peru. 1811.
— *ventricosa*. 8. Yellow. September. W. Ind. 1778.

Hamilo'nia. (Named after *Mr. Hamilton*, an American botanist. Nat. ord., *Rubiaceæ*; Tribe, *Pederiaceæ*. 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. fruticosa.* See *Leptodermis lanceolata*.
— *sea'bra*. Pale blue. January. Nepaul. 1823.
— *specta'bilis*. Lilac. Winter. India? 1872. Rev. Hort. 1872, p. 191.
— *suave'olens*. White. October. E. Ind. 1818. B. R. t. 348.

Hammato'phora buce'phala. Buff-tip Moth. This moth is from two or three inches across the opened fore-wings, which are silver-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, inclosing 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 Au-

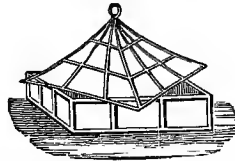
gust and September, but also on the leaves of the elm, oak, etc. The chrysalis is found in the earth; it has two small points at its tail.

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 **Cabbage Diseases.**

Hand-barrow. This is useful for carrying plants, which might be damaged by the vibrations of a wheel-barrow. The form mostly used now has the stage, on which the plants are carried, on a level with the handles. There is also a form with a cage below, which 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 this form:



They are sometimes made with movable tops, as here represented; 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. *Cheiro'stemon*.

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.

Haploca'rpha. (From *haploos*, simple, and *karphe*, a dry scale; the pappus consists of a single row. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*.)

A hardy or half-hardy perennial. Seeds or cuttings. Sandy loam in a sunny dry position.

H. Leichtlinii. 1. Yellow, stained with purple beneath. S. Africa. 1883. Syn., *Gorteria acaulis*.

Haplopa'ppus. (From *haploos*, simple, and *pappos*, down; because there is no outer pappus. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*.)

Half-hardy perennial herb. Seeds, or divisions of the plants. Sandy loam.

H. spinulosus. 1-2. Yellow. August. Rocky Mountains. 1874. B. M. t. 6302. Syn., *Amellus spinulosus*.

Hardenbe'rgia. (Named after the Countess of Hardenberg, in Germany, sister to Baron Hugel. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Kennedia*.)

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.

H. Comptoniana. 12. Purple, lilac. March. 1803. Syns., *H. digitata*, *H. macrophylla*, *Glycine Comptoniana* (Andr. Rep. t. 602), and *Kennedia macrophylla* (B. R. t. 1862).

— *cordata.* April. 1820.

— *digitata.* B. R. 1849, t. 60. See *H. Comptoniana*.

— *longiracemosa.* A synonym of *H. monophylla*.

— *macrophylla.* A synonym of *H. Comptoniana*.

— *Makoyana.* Rev. Hort. 1882, p. 341, fig. 74. A narrow-leaved form of *H. Comptoniana*.

— *monophylla.* 10. April. 1790. Syns., *H. cordata*, *Glycine bimaculata* (B. M. t. 263), *Kennedia cordata* (B. R. t. 944), *K. longiracemosa* (B. C. t. 1940), and *K. monophylla* (B. R. 1336).

— *ovata.* 6. April. 1820. B. M. t. 2169.

— *rosea.* White and pink. Australia. 1874.

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.

Hardwic'kia. (Named after General Hardwicke, of the East India Company. Nat. ord., *Leguminosæ*; Tribe, *Cynometreæ*. Allied to *Cynometra*.)

Stove evergreen trees, with yellow flowers, from the East Indies. Cuttings of ripe young shoots in sandy soil, and in a brisk heat; rich, sandy loam.

H. binata. 40. March. 1820.

— *pinnata.* 40. April. 1818.

Hardy Plants are those which endure uninjured our seasons without protection.

Harebell. *Campa'nula rotundifolia.*

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 canariensis.*

Hare's-Foot. *Ochro'ma logo'pus.*

Haricot. See **Kidney Bean.**

Harina. (From the Indian name. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.) See **Wallichia.**

Haro'nga. (From *rongo*, the name in Madagascar. Nat. ord., *Hypericaceæ*; Tribe, *Vismicæ*.)

Evergreen stove shrub. Cuttings of young shoots getting a little firm, in sandy peat, under a bell-glass, in heat; sandy loam and peat.

H. madagascariensis. 10. Yellow. July. Madagascar. 1825. Syn., *H. paniculata*.

Harpa'lium. (From *Harpalyce*, daughter of Lycurgus. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.) Most of the species of this genus are now included in *Vigniera*, but the only one in cultivation (*H. rigidum*) is known as **Helianthus rigidus**, which see.

Harra'chia. (In honour of Count von Harrach, an Austrian nobleman. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*.) United with **Crossandra**.

H. speciosa. A synonym of *Crossandra infundibuliformis*, var. *peduncularis*.

Harriso'nia. (Named in honour of Mrs. Harrison, of Liverpool, its intro-

ducer. Nat. ord., *Asclepiadaceæ*; Tribe, *Marsdeniææ*.) See *Marsdenia*.

H. loniceroides. B. M. t. 2699. See *Marsdenia loniceroides*.

Harto'gia. (Named after *J. Hartog*, a Dutch naturalist. Nat. ord., *Celastrinææ*; Tribe, *Celastrææ*. Allied to *Elæodendron*.)

Evergreen shrub, from South Africa. Cuttings of the ripe shoots under a bell-glass; sandy loam and peat. Usually grown in the greenhouse, but may stand out of doors in sheltered places in the south.

H. cape'nsis. 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., *Orchidææ*; Tribe, *Epidendrææ-Lælicææ*.)

Stove orchids. Division of the plant in spring; very fibry peat, potsherds, and charcoal.

H. crassifo'lia. Purple. April. Guatemala. 1840.

— *ge'mma*. Amethyst. 1878.

— *purpu'rea*. 1. Purple. August. Vera Cruz. 1837.

— — *angustifo'lia*. 1. Purple. June. Mexico. 1842.

Hassagay-tree. *Curti'sia*.

Hasti'ngia. (In honour of *Warren Hastings*, once Governor-General of India. Nat. ord., *Verbenacææ*; Tribe, *Viticeææ*.) See *Holmskioldia*.

Hatchet-vetch. *Bise'rulla*.

Hautboy or **Hautbois.** See **Strawberry.**

Hawk-fly. See **Scæva.**

Hawkweed. *Hiera'ceum*.

Hawo'rthia. (Named in honour of *A. H. Haworth, Esq.*, a distinguished English botanist. Nat. ord., *Liliacææ*; Tribe, *Aloineææ*.)

For culture, etc., see **ALOE**, to which it is closely allied. They are natives of South Africa, some, however, are of garden origin, and all have grey flowers.

H. affi'nis. 1875.

— *albicans*. 1. July. 1795. Syn., *Aloe albicans*, B. M. t. 1452.

— *altiti'nea*. †. August. 1824.

— *angustifo'lia*. †. June. 1824.

— *arachno'ides*. 1. August. 1727. Syn., *Aloe arachnoides*, B. M. t. 756.

— — *mi'nor*. 1. August. 1819.

— *arista'ta*. 1. July. 1820.

— *asperiu'scula*. †. June. 1818.

— *atro-virens*. 1. May. 1823. Syn., *Aloe arachnoides*, var. *atro-virens*, B. M. t. 1361.

— *attenua'ta*. 1. July. 1790. Syn., *Aloe Radula*, B. M. t. 1345.

— *bilinea'ta*. White, red. 1875.

— *Bolu'sii*. Whitish. 1873.

— *bre'vis*. †. June. 1810.

— *chloracæ'ntha*. †. August. 1820.

— *claripe'ria*. †. June. 1824.

H. coarcta'ta. †. August. 1821.

— *conci'nna*. †. 1823.

— *Cooperi*. †. White, red. S. Africa. 1862. Ref. Bot. t. 233.

— *cordifo'lia*. †. June. 1817.

— *cu'vra*. †. July. 1816.

— *cuspid'a'ta*. †. August. 1819.

— *cymbifo'rmi's*. †. June. 1795. Syn., *Aloe cymbiformis*, B. M. t. 802.

— *denticula'ta*. †. August. 1819.

— *disti'ncta*. †. Whitish. S. Africa. 1876.

— *ere'cta*. †. August. 1818.

— *expa'nsa*. 1. August. 1795.

— *fascia'ta*. †. August. 1818.

— — *ma'jor*. †. July. 1820.

— *glabra'ta*. White, reddish. 1834.

— — *co'ncolor*.

— — *pervi'ridis*.

— *glau'ca*. 1879.

— *grana'ta*. †. July. 1735.

— *Gree'nii*. 1879.

— *hy'brida*. †. June. 1821.

— *icosiphy'lla*. 1872.

— *indura'ta*. †. June. 1820.

— *le'te-virens*. †. August. 1819.

— *le'vis*. †. August. 1820.

— *li'mpida*. †. August. 1819.

— *margariti'fera*. 1. July. 1739. Syn., *Aloe margaritifera*.

— — *coralli'na*.

— — *me'dia*. Syn., *Aloe margaritifera*, var. *media*, B. M. t. 815.

— *mi'nima*. 1872.

— *mi'nor*. 1. June.

— *mira'bilis*. †. July. 1795. Syn., *Aloe mirabilis*, B. M. t. 1354.

— *mucrona'ta*. †. July. 1820.

— *multifa'ria*. †. July. 1824.

— *mu'tica*. †. July. 1820.

— *ni'gra*. 1822. Syn., *Apicra nigra*.

— *ni'gricans*. †. August. 1822.

— *ni'tida*. 1. July. 1825.

— *obtu'sa*. †. June. 1824.

— *pa'llida*. †. June. 1820.

— *papillo'sa*. 1. June. 1820.

— — *semipapillo'sa*. 1‡. June. 1820.

— *pa'ra*. †. May. 1821.

— *Peaco'ctii*. 1879.

— *pili'fera*. †. White, green. S. Africa. 1862. Ref. Bot. t. 234.

— *planifo'lia*. †. April. 1824.

— *polyphy'lla*. 1860.

— *pseu'do-tortuo'sa*. 1. July. 1818.

— *pu'mila*. 1. May. 1752.

— *ra'dula*. 1‡. May. 1805. Syn., *Aloe radula*, Jacq. H. Schoenb. t. 482.

— — *aspe'rior*. 1. August. 1820.

— — *le'vior*. 1. August. 1825.

— — *pluriperla'ta*. 1. August. 1820.

— *rami'fera*. †. August. 1821.

— *recu'vra*. 1. August. 1795. Syn., *Aloe recurva*, B. M. t. 1353.

— *Reinwa'rthii*. †. June. 1820.

— *reticula'ta*. †. June. 1794. Syn., *Aloe arachnoides*, var. *reticulata*. B. M. t. 1314.

— *retu'sa*. 1. June. 1720. Syn., *Aloe retusa*. B. M. t. 455.

— *ri'gida*. †-1. 1795. Syn., *Aloe expansa*, B. C. t. 1430.

— *ru'go'sa*. 1814.

— *sa'bra*. †. June. 1818.

— *semiglabra'ta*. †. June. 1811.

— — *semimargariti'fera*. 1. April. 1819.

— — *ma'jor*. 1. April. 1819.

— — *mi'nor*. 1. April. 1819.

— — *multi'perla'ta*. 1. April. 1819.

— *seta'ta*. 1. June. 1820.

— — *ma'jor*. 1. July. 1820.

— — *me'dia*. 1. July. 1820.

— — *ni'gricans*. 1. July. 1820.

— *so'rvida*. †. July. 1820.

- H. subattenuata*. 1814.
 — *subfasciata*. 1814.
 — *subregulata*. $\frac{1}{2}$. White, green. S. Africa. 1862. Ref. Bot. t. 232.
 — *subrigida*. Reddish-tinted. 1818.
 — *subulata*. 1814.
 — *tessellata*. $\frac{1}{4}$. June. 1823.
 — *Tisleyi*. 1879.
 — *torquata*. 1. August. 1823.
 — *tortulata*. $\frac{1}{2}$. July. 1817.
 — *tortuosata*. 1. July. 1794. Syn., *Aloe rigida*. B. M. t. 1337.
 — *translucens*. $\frac{3}{4}$. June. 1795. Syn., *Aloe arachnoides*, var. *translucens*. B. M. t. 1417.
 — *tu'rigida*. $\frac{1}{2}$. August. 1819.
 — *venosa*. $\frac{1}{4}$. June. 1820.
 — *virescens*. 1. August. 1819.
 — — *nit'ror*. $\frac{1}{2}$. August. 1819.
 — *viscosa*. $1\frac{1}{2}$. June. 1727. Syn., *Aloe viscosa*. B. M. t. 814.
 — *vittata*. $\frac{1}{2}$. White, green. S. Africa. 1862. Ref. Bot. t. 263.

Hawthorn. *Crataegus*.

Hawthorn-butterfly. *Pieris*.

Haylo'ckia. (Named after Mr. Haylock, gardener to Dr. Herbert. Nat. ord., *Amaryllidæ*; Tribe, *Amaryllææ*. Allied to *Sternbergia*.)

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. pusilla. $\frac{1}{2}$. Straw. March. Buenos Ayres. 1829. B. R. t. 1371.

Hazel. *Corylus avellana*.

Heading, or as it is also termed, *Cabbaging* or *Loaving*, is an inaptitude to unfold the central leaves, characterizing the various members of the Cabbage tribe. They have their centre, composed of a larger number of leaves than usual, and these, in some instances, are so complexly combined that weak plants have not sufficient power to force them open. 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 decomposition; 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 to be resorted to rashly, 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 the development of all vegetable life, in effect-

ing 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 diminish or cease; but the majority of them luxuriate most in a climate of which the extreme temperatures do not 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. 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 more or less 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. 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 significant warning to the gardener.

Certain plants flourish in hot-water springs, of which the temperature varies between the scalding heats of from 150° to 180° Fahrenheit, 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 slightly above the freezing point of water, to orchidaceous and other tropical plants, is generally fatal if persisted in; whereas a considerable elevation above a salutary temperature is rarely injurious to plants. But this is not universally the case; for the elegant *Primula marginata* 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*. 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 tight, 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. elegans*, *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. *Callu'na vulga'ris*.

Hebecladus. (From *hebe*, pubescence, and *klados*, a branch; in reference to the hairiness of the young shoots. Nat. ord., *Solanaceæ*; Tribe, *Solanaceæ*.)

Stove shrub. Half-ripened cuttings, in sand, under a bell-glass and in bottom-heat. Rich sandy loam and leaf-mould.

H. ventricosus. 3. Pale yellow. Peru. 1869. B. M. t. 4192.

Hebeclinium. See **Eupatorium.**

Hebenstreitia. (Named after Professor *Hebenstreit*, of Leipsic. Nat. ord., *Selaginaceæ*. 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, fibry loam, and a little peat; *denta* by seed in early spring.

H. albiflora. 1. July. 1822. Syn., *Dichisma ciliatum*.

— *aurea*. 1. May. 1792. Andr. Rep. t. 252. Syn., *H. integrifolia*.

— *capitata*. 1. June. 1823. Syn., *Dichisma clandestinum*.

— *chamaedrifolia*. 2. 1822. Syn., *Dichisma chamaedrifolium*.

— *ciliata*. 1. June. 1815. Syn., *Dichisma ciliatum*.

— *comosa serratifolia*. White with blood-red spot. Gf. 1890, p. 191, fig. 46.

— *cordata*. See *Polycenia cordata*.

— *denta*. 1. July. 1799.

— *erinodes*. 1. May. 1816.

— *fruticoso*. 1½. August. 1816.

— *integrifolia*. See *H. aurea*.

— *scabra*. 1. June. 1824.

— *tenuifolia*. 1. White, orange. 1887.

Hechtea. (In honour of *M. Hecht*. Nat. ord., *Bromeliaceæ*; Tribe, *Pitcairniaceæ*.)

Greenhouse plants. For cultivation, see **DASYLIRION**.

H. argentea. 2. White. Mexico.

— *cordylinoides*. Mexico. 1881. B. M. t. 6554.

— *Ellemeeti*. See *Ruckia*.

— *Ghesbreghtii*. White. Mexico. 1863.

— *pitcairniaefolia*. Scarlet. Tropical America. 1868.

Hedera. (From *hedys*, sweet, and *aroma*, perfume. Nat. ord., *Myrtaceæ*. United with **Darwinia** in the Genera Plantarum.)

Evergreen stove trees, all purple-blossomed, and from Swan River. For culture, see **MYRTUS**.

H. latifolia. May. W. Australia. Syn., *Darwinia citriodora*.

— *pinifolia*. May. Swan River. Syn., *Darwinia pinifolia*.

— *thymoides*. May. Swan River. Syn., *Darwinia thymoides*.

— *tulipiferum*. May. Syn., *Darwinia macrostegia*.

Hedeoma. (From *hedeoma*, the Greek name of mint. Nat. ord., *Labiatae*; Tribe, *Satureineæ*. Allied to *Micromeria*.)

Hardy annuals. Seed in early spring; light, rich garden-soil.

H. pulegioides. ½. Blue. July. N. Amer. Bent. and Tr. t. 200.

— *thymoides*. ½. Red. July. France.

Hedera. The Ivy. (*Hedra* is the Celtic word for cord, alluding to the Ivy's stems. Nat. ord., *Araliaceæ*.)

The common ivy (*H. helix*) 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. aculeata. White. Nepal. 1816. Syn., *Brassaiopsis aculeata*.

— *fragrans*. See *Pentapanax Leschenaultii*.

— *macrophylla*. White. N. Holland. 1831.

STOVE EVERGREEN SHRUBS.

H. arboresca. Jacq. H. Schenb. t. 51. See *Dendropanax arboreum*.

— *capitata*. See *Oreopanax capitatum*.

— *catalpaefolia*. S. America.

— *digitata*. White. March. E. Ind. 1818.

— *emarginata*. Green. 1848.

— *ferruginea*. See *Trevesia*.

— *glomerulata*. 7. Yellow. April. Java. 1847. B. M. t. 4804. Syn., *Brassaiopsis speciosa*.

— *pendula*. Green. Jamaica. 1824.

— *umbraculifera*. White. March. E. Ind. 1818.

— *xalapensis*. See *Oreopanax xalapense*.

HARDY EVERGREEN CLIMBERS.

H. helix. 40. Green. September. Britain. Eng. Bot. ed. 3, t. 633.

— *arborescens*. 8. Green. Britain.

— *canariensis*. 20. Green. October. Canaries.

— *chrysocarpa*. 30. Green. October. India.

— *digitata*. 20. Green. October. Britain. Shrub.

— *foliis argenteis*. 20. Green. October. Britain.

— *foliis aureis*. 20. Green. October. Britain.

— *taurica*. Green. October. Tauria. 1841.

— *vulgaris*. Green. Britain.

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 evenly. 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 sown where you design the edge 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 seeds, 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, etc., 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, Viburnum 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. McL., 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 *Ulex europæus*, 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 (*Rosa rubiginosa*) makes a good hedge. Its seeds may be sown in the autumn, as soon as ripe, or, which is better, in the month of March, having kept them, in the mean time, 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. *Ca'ctus* (*Echinoc'ctus*).

Hedge Hyssop. *Grati'ola*.

Hedge Mustard. *Ery'simum*.

Hedge Nettle. *Sta'chys*.

Hedwigia, of Swartz. (Named after John Hedwig, a botanist. Nat. ord., *Bursereaceæ*; Tribe, *Bursereæ*. Allied to *Bursera*.)

Closely allied to the Orange tribe. *Beaume a suerier*, a substitute for Copaiva, is obtained from *balsami'fera*. Stove evergreen trees. Cuttings of ripe shoots in sandy soil, and in a good heat; sandy loam and a little peat.

H. balsami'fera. 40. White. August. W. Ind. 1820.

Hedychium. (From *hedys*, 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., *Scitamineæ*; Tribe, *Zingiberæ*.)

Stove and greenhouse 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. 4. White. July. E. Ind. 1820. B. M. t. 2969.

— *angustifo'lium*. 5. Scarlet. August. E. Ind. 1815. B. M. t. 2079.

— *auranti'acum*. 5. Orange. July. E. Ind. 1812.

— *car'neum*. 4. Pink. August. E. Ind. 1823. B. M. t. 2637.

— *chrysoleu'cum*. 5. Yellow, white. August. E. Indies. B. M. t. 4516.

— *cocci'neum*. 6. Scarlet. July. E. Ind. 1815. B. C. t. 705.

— *corona'rium*. 5. White. E. Ind. 1791. B. M. t. 708.

— *ela'tum*. 5. Pale red. E. Ind. 1818. B. C. t. 856.

— *elli'pticum*. 5. White. August. E. Ind. 1804. B. C. t. 1881.

— *flave'scens*. 6. Yellow. June. India. 1822. B. C. t. 723.

— *fla'vum*. 3. Yellow. July. Nepaul. 1822. B. M. t. 2378.

— *Gardneria'num*. 7. Yellow. July. E. Ind. 1819. B. R. t. 774.

— *glau'cum*. 4½. White. July. E. Ind. 1822.

— *gra'cile*. 3. White. June. Bengal. 1823.

— *heteroma'llum*. 3. Yellow. July. E. Indies. 1822. B. R. t. 767.

— *longifo'lium*. 6. Red. June. E. Ind. 1819.

— *ma'ximum*. 8. White. August. E. Ind. 1820. B. R. t. 1022.

— *peregr'i'num*. Madagascar. 1883.

— *specio'sum*. 8. Pale yellow. August. E. Ind. 1823.

— *spica'tum*. 3. Yellow. June. India. 1810. B. M. t. 2300.

— *stenope'talum*. 7. White. April. India. 1830. B. C. t. 1902.

— *thyrsifo'rme*. 4. White. July. Nepaul. 1818

H. urophy'llum. 4. Yellow. August. India. 1823. B. C. t. 1785.

— *villo'sum*. 3. Cream. July. E. Ind. 1823.

— *viridifo'rum*. 2. White. Sikkim. 1881.

Hedyotis *campanulifo'ra*. B. M. t. 2840. See *Coccocypselum campanuliflorum*.

Hedysarum. (A plant's name adopted from Theophrastus. Nat. ord., *Leguminosæ*; Tribe, *Hedysaræ*.)

Annuals and biennials in the open border, in spring; perennials by division of the plant in spring; common soil. The dwarfier ones are useful for rock-work and mixed borders.

HARDY ANNUAL.

H. carno'sum. ½. Purple. July. Barbary. 1820.

HARDY BIENNIALS.

H. corona'rium. 4. Scarlet. June. Italy. 1596.

— *pa'llidum*. 3. Pale red. June. N. Africa. 1820.

HARDY HERBACEOUS PERENNIALS.

H. A'lhagi. See *Alhagi maurorum*.

— *alpi'num*. See *H. sibiricum*.

— — *pedicela're*. Purple. June. Siberia.

— *alta'icum*. ½. Purple. July. Siberia. 1818.

— *arge'ntum*. Purple. June. Siberia. 1827.

— *argophy'llum*. Purple. June. Altaia. 1827.

— *brachyse'mum*. See *H. obscurum*, var. *brachyse'mum*.

— *ca'ndidum*. ½. Purple. May. Tauria. 1824.

— — *hu'mile*. ½. Purple. June. Tauria. 1817.

— *carica'sicum*. 1. Purple. July. Caucasus. 1820.

— *consangu'neum*. 1. Purple. July. Siberia. 1820.

— *corda'tum*. Jacq. H. Schœnb. t. 296. See *Halkia cordata*.

— *creta'ceum*. 1. Purple. July. Siberia. 1819.

— *elonga'tum*. Purple. June. Russia. 1823. B. C. t. 1401.

— *frutico'sum*. 4. Purple. June. Siberia. 1782.

— *grandifo'rum*. 1½. Purple. June. Tauria. 1821.

— *gy'rans*. Jacq. Ic. t. 565. See *Desmodium gy'rans*.

— *ibe'ricum*. ½. Purple. July. Iberia. 1818.

— *lasio'crrum*. 1. Purple. Siberia.

— *latifo'lium*. B. R. t. 355. See *Desmodium latifolium*.

— *Macke'nziei*. Rose-purple. Summer. N. America. 1878. B. M. t. 6386.

— *microca'lyx*. Bright purple. N. W. Himalayas. 1888. B. M. t. 6931.

— *multi'gi'num*. Purple. S. Mongolia. Gfl. t. 1122.

— *murica'tum*. See *Adesmia muricata*.

— *obscu'rum*. ½. Purple. July. Alps. 1640. B. M. t. 282.

— — *brachyse'mum*. 1½. Purple. July. Siberia. 1817. Syns., *H. brachyse'mum*, and *H. obscurum*, var. *altaicum*.

— *pi'ctum*. Jacq. Ic. t. 567. See *Urvaria picta*.

— *polymor'phum*. Rose. June. Altaia. 1823.

— *ro'seum*. ½. Pink. August. Caucasus. 1803. B. M. t. 996.

— *rutidoca'rrum*. ½. Purple. August. Siberia. 1826.

— *sibi'ricum*. 2. Purple. June. Siberia. 1798. B. R. t. 808. Syn., *H. alpinum*. B. M. t. 2213.

— *sple'ndens*. ½. Cream. July. Siberia. 1819.

— *tari'ricum*. ½. Pale purple. July. Tauria. 1804.

— *umbella'tum*. Jacq. H. Schœnb. t. 297. A synonym of *Desmodium umbellatum*.

— *uncina'tum*. Jacq. H. Schœnb. t. 298. A synonym of *Desmodium uncinatum*.

— *va'rium*. 1. White. July. South Europe. 1820.

H. venustum. Purple. June. Altaia. 1828.
— *vespertilionis*. Jacq. Ic. t. 566. See *Lowrea vespertilionis*.

Hedysce'pe. (From *hedys*, sweet, and *skepe*, a covering. Nat. ord., *Palmeæ*.)

A stove palm, cultivated in the same manner as *KENTIA*, which see.

H. Canterburyana. 30. Yellowish. Lord Howe's Island. Syn., *Kentia Canterburyana*.

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.

Hee'ria. (After *Oswald Heer*, a Swiss botanist. Nat. ord., *Melastomaceæ*; Tribe, *Osbeckiaceæ*. Syn., *Heterocentron*.)

Stove evergreen shrubs. Cuttings of young shoots in sandy peat, under a bell-glass in spring. Sandy loam and fibry peat.

H. rosea. Pink. June. Mexico. Syns., *Heterocentron mexicanum*, B. M. t. 5166, and *H. roseum*, Ill. Hort. t. 97.

— *subtripliné'ria*. White. June. Mexico. 1824. Syn., *Heteronoma subtriplinervium*.

Hei'mia. (Named after *Dr. Heim*, a German. Nat. ord., *Lythraceæ*.) See *Nesæa*.

H. myrtifolia. See *Nesæa myrtifolia*.
— *salicifolia*, and its var. *grandiflora* (B. R. 1841, t. 40). See *Nesæa salicifolia*.

Hei'nsia. (Named after *M. Heinsius*. Nat. ord., *Rubiaceæ*; Tribe, *Hamelieæ*.)

Stove evergreen shrub. Cuttings of young shoots in sand, under a bell-glass, and in a brisk bottom-heat; fibry peat and sandy loam, with a little dried leaf-mould.

H. jasminiflora, 4. White. March. Sierra Leone. 1824. B. M. t. 4207.

Hei'ntzia. (In honour of *M. Heintz*. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*.)

Stove evergreen. Moist atmosphere. Sandy loam, turfy peat, and decayed leaves in equal quantities, thoroughly mixed but unsifted.

H. tigrina. 5. White, pink. Caraccas. 1852. B. M. t. 4774. Now known as *Alloplectus tigrinus*.

Heiste'ria. Bois Perdrix. (Named after *L. Heister*, a Swedish botanist. Nat. ord., *Oleaceæ*; Tribe, *Oleaceæ*. Allied to *Olaç*.)

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.

H. coccinea. 20. Scarlet. Martinique. 1822.

Hel'cia. (From *helcium*, a horse-collar; in reference to the curious formation of the flowers. Nat. ord., *Orchideæ*; Tribe, *Vandeeæ*.) United to **Trichopilia**.

H. sanguinolenta. Rehb. Xen. ii. t. 131. See *Trichopilia sanguinolenta*.

Hele'nium. (Named after the beautiful *Helena*, cause of the Trojan war. Nat. ord., *Compositæ*; Tribe, *Helenioideæ*.)

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. atropurpureum. 3. Rays scarlet; disk blackish-purple. Texas. 1845. Ill. Hort. t. 106.

— *autumnale*. 3. September. N. Amer. 1729. B. M. t. 2994.

— *pumilum*. Dwarf. Yellow.

— *bolanderi*. 2. Rays bright yellow; disk dark brown. N. America. Rev. Hort. 1891, p. 377, fig. 93.

— *canaliculatum*. 3. August. N. Amer. 1800.

— *hoopesii*. 2½. Bright orange. Summer. N. Amer.

— *mexicanum*. 3. August. Mexico. 1825.

— *nudiflorum*. 3. Yellow. Summer and autumn. S. United States.

— *pubescens*. 3. August. N. Amer. 1776.

— *pumilum*. See *H. autumnale*, var. *pumilum*.

— *quadridentatum*. Yellow. May. Louisiana. 1790. Syn., *Rudbeckia alata*. Jacq. Ic. t. 693.

— *setigerum*. See *Amblyopsis setigera*.

— *tenuiflorum*. 1½. Bright yellow. 1883.

— *undulatum*. 3. September. California. 1830.

Helia'mphora. (From *helios*, the sun, and *amphora*, a pitcher. Nat. ord., *Sarraceniaceæ*.)

Greenhouse herbaceous perennial. Divisions; seed, peat, sphagnum and crocks.

H. nutans. 1-2. White or pale rose. Roraima, British Guiana. 1883. B. M. t. 7091.

Helia'nthemum. Sun Rose. (From *helios*, the sun, and *antheion*, a flower. Nat. ord., *Cistineeæ*.)

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 Verhenas. 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. aegyptiacum. ¾. White. June. Egypt. 1764.

— *ericaulon*. ¾. Yellow. Spain. 1817. Swt. Cist. t. 30.

— *guttatum*. ½. Yellow. June. England.

— *lediflorum*. ½. Yellow. June. England. Swt. Cist. 41.

— *niloticum*. ½. Yellow. June. South Europe. 1817.

— *maius*. 1. Yellow. Europe. 1817.

— *plantagineum*. ¾. Yellow. June. South Europe. 1823.

— *punctatum*. ¾. Yellow. July. South France. 1816. Swt. Cist. t. 61.

— *saliciflorum*. ¾. Yellow. July. South Europe. 1759. Swt. Cist. t. 71.

H. sanguineum. 1. Yellow. July. Spain. 1826.
— *villosum*. 2. Yellow. July. Spain. 1823.

HERBACEOUS PERENNIALS.

H. canadense. 1. Yellow. June. N. Amer. 1799.
— *carolinianum*. 1. Yellow. July. Carolina. 1823. Swt. Cist. t. 99.
— *globulariaefolium*. 2. Yellow. June. Portugal. 1826.
— *rosmarinifolium*. 1. Pale yellow. June. Canada. 1823.
— *tuberosa*. 2. Yellow. June. South Europe. 1752. Swt. Cist. t. 18.

EVERGREEN TRAILERS.

H. acuminatum. 1. Yellow. June. Nice. 1820.
— *alpestre*. 1. Yellow. June. Germany. 1818. Swt. Cist. t. 2.
— *angustifolium*. 2. Yellow. June. 1800.
— *canum*. 2. Yellow. June. South Europe. 1772. Swt. Cist. t. 56.
— *confusum*. 1. White. June. South Europe. Swt. Cist. t. 91.
— *croceum*. 2. Yellow. July. Spain. 1800. Swt. Cist. t. 53.
— *dichotomum*. 1. Yellow. July. Spain. 1826.
— *grandiflorum*. 1. Yellow. June. Italy. 1800. Swt. Cist. t. 69.
— *hispidum*. 2. White. South Europe. 1816.
— *hyssopifolium*. 2. Yellow. May. Italy. A form of *H. vulgare*.
— — *crocatum*. 2. Copper. June. Europe. Swt. Cist. t. 92.
— — *cupreum*. 2. Copper. May. Naples. Swt. Cist. t. 58.
— — *multiflex*. 2. Copper. May. Italy. Swt. Cist. t. 72.
— *italicum*. 1. Yellow. August. Italy. 1799.
— *lagasce*. 2. Yellow. July. Spain. 1826.
— *leptophyllum*. 1. Yellow. Spain. 1818. Swt. Cist. t. 20.
— *lucidum*. 1. Yellow. June. 1826.
— *macranthum*. 1. White, yellow. July. Swt. Cist. t. 103. A form of *H. vulgare*.
— — *multiflex*. 1. White, yellow. June. Europe. Swt. Cist. t. 104.
— *marifolium*. 2. Yellow. May. South Europe.
— *Mille'ri*. 2. Yellow. June. South Europe. Swt. Cist. t. 101.
— *mutabile*. 2. Red. Yellow. July. Spain. 1829.
— *nudicaule*. 2. Yellow. June. Spain. 1826.
— *nummularium*. 2. Yellow. July. Spain. 1752. Swt. Cist. t. 80.
— *obovatum*. 1. Yellow. Spain. 1826.
— *celanditum*. 2. Yellow. July. Germany. 1816.
— *origanifolium*. 2. Yellow. Spain. 1795.
— *ovatum*. 2. Yellow. Geneva. 1818.
— *penicillatum*. 2. Yellow. June. Spain. 1817.
— *pilosum*. 1. White. July. South France. 1831. Swt. Cist. t. 49.
— *polifolium*. 2. White. June. England. Swt. Cist. t. 88.
— *procumbens*. 2. Yellow. South Europe. Swt. Cist. t. 68.
— *pulchellum*. 2. Yellow. May. South Europe. 1820. Swt. Cist. t. 74.
— *pulverulentum*. 2. White. June. France. Swt. Cist. t. 29.
— *rhodanthum*. 2. Red. June. Spain. 1800. Swt. Cist. t. 7.
— *roseum*. 2. Pink. June. South Europe. 1815. Swt. Cist. t. 85.
— — *multiflex*. 2. Pink. June. 1815. Swt. Cist. t. 86.
— *stramineum*. 2. Straw. Europe. Swt. Cist. t. 93.
— — *multiflex*. 2. Striped. Europe.
— *sulphureum*. Pale yellow. Spain. 1795.
— *surrejanum*. 2. Yellow. August. England. A form of *H. vulgare* with deeply cut petals. Swt. Cist. t. 28.

H. tauricum. 1. Yellow. June. Tauria.
— *tomentosum*. 2. Yellow. July. Scotland.
— *venustum*. 2. Red. June. South Europe. 1800.
— — *florople'no*. 2. Red. June. South Europe. 1800.
— *violaceum*. 1. White. Spain. 1826.
— *vulgaris*. 2. Yellow. June. Britain. Swt. Cist. t. 34. See also *H. hyssopifolium*, and *H. macranthum*.
— — *ple'num*. 2. Yellow. June.

EVERGREEN SHRUBS.

H. algarvense. 3. Yellow. July. Portugal. 1800. Swt. Cist. t. 40.
— *appenninum*. 2. White. June. Italy. 1731. Swt. Cist. t. 62.
— *barbatum*. 1. Yellow. June. South Europe. 1820.
— *Barbette'ri*. 1. Yellow. July. Italy. 1825. B. M. t. 2371.
— *canariense*. 1. Yellow. June. Canaries. 1790.
— *canadidum*. 3. Yellow. June. Spain. Swt. Cist. t. 25.
— *canescens*. 2. Red. June. Swt. Cist. t. 51.
— *cheiranthoides*. 3. Yellow. June. Portugal. 1818. Swt. Cist. t. 107.
— *ciliatum*. 1. Red. June. South Europe.
— *cinereum*. 1. Yellow. July. Spain.
— *confertum*. 1. Yellow. August. Teneriffe.
— *crassifolium*. 1. Yellow. June. Barbary. 1818.
— *diversifolium*. 2. Flame. June. Europe.
— *ellipticum*. 3. Yellow. July. Egypt. Swt. Cist. t. 108.
— *ericoides*. 1. Yellow. June. South Europe.
— *farinosum*. White. June. Spain.
— *formosum*. 4. Yellow. Portugal. 1780. Swt. Cist. t. 50.
— *glaucum*. 2. Yellow. July. Spain. 1815. Swt. Cist. t. 111.
— *glomeratum*. 1. Yellow. June. Mexico. 1823. Swt. Cist. t. 110.
— *glutinatum*. 2. Yellow. July. Swt. Cist. t. 83.
— *halimifolium*. 4. Yellow. July. Spain. 1856. Swt. Cist. t. 4.
— *hirtum*. 1. Yellow. June. Spain. 1759. Swt. Cist. t. 109.
— *involutum*. 3. Yellow. Spain. 1626.
— *juniperinum*. 1. Yellow. July. South Europe. 1800.
— *kahiricum*. 1. Yellow. June. Egypt. 1820.
— *la've*. 1. Yellow. June. Spain. 1826.
— *lasianthum*. 3. Yellow. June. Spain. 1826.
— *lavandulæfolium*. 1. Yellow. June. South France. 1817.
— *libanotis*. 1. Yellow. South Europe. 1752.
— *lignosum*. 2. Yellow. June. South Europe. 1806. Swt. Cist. t. 46.
— *lineare*. 1. White. June. South Europe. 1818. Swt. Cist. t. 48.
— *Lippii*. 1. Yellow. Egypt. 1820.
— *lunulatum*. 2. Yellow. July. Spain. 1826.
— *marjoranifolium*. 2. Yellow, white. June.
— *microphyllum*. 2. Yellow. June. Europe. 1800. Swt. Cist. t. 96.
— *molle*. 1. Yellow. July. Spain. 1817.
— *mutabile roseum*. 2. Red. July. South Europe. Swt. Cist. t. 106.
— *ocymoides*. 3. Yellow. June. Spain. 1800. Swt. Cist. t. 13.
— *paniculatum*. 2. Yellow. July. Spain. 1826.
— *racemosum*. 1. White. July. South Europe. 1820. Swt. Cist. t. 82.
— *rugosum*. 3. Yellow. June. Portugal. 1800. Swt. Cist. t. 65.

- H. scabrosum*. 3. Yellow. Portugal. 1775.
 — *scoparium*. Yellow. September. California. 1848.
 — *squamatum*. 1. Yellow. June. Spain. 1815.
 — *strictum*. 1. White. June. Spain. 1820.
 — *thymifolium*. 1. Yellow. July. Spain. 1658. Swt. Cist. t. 102.
 — *umbellatum*. 2. White. July. South Europe. 1731. Swt. Cist. t. 5.
 — *erectum*. White. June. South Europe.
 — *subdecumbens*. White. July. South Europe.
 — *versicolor*. 1. Red, white. July. South Europe. 1800. Swt. Cist. t. 26.
 — *virgatum*. 1. White. Barbary. 1818. Swt. Cist. t. 79.

Helianthus. 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*; Tribe, *Helianthoideæ*.)

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. annuus*. 6. July. S. Amer. 1506.
 — *Damnanus* and var. *sulphureus*. Garden hybrids between *H. annuus* and *H. argyrophyllus*. 1890.
 — *indicus*. 3. July. Egypt. 1785.
 — *ovatus*. 4. Mexico. 1829.
 — *petiolaris*. 3. September. Arkansas. 1826.
 — *speciosus*. B. M. t. 3295. See *Tithonia*.
 — *tuberosus*. B. R. t. 1519. See *Tithonia tubiflora*.

PERENNIALS.

- H. angustifolius*. 3. September. N. Amer. 1799. B. M. t. 2051.
 — *altissimus*. See *H. giganteus*.
 — *atro-rubens*. B. M. t. 2668 and B. R. t. 508. See *H. rigidus*.
 — *cornifolius*. 3. August. Mexico. 1825.
 — *decapetalus*. 6. September. N. Amer. 1759.
 — *diffusus*. See *H. rigidus*.
 — *divaricatus*. 6. N. Amer. 1759.
 — *doronicoides*. 4. N. Amer. 1759. Syn. *H. pubescens* of B. M. t. 2778.
 — *excelsus*. 8. Mexico. 1820.
 — *giganteus*. 10. N. Amer. 1714. Syn., *H. altissimus*.
 — *Hookerianus*. See *Wyethia angustifolia*.
 — *latifolius*. 3. August. N. Amer. 1810.
 — *lenticularis*. 1827. B. M. t. 1225.
 — *linearis*. B. R. t. 523. See *Viguiera*.
 — *longifolius*. 6. Georgia. 1812.
 — *macrophyllus*. 6. N. Amer. 1800.
 — *Maximilianii*. 10-12. October. N. Amer.
 — *missouriensis*. See *H. rigidus*.
 — *moellii*. 4. August. N. Amer. 1805.
 — *cordatus*. 3-5. Orange yellow. Western Georgia and Texas. G. and F. 1889, p. 136, fig. 100.
 — *multiflorus*. 6. N. Amer. 1597. B. M. t. 227.
 — *plenus*. 6. N. Amer. 1797.
 — *orgyalis*. 7. Yellow. United States. 1879.
 — *parviflorus*. 3. July. Mexico. 1826.
 — *patens*. See *H. petiolaris*.
 — *pauciflorus*. 2. August. Louisiana. 1824.
 — *petiolaris*. 3. August. N. Amer. 1829. Syn., *H. patens*.
 — *prostratus*. See *H. trachelifolius*.

- H. pubescens* of B. M. t. 2778 is *H. doronicoides*, of B. R. t. 524 is *H. tomentosus*.
 — *rigidus*. 3. Golden-yellow. August. N. Amer. Syn., *H. atrorubens* of B. M. t. 2668 and B. R. t. 508, *H. diffusus*, B. M. t. 2020, and *Harpagium rigidum*. There is also a garden variety of 1888.
 — *semipleus*.
 — *strumosus*. 8. N. Amer. 1710.
 — *trachelifolius*. 6. September. N. Amer. 1825. Syn., *H. prostratus*.
 — *tribobatus*. 3. September. Mexico. 1824.
 — *tuberosus*. 8. September. Brazil. 1667. Jerusalem Artichoke.
 — *villosus*. 3. August. N. Amer. 1820. See JERUSALEM ARTICHOKE and SUNFLOWER.

Helichrysum. (From *helios*, the sun, and *chrysos*, gold; referring to the beauty of the flowers. Nat. ord., *Compositæ*; Tribe, *Inuloideæ*. Allied to *Helipterum*.)

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. *Stæchas* is the hardiest shrubby kind, flourishing in a sheltered place in dry, calcareous soil. *Angustifolium*, *congestum*, and *fruticosum* are the next in point of hardness, and probably would do on a South wall.

HARDY ANNUALS.

- H. bracteatum*. 4. Pale yellow. September. N. Holland. 1799.
 — *aurum*. Golden yellow.
 — *violaceum*. 3. Yellow. July. Van Diemen's Land. 1835. B. R. t. 1814.
 — *compositum*. Various colours.
 — *involucro-albidum*. 3. Yellow. July. 1833.
 — *robustum*. White, yellow. July. Swan River. 1839.
 — *spectabile*. B. C. t. 59. See *Helipterum humile*.

HARDY HERBACEOUS PERENNIALS.

- H. arenarium*. 1. Yellow. August. Europe. 1799.
 — *bracteatum macranthum*. Blush. Swan River. 1837.
 — *nitens*. 4. White, yellow. July. Swan River. 1837.
 — *candidissimum*. 2. Pale yellow. June. Caspian. 1823.

HARDY EVERGREEN SHRUBS.

- H. angustifolium*. 2. Yellow. August. Naples. Half-hardy.
 — *conicum*. 2. Yellow. July. South Europe. 1824.
 — *rupestre*. Yellow. June. Naples. 1830.
 — *Stæchas*. 2. Yellow. August. Europe. 1629.

HALF-HARDY.

- H. frigidum*. 1. White. May. Corsica. 1879. B. M. t. 6515.
 — *graveolens*. Yellow. Greece. 1877.
 — *plicatum*. Yellow. Greece, Asia Minor. 1877. Gf. t. 889.

GREENHOUSE HERBACEOUS PERENNIALS.

- H. apiculatum*. 1. Yellow. Van Diemen's Land. 1804. B. R. t. 240.
 — *argenteum*. 2. White. June. Cape of Good Hope. 1800.
 — *crispum*. 6. Pink. Cape of Good Hope. 1809.
 — *cythnicum*. 1. Yellow. June. Cape of Good Hope. 1780.

- H. cymosum*. 1½. Yellow. June. Africa. 1731.
 — *dealbatum*. 1½. White. Van Diemen's Land. 1812.
 — *odoratissimum*. 2. Yellow. June. Cape of Good Hope. 1691.
 — *rutilans*. 1. Red, yellow. June. Cape of Good Hope. 1731.
 — *scorpioides*. Yellow. N. Holland. 1838.

GREENHOUSE EVERGREEN SHRUBS.

- H. acuminatum*. 3. White. July. Tasmania. 1823.
 — *affine*. 1½. Pale yellow. August. Cape of Good Hope.
 — *arboresum*. 6. White. May. Cape of Good Hope. 1770.
 — *cephalotes*. 4. Pink. June. Cape of Good Hope. 1789.
 — *congestum*. 3. Purple. June. Cape of Good Hope. 1791.
 — *crassifolium*. 1. Yellow. August. Cape of Good Hope. 1774.
 — *dasyanthum*. 4. Yellow. July. Cape of Good Hope. 1812.
 — *devium*. 3. White, black. Madeira.
 — *diosmæfolium*. 1½. White. June. Cape of Good Hope. 1820.
 — *divaricatum*. 3. White. July. Cape of Good Hope. 1820.
 — *ericoides*. 1½. Pink. April. Cape of Good Hope. 1774. Syn., *Aphelaxis ericoides*.
 — *fasciculata*. 2. Purple, yellow. March. Cape of Good Hope. 1799. Syn., *Aphelaxis fasciculata*.
 — *alba*. 2. White. July. Cape of Good Hope. 1799.
 — *rubra*. 2. Red. July. Cape of Good Hope. 1799.
 — *versicolor*. 2. Variegated. July. Cape of Good Hope. 1799.
 — *fruticans*. 3. Yellow. July. Cape of Good Hope. 1779.
 — *fulgidum*. 2. Yellow. July. Cape of Good Hope. 1774.
 — *grandiflorum*. 3. White. July. Cape of Good Hope. 1731.
 — *helianthemifolium*. 1. White. July. Cape of Good Hope. 1774.
 — *lasiocaulon*. 3. White. July. Cape of Good Hope. 1823.
 — *orientale*. 1½. Yellow. June. Africa. 1629.
 — *paniculatum*. 2. White. July. Cape of Good Hope. 1800.
 — *patulum*. 3. White. May. Cape of Good Hope. 1771.
 — *rigidum*. See *H. striatum*.
 — *splendens*. B. M. t. 1773. See *H. squamosum*.
 — *squamosum*. South Africa. Syns., *Elichrysum splendens*, B. M. t. 1773, and *Xeranthemum herbageum*, Andr. Rep. t. 487.
 — *striatum*. 1½. White. July. South Africa. 1801. Syns., *H. rigidum* and *Xeranthemum rigidum*, Andr. Rep. t. 387.
 — *vestitum*. 2. White. August. Cape of Good Hope. 1774.

STOVE PERENNIAL.

- H. Mannii*. 2. White, yellow. September. Cameroon Mountains. 1864.

Helico'dea zebri'na. A synonym of **Billbergia zebrina**.

Helicod'ceros. (From *helix*, spiral, *dis*, twice, and *keras*, a horn; because the basal divisions of the leaf twist and stand erect, and thus somewhat resemble horns. Nat. ord., *Araceæ*; Tribe, *Arineæ*.)

Hardy tuberous perennial herb; it requires the protection of a frame in severe winters. For cultivation, see *ARUM*, to which it is allied.
H. crinitus. 1-1½. Dark purple-brown. April. Corsica. 1777. Syn., *Arum crinitum*. B. R. t. 831.

Helico'nia. (From *helicon*, a hill, consecrated to the Muses; in reference to the affinity of this genus to *Musa*. Nat. ord., *Scitamineæ*; Tribe, *Musæ*.)

The fleshy roots of *H. psittacorum* 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. angustifolia*. Red, white. January. Brazil. B. M. t. 4475.
 — *aurantiaca*. 1½. Cream, orange. Mexico. 1862.
 — *aureo-striata*. Leaves deep green, with yellow veins. Solomon Islands. 1831. Ill. Hort. t. 464.
 — *bicolor*. 3. White, crimson. Brazil. 1823. Maund Bot. iii. t. 101.
 — *Bihai*. 12. Red. July. W. Indies. 1736. B. R. t. 374.
 — *brazilienis*. 8. Scarlet. August. Brazil. 1820. Paxt. Mag. iii. p. 193.
 — *brevispatha*. 3. White, scarlet. S. America. 1864.
 — *choconiana*. 4. Spathes scarlet; flowers yellow. Guatemala. Gard. and Tor. 1883, i. p. 161, fig. 31.
 — *dealbata*. 3.
 — *densiflora*. 2. Orange-yellow; bracts red. Guiana.
 — *glauca*. 3. Green; bracts red. S. America.
 — *hirsuta*. 5. Orange. S. Amer. 1800.
 — *humilis*. Green, scarlet. Guiana. 1867. Jacq. H. Schœnb. t. 48-49.
 — *indica*. 4. Madagascar. 1818.
 — *metallica*. Crimson; leaves metallic purple beneath. New Grenada. 1862.
 — *nitens*. Mexico.
 — *psittacorum*. 4. Orange. August. W. Ind. 1797. Andr. Rep. t. 124.
 — *pulverulenta*. 2. Greenish-scarlet. July. S. Amer. 1830. B. R. t. 1643.
 — *Swartziana*. 4. Yellow. July. Jamaica. 1800.
 — *triumphans*. Leaves dark green, with blackish veins. Sumatra? 1833. Ill. Hort. t. 448.
 — *vinosa*. Columbia. 1871.
 — *viridis*. Polynesia.

Helicophyllum. (From *helix*, *helikos*, spiral, and *phullon*, a leaf. Nat. ord., *Araceæ*.)

Hardy perennial. Same treatment as the hardy *Arums*.

- H. Alberti*. Spathes pale green outside, brown-purple within. Central Asia. 1887. B. M. t. 6969.

Helic'teres. (From *helikter*, a twisted bracelet; alluding to the shape of the fruits. Nat. ord., *Sterculiaceæ*; Tribe, *Helictereæ*.)

Stove trees or shrubs. Cuttings taken off at joint in sand under a bell-glass. Fibry loam and peat.

- H. iso'ra*. 6. Scarlet. September. E. Indies. B. M. t. 2061.
 — *jamaicænsis*. White. Autumn. Jamaica. 1757. Jacq. Vind. t. 143.
 — *verbascifolia*. Brownish-red. Brazil. B. R. t. 908.

Helinus. (From *helinos*, a branch ; on account of its spreading branches. Nat. ord., *Rhamnaceæ* ; Tribe, *Gouaniaceæ*.)

A climbing greenhouse shrub, suitable for training up rafters, etc. Seeds ; cuttings of the half-ripened shoots in sand, in a moderate heat and protected from the sun. Rich sandy loam ; requires plenty of pot room.

H. ova'tus. Greenish. Natal. 1862. Ref. Bot. t. 146. Syn., *Rhamnus mystacinus*.

Heliocarpus. (From *helios*, the sun, and *karpus*, a fruit ; in reference to the fringes on the cells, or carpels, of the fruit. Nat. ord., *Tiliaceæ* ; Tribe, *Grewiaceæ*. Allied to *Grewia* and *Triumfetta*.)

Stove evergreen shrub. Cuttings of half-ripened shoots in summer, in sand, under a bell-glass, and in heat ; sandy loam and fibry peat.

H. americana. 16. Purple. Vera Cruz. 1733. Jacq. H. Schœnh. t. 453.

Helio'neris. See *Gymnolomia*.

Helio'phila. (From *helios*, the sun, and *phileo*, to love ; referring to the sunny aspect where they delight to grow. Nat. ord., *Cruciferae* ; Tribe, *Sisymbriaceæ*.)

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. callosa. 1. Yellow. July. 1802. Syn., *H. cleomoides*.
— *linearifolia*. 1. Blue. June. 1819.
— *platysliqua*. See *H. succulenta*.
— *sca'ndens*. White, tinged rose. Natal. 1887. A climber
— *scopa'ria*. 1. Red. June. 1802.
— *succule'nta*. 1. Purple. July. 1774. Syn., *H. platysliqua*.

HARDY ANNUALS.

H. amplexica'lis. 2. White, purple. July. 1774.
— *arabio'ides*. B. M. t. 496. See *H. pilosa*, var. *incisa*.
— *coronopifolia*. 1½. Violet. July. 1778.
— *crithmifolia*. 1. Violet. July. 1816.
— *diffusa*. 2. White. June. 1818.
— *digitata*. See *H. pilosa*, var. *digitata*.
— *diss'cta*. 1. Blue. June. 1792.
— *pinna'ta*. 1. White. June. 1792.
— *foenicula'cea*. 1½. Purple. June. 1774.
— *integrifolia*. Jacq. Ic. t. 506. See *H. pilosa*, var. *integrifolia*.
— *pectinata*. 1. White. June. 1819.
— *pe'ndula*. 1½. Yellow, white. July. 1792. Syn., *H. pennata*.
— *pilo'sa*. 1. Blue. July. 1768.
— *digitata*. 1. Brownish. June. 1819. Syn., *H. digitata*.
— *inci'sa*. 2. Blue. June. 1768. Syn., *H. arabioides*.
— *integrifolia*. 2. Blue. June. 1823. Syns., *H. integrifolia*, Jacq. Ic. t. 506, and *H. stricta*, B. M. t. 2526.
— *stri'cta*. See *H. pilosa*, var. *integrifolia*.
— *tri'pida*. 2. Purple. June. 1819.

Helio'psis. (From *helios*, the sun, and *opsis*, like ; the appearance of the flowers. Nat. ord., *Compositæ* ; Tribe, *Helianthoideæ*. Allied to *Zinnia*.)

Hardy herbaceous perennials, with yellow flowers. By seed and division ; common soil ; treatment similar to that for *Helianthus*.

H. canescens. 2. August. Peru. 1818. Syns., *H. rugosa* and *Helianthus buphthalmoides*.
— *la'vis*. 6. August. N. Amer. 1714. B. M. t. 3372.
— *grandifl'ora*. 6. Orange. August. N. Amer.
— *sca'bra*. 5. August. N. Amer. 1824. Syn., *H. canescens* of B. R. t. 592.

Heliotro'pium. Turnsole. (From *helios*, the sun, and *trope*, twining ; in reference to the curled or twining of the flower-branch. Nat. ord., *Boraginææ* ; Tribe, *Heliotropiææ*.)

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. breviflorum. 1. White. Nepal. 1824. Biennial.
— *coromandelinum*. 1. White. E. Ind. 1812.
— *parviflorum*. 1. White. August. W. Ind. 1732. Biennial.

HARDY ANNUALS.

H. ægyptiacum. See *H. pallens*.
— *cap'e'nse*. 1. White. Cape of Good Hope. 1824.
— *commuta'tum*. 1. White. August. South Europe. 1800.
— *convolvulaceum*. 2. White. New Mexico. 1867. Sweet-scented, night-blooming. B. M. t. 5615. Syn., *Euloca convolvulacea*.
— *coromandelinum oblongiflorum*. 2. White. July. South Europe. 1824.
— *obova'tum*. 1. Brown. May. Nepal. 1825.
— *europa'num*. 2. White. July. South Europe. 1825.
— *pallens*. White. June. Egypt. 1642. Syn., *H. ægyptiacum*.

GREENHOUSE AND STOVE EVERGREEN SHRUBS.

H. corymbosum. 4. Lilac. July. Peru. 1800.
— *fruticosum*. 1. White. June. W. Ind. 1752. Stove. Syn., *H. humile*.
— *incanum*. 2. White. June. Peru. 1844.
— *glabrum*. G. C. 1884, xxii. p. 809.
— *liniflorum*. 1½. White. July. Cape of Good Hope. 1815.
— *maroc'cum*. 1. White. June. Morocco. 1823.
— *undula'tum*. 1. Lilac, brown. July. N. Africa. 1820.

GREENHOUSE DECIDUOUS SHRUBS.

H. peruvia'num. 2. Lilac. July. Peru. 1757.
— *Voltaireanum*. Violet. Garden hybrid.

Heli'pterum. (From *helios*, the sun, and *pteron*, a wing. Nat. ord., *Compositæ*.)

Half-hardy annual, and perennial, with everlasting flowers. Annuals in open ground, or in frames in March ; other seeds and cuttings ; sandy soil.

- H. canescens*. 2. Purple. June. S. Africa. 1794. Syns., *Astelma canescens*, *Helichrysum canescens*, and *Xeranthemum canescens*. B. M. t. 420.
- *citri'num*. See *H. Cotula*.
- *corymbiflorum*. 3. White. S. Australia. Gf. t. 430.
- *Cotula*. Yellow, white. Swan River. 1866. Syn., *H. citrina*.
- *eximium*. Yellow, rosy. July. 1793. Syns., *Astelma eximium* and *Gnaphalium eximium*. B. M. t. 300.
- *fragrans*. 2. Pink. July. S. Africa. 1803. Syn., *Astelma fragrans*.
- *Humboldtianum*. Yellow. W. Australia. 1863.
- *humilis*. 2. Pink. May. Cape of Good Hope. 1810. Syn., *Aphelexis humilis*.
- *macrantha*. 2. Purple. N. Holland. 1840.
- *purpurea*. 2. Purple. N. Holland. 1840. Syns., *Astelma macrantha*, var. *purpurea*, and *A. spectabilis*.
- *rosea*. 2. Rose. Gardens. 1845. Syn., *Aphelexis macrantha*, var. *rosea*.
- *gnaphalioides*. 1. Red, yellow. S. Africa. Syn., *Gnaphalium modestum*. B. M. t. 2710.
- *imbricatum*. 2. White. August. 1820. Syn., *Astelma imbricatum*.
- *phlomoïdes*. 1. Pale purple. July. 1802. Syn., *Astelma milleflorum*.
- *roseum*. 2. Pink. June. S. W. Australia. 1853. Syn., *Acrocinium roseum*. B. M. t. 4801.
- *grandiflorum*. 1879.
- *Sandfordia*. B. M. t. 5350. See *H. Humboldtianum*.
- *sesamoïdes*. 2. Purple, white. May. Cape of Good Hope. 1799. Syn., *Aphelexis sesamoïdes*.
- *speciosissimum*. 8. White. August. S. Africa. 1691. Andr. Rep. t. 51. Syns., *Astelma speciosissimum* and *A. stæhelina*.
- *variegatum*. 3. White. September. S. Africa. 1801. Syns., *Astelma spirale* and *A. variegatum*.
- *virgatum*. Yellow. S. Africa. Syn., *Pteronia pauciflora*, B. M. t. 1697.
- Helle'borus.** Hellebore. (From *helleim*, to kill, and *bora*, food; referring to its poisonous quality. Nat. ord., *Ranunculaceæ*; Tribe, *Helleboreæ*. Allied to *Eranthis*.)
- Hardy herbaceous perennials; by seeds, and by division of the plant in spring; common soil, in a shady place.
- H. abchasicus*. See *H. caucasicus*, var. *abchasicus*.
- *atro-rubens*. 1. Purple. March. Hungary. 1820. B. M. t. 4531.
- *caucasicus*. 1. Green. Caucasus. 1853.
- *abchasicus*. 1. Green or purple. January. Caucasus. Gf. 496. Syn., *H. abchasicus*.
- *guttatus*. Gf. t. 400.
- *pallidus*. Gf. t. 400.
- *punctata*. Rose, dotted with darker. 1890. Gf. t. 623.
- *colchicus*. 1. Bright purple. January. Asia Minor. Syn., *H. caucasicus*, of Gf. t. 293.
- *cupreus*. Copper. January. 1838.
- *dumetorum*. 1. Green. March. 1817.
- *foetidus*. 1. Green. March. England. Bear's Foot. Eng. Bot. ed. 3, t. 45.
- *graveolens*. Yellow. February. 1838.
- *guttatus*. A variety of *H. caucasicus*.
- *viduus*. 1. Purple. March. Corsica. 1710. B. M. t. 72.
- *integrifolius*. 1. Purple. February. Corsica. 1710.

- H. niger*. 1. Pink. Austria. 1596. Christmas rose. There are varieties—*altifolius*, *major* and *maximus*.
- *angustifolius*. 1. Pink. March. Austria. 1596.
- *odoratus*. 1. Green. March. Hungary. 1817. B. R. t. 1643.
- *olympicus*. 2. Green. February. Greece. 1840.
- *orientalis*. 1. Dark. February. Greece. 1839. There are several hybrids from this—*elegans*, *iridescens* and *punctatus*.
- *purpureascens*. 1. Purple, green. March. Hungary. 1817.
- *vernalis*. 3. White. March. Austria. 1596.
- *viridis*. 1. Bright green. Spring. Europe. Eng. Bot. ed. 3, t. 44.

Helle'nia. (Named after *C. N. Hellenius*, professor at Abo. Nat. ord., *Scitamineæ*; Tribe, *Zingibereæ*. Now united to *Alpinia*.)

Stove herbaceous perennials, with white flowers; division in spring; rich, sandy loam and a little peat. Treatment similar to *HEDYCHUM*.

- H. abnormis*. 10. June. China. 1824.
- *cærulea*. 4. N. Holland. 1820.
- *chinensis*. 3. China. 1825.

Helmet Flower. *Aconitum*, *Coryanthes*, and *Scutellaria*.

Helmho'tzia. (Dedicated to *Hermann Helmholtz*, a celebrated Professor of Ophthalmology. Nat. ord., *Phylodreæ*.)

Stove herbaceous perennial of tufted habit. Seeds, divisions. Sandy loam and peat, well drained; it requires plenty of water.

- H. glaberrima*. 3. White. Polynesia. 1873. Syn., *Phylodrum glaberrimum*. B. M. t. 6056.

Hel'mia. (In honour of *Dr. C. Helm*, Nat. ord., *Dioscoreaceæ*.)

Stove shrubby climber, with tuberous roots. For cultivation, see *DIOSCOREÆ*, to which it is united in the Genera Plantarum.

- H. racemosa*. Yellow, purple. Central America.

Helminthosta'chys. (From *helminthion*, a little worm, and *stachys*, a spike. Nat. ord., *Filices*—*Polypodiaceæ*.)

Stove fern. See *FERNES*.

- H. zeylanica*. Ceylon. 1861.

Helo'nias. (A diminutive of *helos*, a marsh; small marsh-plants. Nat. ord., *Liliaceæ*; Tribe, *Narthecieæ*. Allied to *Tofieldia*.)

Hardy herbaceous perennials, from North America. By seeds, and dividing the roots in spring; sandy, fibry loam and peat, and requiring a moist, somewhat shaded situation.

- H. angustifolia*. 1. White. May. 1823.
- *asphodelioides*. B. M. t. 748. See *Xerophyllum*.
- *bracteata*. B. M. t. 1703. See *Zygadenus bracteatus*.
- *bulbata*. B. M. t. 747. See *H. latifolia*.
- *erythrosperma*. 3. White. June. 1770. Syn., *H. laeta*.
- *glaberrima*. B. M. t. 1880. See *Zygadenus commutatus*.
- *graminea*. B. M. t. 1599. See *Xerophyllum gramineum*.

- H. læta*. B. M. t. 803 and 1540. See *Herythosperma*.
 — *latifolia*. 14. Purplish. Summer. 1758. Syn., *H. bullata*.
 — *lu'tea*. B. M. t. 1062, and *pu'mila*. Jacq. Ic. t. 453. Now referred to *Chamaetrium*.
 — *virginica*. B. M. t. 985. See *Zygadenus virginicus*.
 — *virides*. B. M. t. 1096. See *Veratrum viride*.

Helonio'psis. (From *Helonias*, and *opsis*, like. Nat. ord., *Liliaceæ*; Tribe, *Narthecieæ*.)

Hardy perennial. Treatment similar to *HE-LONIAS*.

- H. japonica*. Rose-colour. Japan. Syn., *H. umbellata*. G. C. 1887, i. p. 711.

Helwi'ngia. (After G. A. Helwing, a Prussian botanist. Nat. ord., *Araliaceæ*.)

A dwarf hardy shrub, more curious than beautiful.

- H. ruscifolia*. Flowers greenish, produced upon the midrib of the leaves. Japan.

Hemeroca'llis. Day Lily. (From *hemero*, a day, and *kallos*, beauty. Nat. ord., *Liliaceæ*; Tribe, *Hemerocallieæ*.)

Hardy herbaceous perennials. Division in spring; common garden-soil.

- H. alba*. Andr. Rep. t. 194. See *Funkia subcordata*.
 — *cærulea*. Andr. Rep. t. 6. See *Funkia ovata*.
 — *cordata*. See *Funkia subcordata*.
 — *Dumortieri*. 1-1½. Orange-yellow. Japan. 1833. Ref. Bot. t. 213. Syns., *H. rutilans* and *Sieboldii*.
 — *disticha*. Swt. Fl. Gard. t. 28. A synonym of *H. fulva*.
 — *fulva*. 2. Yellow. Jmne. Siberia. 1596. B. M. t. 19.
 — *fulva*. 4. Tawny. July. Levant. 1596. B. M. t. 64.
 — *floré pléno*. 4. Copper. July.
 — *variegata*. 4. Copper. July.
 — *gracilis*. Japan. 1871.
 — *graminea*. Andr. Rep. t. 244. See *H. minor*.
 — *japonica*. B. M. t. 1433. See *Funkia subcordata*.
 — *Middendorffii*. 2. Golden-yellow. Summer. N.E. Asia.
 — *minor*. 3. Yellow, tinged with green. Summer N. China and Japan. 1759. Syn., *H. graminea*.
 — *pecta*. 1868.
 — *plantaginea*. See *Funkia subcordata*.
 — *rutilans*. See *H. Dumortieri*.
 — *Sieboldii*. See *H. Dumortieri*.
 — *speciosa*. Yellow. July.
 — *Thunbergii*. 2. Orange. August. Japan.

Hemia'ndra. (From *hemi*, half, and *aner*, a man; in reference to the absence of the two upper stamens, being half the normal number. Nat. ord., *Labiatae*; Tribe, *Prostanthereæ*. Allied to *Prostanthera*.)

Greenhouse evergreen shrubs, 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. brevifolia*. See *H. pungens*, var. *diffusa*.
 — *emarginata*. See *H. pungens*, var. *hispida*.
 — *hirta*. See *H. pungens*, var. *diffusa*.
 — *pungens*. White, purple. May. Fl. Ser. t. 985.

- H. pungens diffusa*. May. King George's Sound. 1840. Syns., *H. brevifolia* and *hirta*.
 — *hispida*. May. W. Australia. 1887. Syns., *H. emarginata* and *rupestris*.
 — *rupestris*. See *H. pungens*, var. *hispida*.

Hemichæ'na. (From *hemi*, half, and *chairo*, to gape. Nat. ord., *Scrophulariaceæ*; Tribe, *Cheloneæ*. Allied to *Leucocarpus*.)

A handsome stove shrub, with mimulus-like flowers. Ripened cuttings in sandy loam, under a hand-glass and in bottom-heat. Loam and peat or leaf-mould.

- H. frutescens*. 5. Yellow. Central America. 1873. B. M. t. 6164.

Hemici'dia. (From *hemi*, half, and *kleio*, to shut; referring to the appearance of the flowers. Nat. ord., *Proteaceæ*; Tribe, *Banksieæ*.) See *Dryandra*.

- H. Baxteri*. B. M. t. 1455. See *Dryandra fallata*.

Hemidi'ctyon. (From *hemi*, half, and *diktyon*, a net. Nat. ord., *Filices*.) Now referred to *Asplenium*.

A stove fern. Division in spring; peat and loam.

- H. marginatum*. Brown. S. Amer.

Hemige'nia. (From *hemi*, half, and *gena*, to beget; referring to the absence of the two upper stamens, being half the normal number. Nat. ord., *Labiatae*; Tribe, *Prostanthereæ*. Allied to *Hemia'ndra*.)

Greenhouse evergreen shrub. Cuttings of short young shoots in sand, under a bell-glass; peat and loam. Requires good drainage.

- H. incana*. 2-3. Pink or purple. Swan River. Syn., *Atelandra incana*.
 — *purpurea*. Purple. April. N. S. Wales. 1824.

Hemigo'nium. (From *hemi*, half, and *gonu*, angle. Nat. ord., *Filices*.)

Herbaceous stove fern. Divisions in spring; peat and loam.

- H. caducum*. Brown, yellow. May. W. Ind.

Hemigra'phis. (From *hemi*, half, and *grapho*, to write. Nat. ord., *Acanthaceæ*; Tribe, *Ruellieæ*.)

Stove perennials. For culture, see *RUELLIA*.

- H. australis*. 1. Bright blue, throat reddish. Australia. Syn., *Ruellia australis*.
 — *colorata*. White. Leaves bright purple beneath. India. 1885.
 — *elegans*. 2. Blue, purple. August. E. Indies. 1834. Syn., *Ruellia elegans*. B. M. t. 3389.

Hemime'ris. (From *hemi*, half, and *meris*, a part; referring to the appearance of the flowers as if in two halves. Nat. ord., *Scrophulariaceæ*. Allied to *Alonsoa*.)

Stove herbaceous perennial. Cuttings of young shoots in sandy soil, and in bottom-heat; sandy loam and a little peat.

- H. coccinea*. A synonym of *Alonsoa incisæfolia*.
 — *urticifolia*. A synonym of *Alonsoa incisæfolia*.

Hemioni'tis. (From *hemionos*, a mule; supposed to be barren. Nat. ord., *Filices*.)

Stove herbaceous perennials. Dividing the roots; sandy loam and peat.

- *cordata*. Brown, yellow. July. E. Ind.
- *palma'ta*. $\frac{3}{4}$. July. W. Ind. 1793.
- *peda'ta*. $\frac{3}{4}$. Mexico. 1822.
- *pinna'ta*. Brown, yellow. July. E. Ind.

Hemio'rchis. (From *hemi*, half, and *orchis*; the inflorescence resembles that of some orchids. Nat. ord., *Scitamineæ*; Tribe, *Zingibereæ*.)

Stove or greenhouse herbaceous perennial. Seed. Sandy loam, peat.

- *burma'nica*. Purple, yellow. Himalayas and Burmah. B. M. t. 7120.

Hemiphra'gma. (From *hemi*, half, and *phragma*, a partition; in allusion to the partition in the capsule. Nat. ord., *Scrophulariaceæ*.)

A prostrate, half-hardy herb.

- *heterophyllum*. Pink. Summer. Himalayas.

Hemipi'lia. (From *hemi*, half, and *pilos*, a cap. Nat. ord., *Orchideæ*.)

Stove terrestrial orchid. See ORCHIDS.

- *calophylla*. White; lip rich purple. Tensas. 1887. B. M. t. 6920.

Hemiste'mma. (From *hemi*, half, and *stemma*, a crown; alluding to the stamens crowning one side of the flower. Nat. ord., *Dilleniaceæ*.) A synonym of **Hibbertia**.

Hemite'lia. (From *hemi*, half, and *mitella*, a mitre; shape of root-stock. Nat. ord., *Filices*.)

Stove ferns, except *H. capensis* and *Smithii*, requiring similar treatment to HEMIONITIS.

- *capensis*. 14. S. Africa, Brazil, and Java. Greenhouse.
- *grandifo'lia*. W. Indies. 1852.
- *guianensis para'dæ*. Columbia. 1877.
- *horrida*. 20. Brown, yellow. W. Indies. 1848.
- *Karstenia'na*. Venezuela.
- *multifo'ra*. Brown, yellow. W. Indies. 1824.
- *seto'sa*. Brazil.
- *Smithii*. New Zealand. Syn., *Cyathea Smithii*. Greenhouse.
- *specio'sa*. Tropical America.

Hemlock. *Coni'um*.

Hemlock Spruce. *Pi'nus cana-densis*.

Hemp Agrimony. *Eupato'rium cannabi'num*.

Hen-and-Chickens. *Bellis perennis*, var. *proli'fera*. See **Daisy**.

Henbane. *Hyoscy'amus*.

Henfreya. (Named after Arthur Henfrey, Esq., a distinguished botanist. Nat. ord., *Acanthaceæ*; Tribe, *Justiceæ*. Allied to *Crossandra*.) A synonym of **Asystasia**.

Stove evergreen twiner. Cuttings of small side-shoots in sand, under a bell-glass, in a brisk bottom-heat; turfy loam and fibry peat; keep a high moist temperature after shifting.

- *scandens*. White. May. Sierra Leone. 1845. B. R. 1847, t. 31. Now known as *Asystasia quaterna*.

Henke'lia. (After Friedrich Henkel, a botanical author of the eighteenth century. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*.) United with **Didymocarpus**.

— *crini'ta*. A synonym of *Didymocarpus crinitus*.

Henna-plant. *Lawso'nia al'ba*.

Hepa'tica. (From *hepaticos*, relating to the liver; referring to the lobed leaves. Nat. ord., *Ranunculaceæ*; Tribe, *Anemoneæ*.) See **Anemone**.

- *acutifo'ba*. See *Anemone hepatica*, var. *acutifo'ba*.
- *america'na*. B. R. t. 387. See *Anemone hepatica*.
- *angulo'sa*. See *Anemone angulosa*.
- *trifo'ba*. See *Anemone hepatica*.

Hepi'alus Hu'muli. See **Otter Moth**.

Heptapleu'rum. (From *hepta*, seven, and *pleuron*, a rib; in allusion to the ribbed fruit. Nat. ord., *Araliaceæ*.)

Stove evergreen shrubs, requiring the same treatment as ARALIA.

- *polybo'tryum*. Green. Winter. Java. 1860. B. M. t. 6238. Syn., *Paratropia Teysmanniiana*.
- *venulo'sum*. Greenish. India. Syn., *Paratropia venulosa* and *Aralia digitata*.

Heraca'ntha. (From *heros*, a hero, and *acantha*, a thorn; alluding to the large thorns. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*.) See **Kentrophyllum**.

— *tauri'ca*. See *Kentrophyllum tauricum*.

Hera'cleum. Cow Parsnip. (From *heracles*, a plant consecrated to Hercules. Nat. ord., *Umbellifereæ*; Tribe, *Peucedaneæ*.)

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.

- *absinthio'fitum*. 2-3. Caucasus.
- *emimens*. G. C. 1871, p. 375.
- *flavescens*. Austria. Jard. 1889, p. 155.
- *giga'ntium*. See *H. villo'sum*.
- *persicum*. 13. White. Persia. 1888.
- *seto'sum*. S. Europe.
- *sibi'ricum*. 6. Summer. Europe, Asia. 1789.
- *villo'sum*. 10-12. Caucasus. 1820. Syn., *H. giganteum*.

Herbaceous Plants are plants which produce stems annually from a perennial root.

Herbal. A title given by many old authors to books treating on plants.

Herbarium. A collection of dried plants.

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.

Herbertia. (Named after *Dr. Herbert*, Dean of Manchester, a distinguished investigator of bulbous plants. Nat. ord., *Iridac.* This name, published in 1838, has been superseded in the Genera Plantarum by **Alophia**, published in 1840. **Herbertia** should therefore be retained.)

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. cœrulea.* Blue. April. Texas. 1842. B. M. t. 3862, fig. 3.
 — *Drummondiana.* Violet. April. Texas. 1842.
 — *pulchella.* 3. Blue, purple. July. Chili. 1827.
 — *pustilla.* Yellow. June. Brazil. 1830. B. M. t. 3862, figs. 1 and 2.

Herb-bennet. *Ge'um.*

Herb-grace. See Rue.

Herb Paris. *Pa'ris.*

Herb Robert. *Gera'nium Robertia-num.*

Hercules' Club. *Zanthoxyllum clava Herculis.*

Heritie'ra. Looking-glass plant. (Named after *L'Heritier*, a French botanist. Nat. ord., *Sterculiaceæ*; Tribe, *Sterculiæ.* 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.
H. littoralis. 20. Red. Leaves silvery beneath. E. Ind. 1780. Syn., *H. minor.*
 — *macrophylla.* Whitish. Leaves larger than in *H. littoralis.* India. G. C. 1886, xxv., p. 81.
 — *minor.* See *H. littoralis.*

Herma'nnia. (Named after *Paul Hermann*, a botanist. Nat. ord., *Sterculiaceæ*; Tribe, *Hermanniceæ.* 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 fibry peat.

- H. alnifolia.* 7. March. 1728.
 — *althæifolia.* 2½. April. 1728. B. M. t. 307. Syn., *H. fragrans.*
 — *argentea.* 2. Orange. May. 1820.
 — *conglomerata.* Yellow. S. Africa. 1872. Ref. Bot. t. 217.
 — *coronopifolia.* 2. June. 1828.
 — *cristata.* Orange-red. Transvaal. B. M. t. 7173.
 — *cuneifolia.* 2. August. 1791.
 — *decumbens.* 1. May. 1821.
 — *disermæfolia.* April. 1794. Jacq. H. Schoenb. t. 121.
 — *fasciculata.* Claret-purple. S. Africa. 1869. Ref. Bot. t. 289.
 — *flammea.* 3. Orange. December. 1794.
 — *fragrans.* See *H. althæifolia.*
 — *glandulosa.* 2. June. 1822.
 — *grandiflora.* See *Mahernia grandiflora.*
 — *hirsuta.* 3. April. 1789. Syn., *H. scabra.*
 — *hispidula.* March. 1824.
 — *holosericea.* 2. June. 1792.
 — *hyssopifolia.* 7. Straw. May. 1725.
 — *incisa.* 2. June. 1816.
 — *inflata.* 3. Tawny. September. S. Amer. 1829.
 — *involuta.* See *H. salviafolia.*
 — *latifolia.* Jacq. H. Schoenb. t. 119. See *H. salviafolia.*
 — *lavandulæfolia.* 1½. June. 1732.
 — *micans.* 2. 1790.
 — *multiflora.* 3. April. 1791.
 — *odora.* 3. May. 1780.
 — *plicata.* 3. November. 1774.
 — *procermbens.* 1½. May. 1792.
 — *pulverulenta.* 2. June. 1820.
 — *salviafolia.* 2. May. 1794. Syns., *H. involucreta* and *latifolia.*
 — *scabra.* Jacq. H. Schoenb. t. 127. See *H. hirsuta.*
 — *scoparia.* Cream-coloured. S. Africa. 1870. Ref. Bot. t. 195.
 — *tenuifolia.* 2. June.
 — *trifolia.* 2. 1752.
 — *trifurcata.* 3. Purple. May. 1789.
 — *triphylla.* 2. June. 1819.

Hermaphrodite. Flowers containing both male and female organs.

Herminie'ra. Ambash or Pith Tree. (From *hermine*, a bed-post; in reference to the shape of the stem. Nat. ord., *Leguminosæ.*)

Stove shrub, requiring a damp situation. The pot should be partially submerged. Seeds.

- H. Elaphroxyton.* Yellow. Tropical Africa.

Hermi'nium. (Derivation not explained. Nat. ord., *Orchidææ*; Tribe, *Ophrydeæ*—*Habenariææ.* Allied to *Ophrys.* Syn., *Aoplia.*)

Terrestrial orchids, inhabiting dry, chalky banks. Divisions of the roots; chalky loam and fibry peat; some hardy enough for a shady border, and others requiring the greenhouse.

- H. alpinum.* White. May. Switzerland. 1824.
 — *cordatum.* 3. Yellowish-green. March. N.W. Africa. 1830.
 — *congestum.* Green. November. Madeira.
 — *monorchis.* Green. June. England. Eng. Bot. ed. 3, t. 1701.

Herna'ndia. Jack-in-a-box. (Named after *F. Hernandez, M.D.*, a Spanish botanist. Nat. ord., *Laurineæ*;

Tribe, *Hernandiææ*. Allied to *Inocarpus*.)

Stove evergreen trees. Cuttings of ripe shoots in sand, under a bell-glass, and in brisk bottom-heat; peat and loam.

H. guianensis. 50. Guiana. 1820.

— *Mærenhoutiana*. Yellowish. Friendly Islands. 1809.

— *ovigera*. 50. E. Ind.

— *sonora*. 50. E. Ind. 1693. Wight Ic. t. 1855.

Herniaria. (From *hernia*, a rupture; from a supposition that this plant is a cure for ruptures. Nat. ord., *Illecebraceæ*.)

Hardy herbaceous plants, of little use, except for carpet bedding.

H. glabra. $\frac{1}{2}$. Green. Europe. Eng. Bot. ed. 3. 1171.

Heron's Bill. *Erodium*.

Herpestes. (From *herpestes*, a creeping thing; in reference to the creeping stems. Nat. ord., *Scrophulariaceæ*; Tribe, *Gratiolææ*. Allied to *Gratiola*.)

Aquatic perennials. Seeds and divisions; rich, loamy soil. *H. cuneifolia* is hardy; the other two require pans or tubs of water in a greenhouse.

H. cuneifolia. See *H. Monnieria*.

— *Monnieria*. $\frac{1}{2}$. Light blue. August. S. Amer. 1772. B. M. t. 2557. Syn., *H. cuneifolia*.

— *polyantha*. See *H. stricta*.

— *reflexa*. See *Myriophyllum proserpinacoides*.

— *stricta*. 1. Blue. August. Brazil and W. Indies. 1824. Syn., *H. polyantha*.

Herrænea. (Named after *General Herran*, a President of the Republic of New Grenada. Nat. ord., *Sterculiaceæ*; Tribe, *Buettneriææ*.)

Stove evergreen tree. For cultivation, see *THEOBROMA*, to which it is allied.

H. palmaria. Australia. 1866.

Herre'ria. (In honour of *Gabriel de Herrera*, a Spanish agriculturist of the fifteenth century. Nat. ord., *Liliacææ*.)

Greenhouse climber. A mixture of peat, sand, and loam. Seeds or cuttings.

H. Sarsaparilla. 8. Green, yellow. June. Brazil. 1824. Syn., *H. parviflora*. B. R. t. 1042.

Hesperaloe. (To indicate its affinity with *Aloe*. Nat. ord., *Liliacææ*; Tribe, *Dracæneæ*.)

Half-hardy succulent plant, with the habit of a dwarf *aloe*.

H. yuccæfolia. 3-4. Pale rose. Texas. 1882. G. C. 1882, xviii. p. 199, fig. 34. Syns., *Aloe yuccæiflora* and *Yucca parviflora*.

Hesperantha. Evening Flower. (From *hesperos*, the evening, and *anthos*, a flower. Nat. ord., *Iridææ*; Tribe, *Ixiææ*. Allied to *Ixia*.)

Small bulbs, from the Cape of Good Hope. Offsets; sandy loam and peat; requiring the protection of a cold pit in winter.

H. angustata. $\frac{1}{2}$. White. May. 1825.

H. cinnamo'mea. $\frac{1}{2}$. Violet. April. 1787. B. M. t. 1054.

— *erecta*. Yellow, blue. May. 1825. Syn., *Geissorhiza erecta*.

— *falcata*. $\frac{1}{2}$. Violet. May. 1787. Syn., *Ixia falcata*. B. M. t. 566.

— *graminifolia*. $\frac{1}{2}$. Greenish-white. August. 1808. Syn., *H. pilosa*, var. *nuda*. B. M. t. 1254.

— *longituba*. 1. White, reddish-brown. S. Africa. 1877.

— *pilosa*. $\frac{1}{2}$. White, speckled with red outside. April. 1811. B. M. t. 1475.

— *nuda*. See *H. graminifolia*.

— *radiata*. $\frac{1}{2}$. Violet. May. 1794. Syn., *Ixia radiata*. B. M. t. 573.

He'speris. Rocket. (From *hesperos*, the evening star; rockets being sweeter towards the evening. Nat. ord., *Cruciferaæ*; Tribe, *Sisymbriææ*.)

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. pulchella. 1. Red. July. Levant. 1827.

— *pygmaea*. Purple. June. Syria. 1828.

— *ramosissima*. $\frac{1}{2}$. Red. July. Algiers. 1819.

HARDY BIENNIALS.

H. bituminosa. See *H. runcinata*, var. *bituminosa*.

— *elata*. 4. Pink. June. Europe. 1824.

— *fragrans*. 1. Purple. May. Siberia. 1821.

— *grandiflora*. 4. White, purple. July. 1820. B. M. t. 2683.

— *heterophylla*. 4. Red. May. Italy. 1823.

— *laciniosa*. 1. $\frac{1}{2}$. Purple. May. South France. 1816.

— *runcinata*. 1. $\frac{1}{2}$. White, purple. June. Hungary. 1804.

— *bituminosa*. 1. $\frac{1}{2}$. White, purple. June. Syn., *H. bituminosa*.

— *tristis*. 1. Purple. May. Austria. 1629. B. M. t. 730.

HARDY HERBACEOUS PERENNIALS.

H. aprica. $\frac{1}{2}$. Purple. May. Siberia. 1822.

— *excelsa*. 3. White. May. 1828.

— *nodosa*. See *H. matronalis*, var. *sylvestris*.

— *matronalis*. 4. Purple. June. Europe. 1597. Eng. Bot. ed. 3, t. 105.

— *albiflora*. 4. White. June. Europe. 1759.

— *albo-plena*. 2. White. June. Europe. 1597.

— *foliiflora*. 2. Green. June. Europe. 1597.

— *hortensis*. Purple. June. Europe. 1759.

— *purpureo-plena*. Red. June. Europe. 1597.

— *sibirica*. 3. Purple. June. Siberia. 1800. Syn., *H. sibirica*.

— *sylvestris*. Pink. June. Britain. Syn., *H. nodosa*.

— *variegata*. 2. White, red. June. Europe. 1597.

— *repanda*. 2. Purple. June. Spain. 1821.

— *sibirica*. See *H. matronalis*, var. *sibirica*.

— *speciosa*. $\frac{1}{2}$. Rose, purple. April. Siberia. 1829. Swt. Fl. Gard. ser. 2, t. 135.

— *violacea*. $\frac{1}{2}$. Deep violet. June. Asia Minor.

EXCLUDED SPECIES.

H. africana. See *Malcomia africana*.

— *arenaria*. See *Malcomia arenaria*.

— *litorea*. See *Malcomia littorea*.

— *verna*. See *Arabis verna*.

Hesperocallis. (A name "to

suggest affinity with *Hemerocallis*." Nat. ord., *Liliaceæ*; Tribe, *Dracæneæ*.)

H. undulata. 2. Whitish. Sweet-scented. California. 1882.

Hespero'chiron. (Derivation not stated. Nat. ord., *Solanaceæ*.)

Half-hardy annual. Seeds.

H. californica. 3. White, with black stripes. July. California. 1823. Syn., *Nicotiana nana*. B. R. t. 833.

— *puberulus*. White, violet, yellow. N. Amer. 1888.

Hesperosco'rduum. (The onion of the west; from *hesperos*, the evening, and *scordon*, garlic. Nat. ord., *Liliaceæ*; Tribe, *Alliææ*.) United to **Brodiaea**.

Seeds or offsets in spring; sandy loam; require a little protection in winter.

H. hyacinthinum. 1. Blue. July. 1826.

— *lacteum*. See *Brodiaea lactea*.

He'ssia. (After *Paul Hesse*, a botanical traveller. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllææ*. Syn., *Imhofia*.)

H. erispata. 3. Pink. Summer. Cape Colony. 1790. Syns., *Amaryllis crispa*, Jacq. H. Schoenb. t. 72, *Imhofia crispa*, and *Strumaria crispa*, B. R. t. 1383.

— *filifolia*. 3. White. November. Cape Colony. 1774. Syns., *Imhofia filifolia* and *Strumaria filifolia*, Jacq. Ic. t. 361.

— *gemmata*. 1. Pale yellow. October. Cape Colony. 1812. Syns., *Imhofia Burchelliana*, *I. gemmata*, and *Strumaria gemmata*, B. M. t. 1620.

— *stellaris*. 3. Pink. October. Cape Colony. 1794. Syns., *Amaryllis stellaris*, Jacq. Ic. t. 71, and *Strumaria stellaris*.

Hessian Fly. *Cecido'myia destruc'tor*.

Hetera'nthera. (From *heteros*, variable, and *anther*, anther. Nat. ord., *Pontederaceæ*.)

Water perennials, allied to *Eichornia*. *H. limosa* will thrive in a pond or stream; the others require tubs in the greenhouse and stove; division; rich loam.

H. acuta. White. June. Virginia. 1812.

— *limosa*. Blue. July. N. Amer. 1822. B. M. t. 6192.

— *reniformis*. Blue. July. S. Amer. 1824.

Heteroce'ntron. (From *heteros*, variable, and *centron*, a spur. Nat. ord., *Melastomaceæ*; Tribe, *Osbeckiææ*.) See **Heeria**.

H. mexicana. B. M. t. 5166, and *H. roseum*, Ill. Hort. t. 97. See *Heeria rosea*.

Heterochæ'ta. (From *heteros*, variable, and *chaite*, a bristle; referring to the flower-envelopes. Nat. ord., *Compositææ*; Tribe, *Asteroidææ*.) Referred to **Aster** and **Erigeron**.

H. pubescens. See *Erigeron pubescens*.

Heteromorphæa. (From *heteros*, variable, and *morpha*, form; referring to the leaves. Nat. ord., *Umbelliferaæ*; Tribe, *Ammineææ*.)

Greenhouse evergreen shrub. Cuttings of young shoots under a bell-glass, in sand; sandy loam.

H. arboreo'scens. 2. Yellow. August. Cape of Good Hope. 1810.

Hetero'noma. (From *heteros*, variable, and *nome*, distribution; referring to the leaves. Nat. ord., *Melastomaceææ*; Tribe, *Osbeckiææ*.) A synonym of **Arthrostemma**.

H. diversifolium. See *Arthrostemma fragile*.
— *subtripline'roium*. See *Heeria subtripplinervia*.

Heteropa'ppus. (From *heteros*, dissimilar, and *pappus*, down; on account of the pappus of the ray and disc florets being different. Nat. ord., *Compositææ*; Tribe, *Asteroidææ*.)

Hardy perennial Aster-like herb. For cultivation, see **ASTER**, to which it is allied.

H. decipiens. Purple. Amur River. 1864. Gf. t. 425.

Hetero'pterys. (From *heteros*, various, and *pteron*, a wing; referring to the wings of the seed-vessels being of different forms. Nat. ord., *Malpighiæææ*; Tribe, *Banisteriæææ*. Allied to *Banisteria*.)

Stove climbers, except *nitida*, which is a shrub. Cutting 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. coerulesca. 10. Blue. W. Ind. 1823.

— *chrysophylla*. Orange. Brazil. 1793. B. M. t. 3237.

— *floribunda*. Blue. Mexico. 1824.

— *glabra*. Yellow. S. America.

— *laurifolia*. 10. Yellow. Jamaica. 1793.

— *nitida*. 10. Yellow. Brazil. 1809.

— *platyptera*. 10. Purple, yellow. July. Cayenne. 1823. Syn., *Byrsonima reticulata*.

— *purpurea*. Purple. Tropical America. 1759.

— *sericea*. 6. Yellow. July. Brazil. 1810.

— *undulata*. July. Buenos Ayres. 1838.

Heterospa'the. (From *heteros*, variable, and *spathe*, a spathe. Nat. ord., *Palmæææ*; Tribe, *Arecaææ*.)

Stove palm. Imported seeds. Rich sandy loam and leaf-mould. Summer temp., 65° to 85°; winter, 60° to 65°.

H. elata. Java. 1880. Syn., *Metroxylon elatum*.

Heterospe'rmum. (From *heteros*, variable, and *sperma*, seeds. Nat. ord., *Compositæææ*; Tribe, *Helianthoidæææ*.)

Hardy annual. Sow in the open border in April, or in a slight hotbed in March; seedlings to be transplanted.

H. pinatum. 2. Yellow. August. New Spain. 1799.

Hetero'stalis. See **Typhonium**.

Heterota'xis. (From *heteros*, variable, and *taxis*, arrangement. Nat. ord., *Orchideæææ*; Tribe, *Vandæææ-Maxillariæææ*.) See **Maxillaria**.

H. crassifolia. B. R. t. 1028. See *Maxillaria crassifolia*.

Heterothe'ca. (From *heteros*, various, and *theca*, a covering; referring to the flower-envelopes. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*.)

Hardy herbaceous perennials. Seeds and divisions of the plant in spring; common garden-soil.

H. inuloides. 1. Yellow. June. Mexico. 1826. Syn., *Diplocoma villosa*. Swt. Fl. Gard., t. 246.

— *scabra*. Yellow. August. Carolina and Georgia.

Hetero'toma. (From *heteros*, variable, and *toma*, a cut; in allusion to the unequally cut corolla. Nat. ord., *Lobeliaceæ*.)

Greenhouse herbaceous plant, with handsome spurred flowers, which bear a remarkable resemblance to a bird. Seeds in a slight hotbed, Rich loam and fibrous peat. Summer temp., 60° to 80°; winter, 55° to 65°.

H. lobelioides. Crimson. Mexico. 1861. G. C. 1887, p. 101. Fl. Ser. t. 1454.

Hetero'trichum. (From *heteros*, various, and *trich*, hair; referring to the disposition of the hairs on the leaves, etc. Nat. ord., *Melastomaceæ*; Tribe, *Miconiææ*. 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 fibry loam. Summer temp., 60° to 80°; winter, 48° to 55°.

H. macrodon. 7. White. September. S. Amer. 1848. B. M. t. 4421.

— *nitens*. White. May. St. Domingo. 1820.

— *patens*. Blush. May. St. Domingo. 1825.

Heuche'ra. (Named after Professor Heucher, a German botanist. Nat. ord., *Saxifragaceæ*; Tribe, *Saxifrageæ*.)

Hardy herbaceous perennials; divisions of the plant any time in spring; common garden-soil.

H. americana. 1. Purple. May. N. Amer. 1856.

— *cylindracea*. 2. Green. May. N. Amer. 1830. B. R. t. 1924. Sometimes called

H. cylindrica.

— *glabra*. 1. Pink. May. N. Amer. 1827.

— *hispidula*. 3. Purple. May. Virginia. 1826.

— *Menziesii*. See *Tolmiea Menziesii*.

— *pubescens*. 1. Pink, violet. June. N. Amer. 1812.

— *Richardsonii*. 1. Green. N. Amer. 1827.

— *sanguinea*. 1-1½. Bright crimson. June. New Mexico and Arizona. 1885. B. M. t. 6929.

— *villosa*. ¾. Violet. May. Canada. 1812.

He'via. (From *Hevé*, the vernacular name. Nat. ord., *Euphorbiaceæ*. Syns., *Micrandra* and *Siphonia*.)

Stove trees. Cuttings of half-ripened wood, in sand, under a bell-glass, in heat.

H. brasiliensis. 60. Green, white. May. Tropical S. America. 1823. Para Rubber tree.

Hewa'rdia. (Named after Mr. Howard. Nat. ord., *Filices*.) Synonymous with **Adiantum**.

A stove fern; divisions in spring; peat and sandy loam.

H. adiantoides. Brown. June. Guiana.

Hewi'ttia. (After Mr. Hewitt. Nat. ord., *Convolvulaceæ*.)

Stove climber. For cultivation, see *CONVOLVULUS*.

H. bicolor. White, purple. Guinea. Syn., *Convolvulus involucreatus*. B. R. t. 318.

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., *Acanthaceæ*; Tribe, *Thunbergiææ*.) See **Thunbergia**.

H. mysorensis. B. M. t. 4786, and var. *lutea*. Fl. Ser. t. 942. See *Thunbergia mysorensis*.

Hexade'smia. (From *hex*, six, and *desmos*, a bond or thong; in allusion to the six pollen masses. Nat. ord., *Orchideæ*; Tribe, *Epidendraceæ-Stenoglosseæ*.)

Stove epiphyte. Should have similar treatment to *MASDEVALLIA*.

H. crurigeræ. ¾. White. Central America. 1869.

— *Reedii*. Yellowish-green. Brazil. 1868.

Hexaglo'ttis. (From *hex*, six, and *glotta*, a tongue; in reference to the six spreading lobes of the style. Nat. ord., *Iridææ*; Tribe, *Moreææ*. Allied to *Homeria*.)

Greenhouse bulbs. For cultivation, see *IXIA*.

H. longifolia. 1½. Yellow. May. S. Africa. 1766. Syns., *Homeria flexuosa*, *Ixia longifolia*, Jacq. H. Vind. iii. t. 90, and

Moreææ flexuosa. B. M. t. 695.

— *virgata*. 2. Yellow. May. 1825. Syn., *Moreææ virgata*. Jacq. Ic. t. 228.

Hexi'sea. (From *ezisoein*, to equalize; the lip is similar to the petals. Nat. ord., *Orchideæ*; Tribe, *Epidendraceæ-Stenoglosseæ*.)

A pretty stove epiphytal orchid. Culture same as *ORNITHIDIUM*.

H. bidentata. Bright scarlet. Panama and Columbia. 1837. B. M. t. 7031.

Hey'nea. (Named after Dr. Heyne, a German botanist. Nat. ord., *Meliaceæ*; Tribe, *Trichiliææ*. 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.

H. quinquejuga. 20. Java. 1816.

— *trijuga*. 20. September. Nepaul. 1812. B. M. t. 1738.

Hibbe'rtia. (Named by G. Hibbert, a distinguished promoter of botany. Nat. ord., *Dilleniaceæ*; Tribe, *Hibbertiææ*. Allied to *Candollea*. Syn., *Hemistemma*.)

Greenhouse evergreen shrubs, with yellow flowers, from Australia, except where otherwise mentioned. Cuttings of half-ripened roots in sandy soil, under a bell-glass, in spring; sandy loam and a little peat. *Vouabilla* is an elegant twiner, and *grossulariaefolia* 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*. Yellow. Australia. 1822. Syn., *Pleurandra acicularis*.
 — *Baudouin'i*. Yellow. New Caledonia.
 — *Billardie'ri*. Yellow. Australia. 1824. Syn., *Pleurandra scabra*.
 — *cistifolia*. 1. June. 1826.
 — *corifolia*. B. M. t. 2672. See *H. pedunculata*.
 — *crenata*. Andr. Rep. t. 472. See *H. grossulariaefolia*.
 — *Cunningham'i*. 2. July. W. Australia. 1832. Twiner. B. M. t. 3183. Syn., *Candollea Cunninghami*. Maund Bot. t. 85.
 — *denta'ta*. 6. 1814. Twiner.
 — *fascicula'ta*. 3. July. Victoria to New S. Wales. 1822. Syn., *H. virgata*. Ic. Pl. t. 267.
 — *flexuosa*. 2. May. 1823.
 — *grossulariaefolia*. 6. May. W. Australia. 1816. Trailer. Syns. *H. crenata* and *Burtonia grossulariaefolia*. Salis. Parad. t. 73.
 — *linea'ris*. 6. June. Queensland. 1821.
 — *obtusifolia*. 2. Van Diemen's Land. 1824.
 — *nitida*. Yellow. Australia. 1823. Syn., *Pleurandra nitida*.
 — *pedunculata*. 2. June. New South Wales. 1821. B. R. t. 1001. Syn., *H. corifolia*.
 — *perfoliata*. 3. May. W. Australia. 1842. B. R. 1843, t. 64.
 — *sali'gna*. 3. July. New S. Wales. 1823.
 — *stri'cta*. Yellow. Australia. Syns., *H. Reedii*, *Pleurandra calycina*, and *P. ericeafolia*.
 — *virga'ta*. See *H. fasciculata*.
 — *volutibilis*. 8. June. Queensland. 1790. Twiner. Andr. Rep. t. 126. Syn., *Dillenias speciosa*, B. M. t. 449.

Hibi'scus. (Virgil's name for the Marsh Mallow. Nat. ord., *Malvaceæ*; Tribe, *Hibiscææ*.)

Hardy annuals sow in open border, in the beginning of April; tender annuals sow in hot-bed—seedlings to have out-door or greenhouse treatment; hardy herbaceous require dividing in spring, and a warm 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 requiring bottom-heat, peat and loam; usual greenhouse and stove temperatures.

HARDY ANNUALS.

- H. africa'nus*. 2. White. June. Africa. 1826.
 — *Huegelii*. May. Swan River. 1841
 — — *quinquevulnera* is a variety with five crimson spots. 1863.
 — *trionum*. 2. Yellow, brown. July. Italy. 1596. B. M. t. 209.

STOVE ANNUALS.

- H. digita'tus*. 2. White, red. August. Brazil. 1816. B. R. t. 608.
 — — *Keria'nus*. 2. White, red. August. Brazil. 1816.
 — *longiflorus*. Pale yellow. August. E. Ind. 1817.
 — *radia'tus*. 2. Yellow. July. E. Ind. 1790. B. M. t. 1911.
 — *tetraphyllus*. 1½. Yellow. July. Bengal. 1818.
 — *vitiflorus*. 2. Yellow. August. E. Ind. 1890.

HARDY HERBACEOUS PERENNIALS.

- H. californicus*. 5-6. White, centre purple. California. 1891.

- H. coccineus*. 2. Scarlet. July. N. Amer. 1804. Syn., *H. speciosus*.
 — *grandiflorus*. 3. Flame. July. Georgia. 1816. Half-hardy. Salis. Parad. t. 22.
 — *incanus*. 3. Yellow. September. Carolina. 1806.
 — *militaris*. 3. Purple. August. N. Amer. 1804. B. M. t. 2385.
 — *moscheutos*. 4. White, pink. August. N. Amer. Swt. Fl. Gard. t. 286.
 — *palustris*. 3. Pink. August. N. Amer. 1759. B. M. t. 892.
 — *pentacar'pus*. 3. Lilac, red. August. Venice. 1752. Jacq. Ic. t. 143.
 — *roseus*. 4. Pink. August. France. 1827. Maund Bot. t. 19.
 — *scaber*. 2. Yellow. August. Carolina. 1810.
 — *speciosus*. B. M. t. 360. See *H. coccineus*.
 — *syriacus*. 8. Purple. August. Syria. 1596. Deciduous shrub. B. M. t. 83.
 — — *albus*. 8. White.
 — — *albus-plenus*. 8. White. August.
 — — *marginatus*. 8. Purple, white. August. Syria.
 — — *purpureus*. 8. Purple. August.
 — — *purpureo-plenus*. 8. Purple. August.
 — — *ruber*. 8. Red. August.
 — — *variegatus*. 8. Striped. August.
 — *virginicus*. 2. Red. August. Virginia. 1798. Jacq. Ic. t. 142.
 — *Wraye*. 10. Purple. October. Swan River. 1839. Deciduous shrub. B. R. 1840, t. 69.

GREENHOUSE EVERGREEN SHRUBS.

- H. cisalpinus*. Rosy-lilac. Brazil. 1887.
 — *gossypinus*. 4. Yellow. July. Cape of Good Hope. 1818.
 — *grossulariaefolius*. 4. Blush. June. Swan River. B. M. t. 4329.
 — *heterophyllus*. 6. White, red. August. N. S. Wales. 1803. B. R. t. 29.
 — *lasiocarpus occidentalis*. White, pink. N. Amer. 1888.
 — *multifidus*. 2. Azure. September. N. Holland. 1837. Deciduous. Paxt. Mag. vii. p. 103.
 — *Richardsoni*. 3. Yellow. August. N. S. Wales.
 — *variegatus*. Leaves marked with grey and pink. New Caledonia. 1863. Warm greenhouse.

STOVE EVERGREEN SHRUBS, ETC.

- H. abelmoschus*. 3. Yellow. August. India. 1640.
 — *athiopius*. 15. Purple. August. Cape of Good Hope. 1774.
 — *Baptistii*, is a double-flowered var. of *H. rosa-sinensis*.
 — *bifurcatus*. 2. Purple. June. Brazil. 1825.
 — *borbocanus*. 10. Yellow. July. Bourbon. 1820.
 — *calycinus*. Natal. Syn., *H. chrysanthus*.
 — *Cameroni*. 1. Rosy. July. Madagascar. 1838. Kn. and West. t. 82.
 — — *fulgens*. Red. August. Madagascar. 1843.
 — *cancelletus*. 3. Yellow. July. E. Ind. 1817.
 — *chrysanthus*. See *H. calycinus*.
 — *Collerii*. A form of *H. rosa-sinensis* with double yellow flowers. Polynesia. 1876.
 — *collinus*. 4. Yellow. Brown. January. 1836.
 — *Cooperi*. Scarlet; leaves variously mottled, green, white, and rose. New Caledonia. 1864.
 — *crinitus*. 3. Yellow, red. September. Prome. 1828. Herbaceous perennial.
 — *diversiflorus*. 6. Yellow. June. E. Ind. 1798. Jacq. Ic. t. 551.
 — *elatius*. 50. Red. W. Indies. 1790. Syn., *Paritum elatum*. From its inner bark Cuba bast is formed.

- H. ferrox.* 5. Yellow. May. New Grenada. 1844. B. M. t. 4401.
- *ferrugineus.* 15. Scarlet. Madagascar. 1824.
- *fulviflorus* *des.* 4. Yellow, purple. June. Ceylon. 1732. B. R. t. 938.
- *furcata* *lus.* 2. Yellow. August. E. Ind. 1816. Herbaceous perennial.
- *Jerroldiana* *lus.* 6. Crimson. July. Brazil. 1843. Herbaceous perennial. Faxt. Mag. xiii. p. 1.
- *laempes.* 10. Pink. E. Ind. 1806. Wight Ic. t. 5.
- *lilacina* *lus.* 6. Lilac. N. Holland. 1836. B. R. t. 2009.
- *liliflorus.* 10. Scarlet. July. Mauritius. 1823. B. C. t. 1995.
- *Lindleyi.* 3. Purple. December. India. 1828. B. C. t. 1849.
- *Macleayana* *lus.* Yellow. August. W. Ind. 1827.
- *Maunoh.* 3. Yellow. July. E. Ind. 1712. Herbaceous perennial. B. M. t. 1702 and 3152.
- *marmorata* *lus.* 3. White, rose-pink. February. Mexico. 1854.
- *mutabilis.* 15. White. November. E. Ind. 1890. Andr. Rep. t. 228.
- *pedunculata* *lus.* 2. Red. August. Cape of Good Hope. 1812. B. C. t. 836.
- *pentaspermus.* 3. Yellow. July. Jamaica. 1825.
- *phoeniceus.* 8. Purple. July. E. Ind. 1796. B. R. t. 230.
- *pulchellus.* 3. July. E. Ind. 1820.
- *rhombifolius.* 4. Purple. July. E. Ind. 1823.
- *rosa-malabaricus.* 2. Scarlet. August. E. Ind. B. C. t. 769.
- *rosa-sinensis.* 10. Red. July. E. Ind. 1731. B. M. t. 158.
- — *brilliantissima.* Crimson.
- — *Calleonii.* Buff, crimson.
- — *carnea-plena.* 10. Flesh. July. E. Ind. 1731.
- — *flava-plena.* 10. Yellow. July. E. Ind.
- — *fulgens.* Garden variety. Garden, 1888, xxxiii. p. 96, t. 634.
- — *intermedia.* Hybrid between *H. rosasinensis*, var. *magnificus*, and *H. schizopetalus*. 1889.
- — *lutea.* 10. Yellow. July. E. Ind. 1823.
- — *mimiculus semi-plenus.* Vermilion-scarlet.
- — *rubra-plena.* 10. Red. July. E. Ind.
- — *variegata-plena.* 10. Striped. July. E. Ind.
- — *vivicans.* Crimson-scarlet.
- — *zebrinus.* Scarlet, creamy-yellow.
- *splendens.* 10. Rose. May. N. Holland. 1828.
- *uratiensis.* Yellow, crimson. Tropics. G. C. 1891, ix. p. 529, fig. 105.
- *Telfairiae.* 2. Rose. July. Mauritius. 1825. Maund Bot. t. 212.
- *trilobus.* 2. Yellow. July. W. Ind. 1818.
- *tubulosus.* 2. Yellow. August. E. Ind. 1796.
- *velutinus.* 6. White. July. Timor. 1818.
- *venustus.* Creamy-yellow. Tahiti? 1891. B. M. t. 7183.
- Hickory.** *Carya.*
- Hide-bound.** See **Bark-bound.**
- Hieracium.** Hawkweed. (A name from Pliny for eye-salve; referring to the ancient employment of the juice. Nat. ord., *Compositae*; Tribe, *Cichoraceae*.)
- Hardy herbaceous perennials, with one ex-
- ception, and 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. *Fruticosum* is a greenhouse shrub; cuttings will strike in sandy soil, either under a bell glass or a hand-light, during the summer; sandy loam suits it, with a little peat. It is a very large genus, only a very few species being suitable for garden plants.
- H. alpestre.* 1. July. Switzerland. 1822.
- *alpinum.* 1. July. Britain.
- *amplexicaule.* 1. July. Pyrenees. 1739.
- — *pulmonarioides.* 1. July. Switzerland. 1819.
- *anchusefolium.* 1. July. Italy. 1816.
- *angustifolium.* 1. May. Switzerland. 1823.
- *aurantiacum.* 1. Orange. June. Scotland.
- — *flavum.* 1. July. Switzerland. 1819.
- *Auricula.* 1. July. England.
- *bifidum.* 1. June. Hungary.
- *bracteolatum.* 1. August. Europe. 1823.
- *calcaevum.* 1. July. Europe. 1816.
- *canadense.* 2. July. Canada. 1800.
- *cerinthoides.* 1. August. Scotland.
- *ciliatum.* 2. July. Crete. 1824.
- *collinum.* 1. July. Switzerland. 1819.
- *corymbosum.* 2. July. 1817.
- *crassifolium.* 1. July. Hungary. 1820.
- *croceum.* 1. June. Siberia. 1818.
- *cydoniaefolium.* 2. July. France. 1816.
- *cymsum.* 1. May. Europe. 1739.
- *denticulatum.* 1. July. Scotland.
- *echinoides.* 1. July. Hungary. 1802.
- *elongatum.* 1. July. Switzerland. 1819.
- *eridiphorum.* 1. August. South Europe. 1817.
- *eriphyllum.* 1. June.
- *flagiculatum.* 5. July. Canada.
- *flagellare.* 1. May. 1816.
- *florentinum.* 2. July. Germany. 1791.
- *foliosum.* 2. July. Hungary. 1805.
- *fruticosum.* 2. July. Madeira. 1785. Greenhouse shrub.
- *glabratum.* 1. July. Switzerland. 1819.
- — *tubulosum.* 1. July. Switzerland. 1819.
- *Gmelini.* 1. June. Siberia. 1798.
- *Gochnathii.* 1. June. Switzerland. 1819.
- *Gronovii.* 1. June. N. Amer. 1798.
- *Halleri.* 1. July. Britain.
- *heterophyllum.* 2. August. Woods.
- *Hoppeanum.* 1. June. Switzerland. 1819.
- *humile.* 1. July. Germany. 1804.
- — *brachiatum.* 1. June. Switzerland. 1819.
- *incaenum.* 2. July. Caucasus. 1817.
- *incarnatum.* 1. Pink. June. Carniola. 1815. Jacq. Ic. t. 578.
- *incisum.* 1. July. Switzerland. 1819.
- *inuloides.* 4. August. Scotland.
- *Kalmii.* 1. August. Pennsylvania. 1794.
- *laevigatum.* 2. August. 1804.
- *lanatum.* 3. Yellow. Densely covered with shaggy pubescence.
- *Lawsonei.* 1. June. Britain.
- *longifolium.* 1. July. 1821.
- *maculatum.* 1. August. Britain.
- *molle.* 1. August. Scotland.
- *ovatum.* 1. July. Switzerland. 1819.
- *pallidum.* 1. July. Hungary. 1818.
- *paniculatum.* 1. June. Canada. 1800.
- *picatum.* 1. July. Switzerland. 1819.
- *pilosephalum.* 1. July. 1823.
- *piloselliforme.* 1. June. Switzerland. 1819.
- *porrifolium.* 1. July. Austria. 1840.
- *praemorsum.* 1. June. Switzerland. 1818.
- *prenanthoides.* 2. July. France. 1819.
- *prunellaefolium.* 1. July. Switzerland. 1820.
- *pulmonarioides.* 1. July. France. 1819.
- *pulmonarium.* 1. July. Scotland.

- H. pusillum*. 1. July. Labrador. 1800.
 — *racemosum*. 2. July. Hungary. 1816.
 — *ramosum*. 2. August. Hungary. 1805.
 — *repens*. 1½. July. Switzerland. 1819.
 — *rigidum*. 2. June. Britain.
 — *angustifolium*. 2. June. Britain.
 — *picatum*. 2. June. Britain.
 — *rotundatum*. 3. July. Hungary. 1817.
 — *rupe stre.* 1. June. Switzerland. 1820.
 — *saxatile*. 1. July. Austria. 1801. Jacq.
 Ic. t. 163.
 — *Schmidtii*. 1½. June.
 — *Schraderi*. 1. July. Switzerland. 1819.
 — *speciosissimum*. 1½. August. S. Europe.
 1821.
 — *speciosum*. 1½. June. 1818.
 — *stictifolium*. 1½. June. Europe. 1804.
 — *Sternbergii*. 1. July. Switzerland. 1819.
 — *stodni ferum*. 1. May. Switzerland. 1820.
 — *succisifolium*. 1. June. Switzerland. 1819.
 — *sylvaticum*. 1½. August. Britain.
 — *tricocephalum*. 1. July. 1823.
 — *umbellatum*. 3. August. Britain.
 — *undulatum*. 1½. July. Spain. 1778.
 — *venosum*. 1. July. N. Amer. 1790.
 — *versicosum*. 1. May. S. Europe. 1732.
 — *verruculatum*. 1. July. 1821.
 — *villosum*. 1. July. Scotland.
 — *virgatum*. 2. July. N. Amer. 1816.

Hiero'chloe. Holy Grass. (From *hieros*, sacred, and *chloa*, grass; on account of its being strewn before church doors, on saints' days, in some parts of North Europe. Nat. ord., *Gramineæ*.)

Hardy perennial sweet-scented grasses, suitable for mixed borders, etc.

- H. alpina*. 1. July. Mountains of northern hemisphere. 1827.
 — *borealis*. 1-2. Chestnut-brown. May. Caithness.
 — *redolens*. New Zealand. 1832.

Higgin'sia. (Named after Don O'Higgins, a Spanish-American officer. Nat. ord., *Rubiaceæ*; Tribe, *Hamelieæ*.) See **Hoffmannia**.

H. mexicana. See *Hoffmannia mexicana*.

Hillia. (Named after Sir John Hill, a botanical author. Nat. ord., *Rubiaceæ*; Tribe, *Cinchoneæ*. Allied to *Cinchona*.)

Stove evergreens, with white flowers. Cuttings in sand, under a glass, in bottom-heat; sandy loam and peat.

- H. longiflora*. 1½. March. W. Ind. 1789. B. M. t. 721.
 — *prasinantha*. Greenish. W. Ind. 1824. Fl. Ser. t. 188. Syn., *Solandra oppositifolia*.
 — *tetrandra*. 1½. June. Jamaica. 1793.

Hillebrandia. (After W. Hillebrand, a botanical collector. Nat. ord., *Begoniaceæ*.)

Stove herb, with the appearance of a Begonia, which see for culture.

- H. sandwicensis*. White. Sandwich Islands. 1887. B. M. t. 6953.

Hindsia. (Named after R. B. Hinds, a promoter of botany. Nat. ord., *Rubiaceæ*; Tribe, *Cinchoneæ*. Allied to *Manettia*.)

Greenhouse evergreen shrubs, from Brazil. Cuttings of young shoots in sand, under a bell-

glass, in bottom-heat. Sandy loam and leaf-soil.

- H. longiflora*. 2. Blue. August. 1841. Syn., *Rondeletia longiflora*, B. M. t. 3977.
 — *alba*. 2. White. May. 1845.
 — *violacea*. 3. Violet. May. 1844. B. R. 1844, t. 40.

Hippeastrum. Equestrian Star. (From *hippeus*, a knight, and *astron*, a star; referring to one of the species, *equestre*. Nat. ord., *Amaryllideæ*; Tribe, *Amaryllieæ*. Allied to *Vallota*.)

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. Banksianum*. Pink. October. 1840.
 — *Forbesii*. 2. Purple, white. July. Cape of Good Hope. 1823.
 — *purpureum*. 2. Purple. July. Cape of Good Hope. 1823.
 — *formosissimum*. 1. Dark red. July. N. Amer. 1858.
 — *japonicum*. Yellow. July. Japan.
 — *lineatum*. 1. April. S. Amer. 1820.
 — *puberulum*. 1. Pink. June. Cape of Good Hope. 1795.
 — *Slaterianum*. Red. March. Cape of Good Hope. 1844.

STOVE.

- H. Ackermannii* and its var. *pulcherrima*, are garden hybrids.
 — *advenum*. 1-1. Yellow or red. December. Chili. Syns., *Amaryllis advena*, B. R. t. 849, *Habranthus hesperius*, *H. minutus*, Swt. Fl. Gard. ser. 2, t. 213, and *Eustephia Macleania* of Ref. Bot. t. 332.
 — *pallida*. Pale yellow. B. C. t. 1760.
 — *Alberti*. Orange-scarlet. Cuba. 1867.
 — *ambiguum*. B. M. t. 3542. Hybrid between *H. vittatum* and *H. solandriiflorum*.
 — *Andraeum*. 1. Red. Columbia. 1880.
 — *angustum*. B. M. t. 2639. See *H. bifidum*.
 — *anomalum*. Crimson, green. S. Amer.
 — *auriculatum*. 1½. Green, crimson. May. Central Brazil. 1819. Syn., *Amaryllis aulica*, B. M. t. 3311.
 — *glaucophyllum*. B. M. t. 2983. See *H. organense*.
 — *stenopetalum*. Perianth segments narrower than in the type. B. R. t. 444.
 — *Bagnoldii*. 1. Yellow, tinged with red. Chili. Syn., *Habranthus Bagnoldii*. B. R. t. 1396.
 — *barbatum*. White. A form of *H. equestre*.
 — *bicolor*. 1-1½. Bright red, yellowish-green. October. Chili. Syns., *Amaryllis bicolor*, *A. cyrtanthoides* B. M. t. 2399, *A. ignea*, B. R. t. 89, and *Phycella bicolor*, B. R. t. 1943.
 — *bifidum*. 1. Bright red. March. Buenos Ayres. 1825. Syn., *Habranthus bifidus*, B. M. t. 2599. Probably also *Habranthus kermesinus*, B. R. t. 1638, *H. intermedius*, B. R. t. 1148, *H. angustum*, B. M. t. 2639, *H. nobilis*, *H. nemoralis*, *H. pedunculatus*, *H. pulcher*, and *H. spathaceus*.
 — *brachyandrum*. Pale pink to blackish-red. S. Brazil. 1890.
 — *breviflorum*. 3. White, red. April. Buenos Ayres. 1836. B. M. t. 3549.
 — *bulbosum* and its numerous varieties are forms of *H. rutitum*.
 — *calyptratum*. 1½. Green, red. June. Brazil. 1816. Syn., *Amaryllis calyptrata*, B. R. t. 164.
 — *Carnarvonia*. Garden hybrid.

- H. Chelso'ni*. Fl. Mag. t. 545. Garden hybrid.
 — *Colvi'let*. Garden hybrid.
 — *Crod'mis*. Garden hybrid.
 — *Cybi'ster*. 2. Bright crimson, tinged with green. Andes of Bolivia. 1840. Syn., *Sprekelia Cybister*, B. R. 1840, t. 33.
 — *equestre*. 1½-2. Yellowish-green, bright red. August. Tropical America. 1710. Syn., *Amaryllis equestris*, B. M. t. 305.
 — — *ma'jor*. 2. Orange, green. W. Indies. 1710. B. R. t. 234.
 — — *semiple'num*. 2. Orange, green. August. Cuba. 1809.
 — *equestri'forme*. See *H. rutilum*, var. *fulgidum*.
 — *formosum*. Garden hybrid.
 — *Gowe'ni*. Garden hybrid.
 — *Gravi'næ*. Garden hybrid.
 — *Griffi'ni*. R. M. t. 3528. Hybrid between *H. psittactum* and *H. Johnsoni*.
 — *Haylo'ckii*. Garden hybrid.
 — *Henderso'ni*. Garden hybrid.
 — *Herberti*. Garden hybrid.
 — *Herberti'num*. 1. Bright red. Chili. 1825. Syn., *Phycella Herbertiana*, B. R. t. 1341.
 — *interme'dium*. 2. Striped. August. Brazil. 1821.
 — *Johnso'ni*. Garden hybrid.
 — *kermesi'num*. Carmine. June. Brazil. 1833.
 — *Leopo'dii*. Crimson, white, greenish. Peru. 1869. Flor. Mag. t. 475-6. Syn., *Amaryllis Leopoldii*.
 — *margina'tum*. Garden hybrid.
 — *Mende'zii*. Fl. Mag. new ser. t. 167. Garden hybrid.
 — *minia'tum*. 1-1½. Bright red. June. Peru. 1825.
 — *organe'nse*. 1-1½. Bright crimson, green. S. Brazil. 1841. Syn., *Amaryllis aulica*, var. *glauco'phylla*, B. M. t. 2983.
 — — *compre'ssum*. Red, white. Brazil.
 — *pard'i'num*. 2. Straw with scarlet spots. February. Peru. 1867. Flor. Mag. t. 344. Syn., *Amaryllis pardina*, B. M. t. 5645.
 — — *rube'scens*. Reddish. 1870.
 — *prate'nse*. 1-1½. Bright red. Chili. 1840. Syn., *Habranthus pratensis*, B. R. 1842, t. 85, and *H. speciosus*.
 — *pro'cerum*. 2-3. Lilac. Winter. S. Brazil. 1864. Syn., *Amaryllis procera*, Fl. Ser. t. 2077-8, and *A. Rayneri*, B. M. t. 5883.
 — *psittac'i'num*. 2. Green, scarlet. July. Brazil. 1816.
 — *pulverule'ntum*. B. M. t. 2273. See *H. rutilum*, var. *acuminatum*.
 — *pyrochro'um*. Scarlet. Brazil. 1865. Ill. Hort. t. 420.
 — *Regi'næ*. 2. Bright red, greenish-white. May. Tropical America. 1725. Mexican Lily. Syn., *H. regium* and *Amaryllis Regina*, B. M. t. 453.
 — *reticula'tum*. 1. Scarlet. April. S. Brazil. 1777. Syn., *Amaryllis reticulata*, B. M. t. 657, *Coburgia reticulata* and *Leopoldia reticulata*.
 — — *striatifo'lium*. 1. Purple. August. Brazil. 1815. Syn., *Amaryllis reticulata*, var. *striatifolia*, B. M. t. 2513.
 — *retine'rium*. 2. Scarlet. May. W. Indies. 1822.
 — *Ro'e'zii*. Light orange or brick-red. Bolivia. 1875.
 — *ro'seum*. ½. Bright red, greenish. Chili. 1831. Syn., *Habranthus roseus*, Swt. Fl. Gard. ser. 2, t. 107, and *H. pumilus*, B. C. t. 1771.
 — *rutilum*. 1. Bright crimson, green. S. Brazil. 1810. Syn., *Amaryllis rutila*, B. R. t. 23, and *Hippeastrum bubulosum*, var. *rutilum*.
 — — *acumina'tum*. Pale pink. Syn., *H.*

- pulverulentum*, B. M. t. 2273, *Amaryllis acuminata*, B. R. t. 534 and 1188, and *A. pulverulenta*, B. C. t. 484.
 — *H. rutilum citri'num*. Bright yellow.
 — — *croca'tum*. Safron-colour. Syn., *Amaryllis crocata*, B. R. t. 38.
 — — *fulgidum*. Bright scarlet, green. Syn., *Amaryllis fulgida*, B. R. t. 226, *A. miniata*, B. M. t. 1943, *Hippeastrum subbarbatum*, B. M. t. 2475, *H. ubulosum*, vars. *equestriforme*, *fulgidum*, *Simsianum*, *subbarbatum* and *unguiculatum*.
 — *Simsi'num*. See *H. rutilum*, var. *fulgidum*.
 — *solandri'form*. 1½. White, green. January. Guiana. 1820. B. M. t. 2573 and 3771.
 — — *striat'm*. Green, white.
 — *spalha'ceum*. B. M. t. 2315. Probably a variety of *H. equestre*.
 — *specta'bile*. B. C. t. 159. Garden hybrid.
 — *stylo'sum*. 1½. Bright fleshy-red. May. Guiana. 1821. Syn., *Amaryllis stylosa* and *A. maranensis*, B. R. t. 719.
 — *Swee'tii*. Garden hybrid.
 — *varia'bilis*. 1. Red, white. June. Cape of Good Hope. 1821.
 — *vitta'tum*. 3. White, red. April. Andes of Peru. 1769. Syn., *Amaryllis vittata*, B. M. t. 129.
 — — *Harrisonia'na*. White, red. Peru. 1874. B. R. t. 988.
 — — *latifo'lium*. White, red, green.

Hi'ppion. (From *hippice*, the name of a herb from Pliny, which, he said, if put into a horse's mouth, makes him insensitive to hunger or thirst. Nat. ord., *Gentianaceæ*.)

Half-hardy biennial. Sown in a hotbed, in spring, or the end of summer, and carefully kept in stoves and greenhouses during the winter, they will bloom early the following season.

- H. hyssopifo'lium*. See *Stevogia orientalis*.
 — *verticilla'tum*. See *Stevogia occidentalis*.
 — *visco'sum*. 2. Yellow. June. Canaries. 1781.

Hippobro'ma. (From *hippos*, a horse, and *bromos*, food. Nat. ord., *Lobeliaceæ*.) See *Isotoma*.

- H. brevifo'rum*. See *Isotoma breviflora*.
 — *longifo'rum*. See *Isotoma longiflora*.

Hippobro'mus. (From *hippos*, a horse, and *bromos*, food. Nat. ord., *Sapindaceæ*.)

Greenhouse shrub. Cuttings under a hand-glass in sand. Sandy loam.

- H. ala'tus*. Natal.

Hippocrep'is. Horse-shoe Vetch. (From *hippos*, a horse, and *crepis*, a shoe; referring to the form of the seed-pod. Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*.)

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. como'sa* is a useful rock plant.

- H. balea'rica*. 2. May. Minorca. 1776. Shrub. Jacq. Ic. t. 149.
 — *como'sa*. ½. April. England. Perennial trailer. Eng. Bot. ed. 3, t. 330.

H. glauca. $\frac{1}{2}$. May. Italy. 1819. Perennial trailer.

— *helvetica*. A synonym of *H. comosa*.

— *multisiliquosa*. 1. July. South Europe. 1570. Annual.

Hippo'mane. (From *Hippomanes*, a name used by Theophrastus for a kind of spurge. Nat. ord., *Euphorbiaceæ*. Syn., *Mancinella*.)

A stove tree with poisonous milky juice. Sandy loam and peat. Cuttings in sand under a hand-glass.

H. Mancinella. 50. Greenish. May. Central America. 1690.

Hippo'phæ. Sea Buckthorn. (From *hippos*, a horse, and *phao*, to kill. Nat. ord., *Elæagnaceæ*. 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 grasses.

H. argentea. See *Shepherdia argentea*.

— *canadensis*. See *Shepherdia canadensis*.

— *rhamnoides*. 12. May. England.

— *angustifolia*. 2. May. South England.

— *sibirica*. April. Siberia.

— *sabicefolia*. 8. Nepaul. 1822.

Hippu'ris. Mare's Tail. (From *hippos*, a horse, and *oura*, a tail; from a fancied resemblance of the plant to a horse's tail. Nat. ord., *Haloragacæ*.)

Perennial aquatic herb, suitable for the edge of a pond. Division of roots; seeds.

H. vulgaris. $\frac{3}{4}$. Greenish, red. Summer. Britain. Eng. Bot. ed. 3, t. 516.

Hip'tage. (From *hiptamai*, to fly; in allusion to the hairs on the seed, which assist in its dispersion by wind. Nat. ord., *Loganiacæ*; Tribe, *Gærtnereæ*. Syn., *Gærtnera*.)

Stove evergreen twiners; cuttings of firm young shoots in April, in sand, under a bell-glass, and in bottom-heat; peat and loam.

H. Madag'ca. 15. White, yellow. April E. Ind. 1793. Syn., *Gærtnera racemosa*.

— *obtusifolia*. 20. White. China. 1810. Syn., *Gærtnera obtusifolia*.

Hiræ'a. (Named after *De La Hire*, a French botanist. Nat. ord., *Malpighiacæ*; Tribe, *Hirææ*.)

Stove climbers. Cuttings of firm young shoots in sand, under a bell-glass, in bottom-heat; sandy, fibry loam, and fibry peat, with a little freestone or charcoal.

H. glaucescens. Yellow. A doubtful plant.

— *indica*. 10. White. July. E. Ind. 1820.

Syn., *Aspidopterys Rozeburghiana*.

— *nutans*. 10. White. July. E. Ind. 1820.

Syn., *Aspidopterys nutans*.

— *odorata*. See *Triaspis odorata*.

— *reclinata*. See *Triastellateia australasica*.

— *Simsiana*. 10. Yellow. August. 1793.

Syn., *Byrsonima volubilis*.

Hoa'rea. A section of the genus **Pelargonium**.

Hodgso'nia. (After *B. H. Hodgson*, F.L.S. Nat. ord., *Cucurbitaceæ*.)

A stove shrub, with slender climbing stems,

which are said to attain a length of 100 feet in their native country. Keep in a damp heat in summer, but more cool and dry in winter. Rich sandy loam. Seeds.

H. heteroclita. Yellow, white. May. Malay Archipelago.

Hoe. This is the implement which should be most frequently in the gardener's hand during summer, 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 desirable, 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 workmen'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, as in the accompanying sketch No. 1. The blades broader than four inches Mr. Barnes has made like a Dutch hoe, No. 2.

No. 1.



No. 2.



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 on 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.

Hoffmannia. (After Prof. Hoffmann, a German botanist. Nat. ord., *Rubiaceæ*; Tribe, *Hamelieæ*. Syn., *Higginsia*.)

Greenhouse evergreen shrubs. 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. discolor. †. Red. Leaves satiny-green above, red purple beneath. Mexico. 1850. Syn., *Campylobotrys discolor*. B. M. t. 4530. Stove.

— *Ghiesbreghtii.* 2-4. Yellow, spotted with red. S. America. 1861. Syn., *Higginsia Ghiesbreghtii*. B. M. t. 5383.

— *variegata.* Leaves variegated with cream-yellow and red.

— *mexicana.* Yellow. June. Mexico. 1840. Syn., *Higginsia mexicana*.

— *pedunculata.* 2-3. Yellow, red. Jamaica.

— *refulgens.* 1-2. Pale-red. May. S. America. Syn., *Higginsia refrulgens*. B. M. t. 5346.

— *regalis.* 1. August. Mexico. 1859. Syn., *Higginsia regalis*. B. M. t. 5280.

Hoffmanseggia. (Named after J. C. Hoffmansegg, Nat. ord., *Leguminosæ*; Tribe, *Eucæsalpineæ*.)

Stove, yellow, pea-blossomed evergreens. Cut-

tings of young shoots in sand, in bottom-heat; also division of the plant in spring; peat and loam.

H. falca'ria. 2. July. Chili. 1806.

— *prostrata.* July. Lima.

Hog-nut. *Carya porc'na.*

Hog-plum. *Spo'ndias.*

Hohenbergia. (Named after M. Hohenberg, a German botanist. Nat. ord., *Bromeliaceæ*; Tribe, *Bromeliææ*.) See *Æchmea*.

H. calycula'ta. See *Æchmea calyculata*.

— *capita'ta.* See *Æchmea esudans*.

— *cele'stis.* See *Æchmea celestis*.

— *disticha'ntha.* See *Æchmea distichantha*.

— *erythrosta'chya.* See *Æchmea erythrosta'chya*.

— *esudans.* See *Æchmea esudans*.

— *ferrug'nea.* Now known as *Æchmea augusta*.

— *Legrellia'na.* See *Æchmea Legrelliana*.

— *nudicaul'is.* See *Æchmea nudicaulis*.

— *paniculi'gera.* See *Æchmea paniculigera*.

— *strobila'cea.* Now referred to *Ananas*.

Hoitzia. (From *hoitzil*, its Peruvian name. Nat. ord., *Polemoniaceæ*. Allied to *Polemonium*.) See *Læselia*,

H. cæru'lea. See *Læselia cærulea*.

— *cocc'nea.* Kn. and West. t. 99. See *Læselia coccinea*.

— *glandulo'sa.* See *Læselia glandulosa*.

— *mexica'na.* See *Læselia coccinea*.

Holarrhe'na. (From *holos*, entire, and *arrhen*, a male; referring to the anthers. Nat. ord., *Apocynaceæ*; Tribe, *Plumerieæ*. 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.

H. villo'sa. E. Ind. 1820.

Holbe'lia. (Named after F. L. Holboll, of the Royal Botanic Gardens, Copenhagen. Nat. ord., *Berberideæ*; Tribe, *Lardizabaleæ*. Allied to *Akebia*.)

Greenhouse or hardy climbers, from Nepal, valued for the fragrance of their 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 twine up the wires of a conservatory wall, in summer. *H. latifolia* is hardy against a wall.

H. acumina'ta. A synonym of *H. latifolia*.

— *angustifo'lia.* Purple. March.

— *latifolia.* 10. Green. March. 1845. B. R. 1846, t. 49.

Holcus. (From *holkos*, the Greek name of a grass. Nat. ord., *Gramineæ*.)

Hardy grass of no particular value.

H. lanat'us. †. Green. Britain.

— *albo-variegat'us.* Leaves with silvery-white, longitudinal stripes.

Holly. (*Ilex aquifolium*.) Of this hardy evergreen shrub there are numerous varieties of which the following are a selection:—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. When plants are thin vigorous pinching of the laterals should be resorted to.

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 in early May or 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, etc., 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. (*Althæa rosea.*) *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 saw-dust 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 saw-dust, 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.

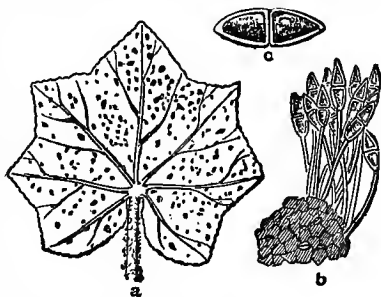
Varieties.—These are too numerous to note in detail, and many are very beautiful. Good results may be obtained from packets of mixed seedlings obtainable at any florists.

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 fungus. *Puccinia malvacearum*. For some years past the Hollyhocks and other *Malvaceæ* have been attacked and destroyed by this virulent pest. It is said to have been first detected in Chili, whence it has gradually spread to Australia, Britain, and the Continent.

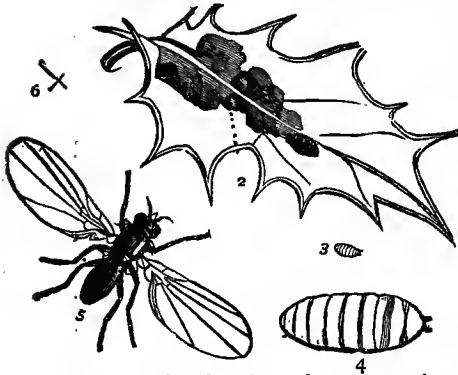
Our illustration represents an infected leaf of the hollyhock reduced (Fig. a). At Fig. b is shown a section through one of the fungus pustules, representing the



fungus in fruit bursting through the skin of the leaf. Fig. c represents one of the two-celled spores magnified 250 diameters. Whenever this *Puccinia* attacks a Hollyhock, whether it be a

young or an old plant, it is pretty certain to kill it; and wherever it appears the plants attacked should be pulled up and burnt to prevent the spreading of the *Puccinea*; half measures are not of the least use.

Holly-leaf fly. *Phytomyza ilicis*. The Holly oftentimes has its leaves much disfigured by brownish blister-like patches, as represented by Fig. 1; these are caused by the larva of a small two-



winged fly, bearing the name given above. The larva lives within the leaf, feeding upon the tissue immediately beneath the upper epidermis, its position often being made visible as a darker spot (Fig. 2). The larva is about $\frac{1}{2}$ of an inch in length, and of a pale greenish colour; it changes to a brown pupa within the leaf, and the perfect fly emerges in the course of a few days. Fig. 3 represents the pupa, natural size, and Fig. 4 the same, magnified. The perfect fly (Fig. 5, magnified, the crossed lines Fig. 6 showing the natural size) is of a greenish-brown colour, having transparent iridescent wings, with brown nervures. Beyond greatly disfiguring the leaves, we do not know that it does any material harm to the Holly; neither can we suggest a remedy, unless smoking the bushes be of any avail. For our illustration we are indebted to the "Gardeners' Chronicle."

Holmskiöldia. (Named after *T. Holmskiöld*, a Danish botanist. Nat. ord., *Verbenaceæ*; Tribe, *Viticeæ*. Syn., *Hastingia*.)

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, fibry loam.

H. sanguinea. 4. 1796. Shrub. B. R. t. 692. Syn., *Hastingia coccinea*.
— *scandens*. May. 1824. Climber. Syn., *Hastingia scandens*.

Ho'lothrix. (From *holos*, entire, and *thrix*, hair; small plants with minute leaves and flowers. Nat. ord., *Orchideæ*.)

Small terrestrial orchid. Warm stove; sphagnum, peat, and charcoal.

H. Lindleyana. White. S. Africa. G. C. 1888, iii. p. 364, figs. 55 and 56.

Homalanthus. (From *homalos*, smooth, and *anthos*, a flower. Nat. ord., *Euphorbiaceæ*; Tribe, *Crotoneæ*. Allied to *Hippomane*.)

Stove evergreen shrub. Cuttings of firm shoots in sand, in heat; loam and peat.

H. peltatus. Greenish. Philippines. 1866. Syn., *Dibrachion peltatum* and *Mappa fastuosa*.

— *polyandrum*. Lord Howe's Island. 1876. Syn., *Carumbium polyandrum*.

— *populifolia*. 6. White. August. N. Holland. 1825.

Homalium. (From *homalos*, smooth. Nat. ord., *Samydaceæ*. Syn., *Astranthus*.)

Greenhouse evergreen shrub; cuttings in sandy soil, under a glass; rich, light loam.

H. cochinchinensis. 4. White. July. China. 1823. Syn., *Astranthus cochinchinensis*. B. M. t. 2659.

Homalome'na. (From *homalos*, flat, and *mene*, moon; a translation of the native name of some species of this genus, the application is not apparent. Nat. ord., *Araceæ*. Syn., *Homalonema*.)

Stove evergreen dwarf shrubby plants. Seeds, divisions of the stem. Fibrous peat and a little sharp sand; sometimes broken charcoal and rotten leaves are mixed with the peat, but they do equally well without it. Moist atmosphere, shade.

H. cordata. White. June. China. 1820.

— *insignis*. Borneo. Ill. Hort. t. 560.

— *peltata*. 3. Spathe pinkish, white; spadix cream-coloured. Columbia. 1877.

— *picturata*. 3. Spathe green; spadix white; leaves with silvery central stripe. Columbia. 1873. Syn., *Curmeria picturata*.

— *Roezii*. 3. Spathe olive-brown outside, creamy within. Columbia. 1875. Syn., *Curmeria Roezii*.

— *rube'scens*. 2. Spathe purplish-red outside, inside and spadix whitish. India. 1870.

— *Siesmayeriana*. Borneo. 1884.

— *Wallisii*. Spathe reddish; spadix white; leaves variegated. Columbia. 1877. Syn., *Curmeria Wallisii*.

— *Wendlandii*. 4. Costa Rica.

Home'ria. (From *homereo*, to meet; the filaments are connected in a tube around the style. Nat. ord., *Irideæ*; Tribe, *Moraceæ*. Allied to *Ferraria*.)

Greenhouse bulbs, requiring the same treatment as *IXIA*. All from South Africa.

H. aurantiaca. 1. Orange-red, yellow. 1810. Syn., *Bobartia aurantiaca*, *Moraea aurantiaca*, and *M. collina*, var. *miniata* *varior.* B. M. t. 1612.

— *collina*. Reddish or yellow. 1793. Syn., *Moraea collina*, B. M. t. 1033, and *Sisyrrinchium elegans*. Red. Lil. t. 171.

— *miniata*. Reddish. Syn., *Moraea miniata*. Andr. Rep. t. 404.

- B. collina ochroleuca*. Yellowish. Syn., *Moræa collina*. B. M. t. 1103.
 — *elegantis*. 1. Yellow and dull blue or orange-brown. 1797. Syns., *H. spicata* and *Moræa spicata*. B. M. t. 1233.
 — *flexuosa*. See *Hexaglottis longifolia*.
 — *lineata*. 1. Red-yellow; leaves with a white midrib. 1825.

Homoia'nthus. (From *homoios*, like, and *anthos*, violet-colour. Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*.) See **Perezia**.

I. viscosus. B. M. t. 5401. See *Perezia viscosa*.

Honesty. *Luna'ria*.

Honey Bee. *A'pis mellif'ica*. See **Bee**.

Honey-berry. *Melico'cca*.

Honey-dew. See **Extravasated Sap**.

Honey-flower. *Melia'nthus*.

Honey-garlic. *Nectarosco'r'dum*.

Honey-locust. *Gledi'tschia tri-ca'nthos*.

Honeysuckle. *Loni'cera*.

Honeywort. *Ceri'nthe*.

Hoo'dia. (Commemorative. Nat. ord., *Asclepiadaceæ*; Tribe, *Stapelieæ*. Allied to *Boucerosia*.)

Greenhouse succulent perennials, with thick, cylindric, many-angled stems, armed with spines. The large and curious flowers are produced at the summit of the stems. Seeds, and cuttings of the young shoots, which should be cut off as close as possible to the stem, and placed in the sun for several days, to allow the wound to cicatrize; then insert in a soil composed of one-third brick-rubbish, one-third sand, and one-third rich loam, place in full sunlight, and keep very slightly damp. In summer, when growing freely they may be well watered; in winter, give only just enough water to prevent the soil going dust-dry. Summer temp., 70° to 90°; winter, 60° to 70°—always in full sunlight.

H. Bai'ni. 1. Buff, with purplish tint. July. S. Africa. 1877. B. M. t. 6348.
 — *Gordo'ni*. 1-1½. Buff and purplish. Summer. S. Africa. 1875. B. M. t. 6228.

Hoo'kera. (After *Sir W. J. Hooker*. Nat. ord., *Irideæ*.) A synonym of **Brodiaæa**.

H. corona'ria. A synonym of *Brodiaæa grandiflora*.
 — *puleh'la*, Salis. Parad. t. 117, is probably a *Brodiaæa*.

Hoop-petticoat. *Narci'ssus bulboco'divum*.

Hoop-ash. *Celtis crassifolia*.

Hop. *Hu'mulus*.

Hop-hornbeam. *Phologo'phora*.

Hopki'rkia. (After *Mr. Hopkirk*. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.) See **Salmea**.

H. scandens. See *Salmea scandens*.

Hoplophy'tum. (Nat. ord., *Bromeliaceæ*; Tribe, *Bromeliææ*.) See **Æchmea**.

H. calyculatum. See *Æchmea calyculata*.
 — *caele'ste*. See *Æchmea caelestis*.
 — *cœrule'scens*. See *Æchmea cœrulescens*.
 — *Linde'ni*. See *Æchmea Lindeni*.

Ho'rdeum. Barley. (The Latin name. Nat. ord., *Graminææ*.)

Hardy grasses, of greater use to the farmer than the gardener. *H. juba'tum* is ornamental. Propagated by seeds.

H. di'stichon. Long-eared barley.
 — *hexa'stichon*. Winter or Square Barley.
 — *juba'tum*. 2. N. America. 1782. Squirrel-tail Grass.
 — *vulga're*. Spring Barley.
 — *zeo'criton*. Sprat or Battledore Barley.

Horehound. *Marru'bium*.

Horke'lia. (Named after *J. Horke*, a German botanist. Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*. In the Genera Plantarum united to *Potentilla*.)

Hardy herbaceous perennials. Seeds and dividing the plant in spring; common garden-soil.

H. capita'ta. Gf. t. 711. See *H. fusca*.
 — *conge'sta*. 2. White. August. California. 1826. B. M. t. 2880.
 — *fusca*. White. Summer. California. B. M. t. 1997. Syn., *H. capitata*.
 — *Titi'ngi*. White. California. 1872.

Hormi'dium. (From *ormos*, a neck-lace; the flowers are sessile on the rachis. Nat. ord., *Orchideæ*; Tribe, *Epidendreæ*.)

H. bicornu'tum. 1½. White. April. Jamaica. Syn., *Epidendrum bicornutum*. B. M. t. 3352.
 — *pygma'um*. Green; lip white tipped with rose. January. Brazil. 1832. Syn., *Epidendrum pygmaeum*. B. M. t. 3252.
 — *Sophroni'tis*. Yellow, reddish-brown, green, May. Peru. 1867. Syn., *Epidendrum Sophroni'tis*. B. M. t. 6314.

Hormi'num. (From *hormao*, to excite; its medicinal qualities. Nat. ord., *Labiataæ*; Tribe, *Satureineæ*. 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. See *Lepechinia spicata*.
 — *pyrena'icum*. 1. Blue. June. Pyrenees. 1820. Syn., *Melissa pyrenaica*. Jacq. H. Vind. t. 183.

Hornema'nnia. (After *Dr. Horne-mann*, a German botanist. Nat. ord., *Scrophulariaceæ*; Tribe, *Gratiolææ*.) See **Vandellia**.

H. ova'ta. See *Vandellia crustacea*.
 — *visco'sa*. See *Vandellia hirsuta*.

Horn. See **Animal Matters**.

Hornbeam. *Carpinus*.

Horn-of-plenty. *Fed'ia*.

Horn-poppy. *Glaucium*.

Horse-chestnut. *Æsculus*.

Horse-radish. (*Cochlea'ria armo-ra'cia.*) Delights in a deep, rich soil, banks of a ditch, etc. 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 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.*

Horse-shoe Vetch. *Hippocere'pis.*

Horse-thistle. *Cni'cus.*

Horsfie'ldia. (Dedicated to *Dr. Horsfield*, a traveller and collector in Java. Nat. ord., *Araliaceæ.*)

Stove evergreen shrub, armed with spines. For cultivation, see ARALIA.

H. aculea'ta. Java. 1866.

Hort. A contraction of the Latin *hortensis*, appertaining to a garden. Often added to the name of a plant of garden origin.

Horte'nsia opuloi'des. See *Hydra'ngea horte'nsis.*

Hosa'ckia. (Named after *Dr. Hosa'ck*, an American botanist. Nat. ord., *Leguminosæ*; Tribe, *Lotææ.* Allied to *Ononis.*)

Hardy plants, with yellow flowers, except where otherwise mentioned. Suitable for front of borders and rock-works; seeds and division of the plants in spring; cuttings of perennials in summer, under a handlight.

ANNUALS

H. subpinna'ta. June. Chili. 1836.

— *Wrangelia'ta.* June. California. 1836.

HERBACEOUS PERENNIALS.

H. bi'color. $\frac{1}{2}$. Yellow and white. August. N. Amer. 1826. Syn., *Lotus pinnatus.* B. M. t. 2913.

— *crassifo'lia.* June. California. 1833. Syn.,

H. stolonife'ra.

— *decu'mbens* $\frac{3}{4}$. August. N. Amer. 1827.

— *parvifo'ra.* $\frac{1}{2}$. August. N. Amer. 1827.

— *Purshia'na.* $\frac{1}{2}$. July. N. Amer. 1824.

— *stolonife'ra.* B. M. t. 1977. See *H. crassifo'lia.*

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., *Verbenaceæ*; Tribe, *Viticiææ.*) A synonym of **Cornutia.**

H. coeru'lea. Jacq. H. Schœnb. t. 114. See

Cornutia punctata.

— *latifo'lia.* See *Cornutia pyramidata.*

— *longifo'lia.* A synonym of *Cornutia longifo'lia.*

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, leaves, 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 require 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 laying 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, etc., 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, etc. This will, in general, secure it from the danger of burning, whilst it will also add to the permanency of the bed.

For winter-forcng 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.

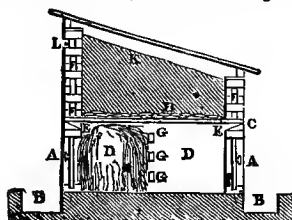
In making the hills of soil for the plants, in forcing melons or cucumbers, make a hollow in the centre of each light, half the depth of the bed. In the bottom of this, place nearly a barrowful of brick-bats, on this some half-rotten dung, and finally a flat square of turf, on which the hillock is placed. 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, etc., 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:

D D, 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

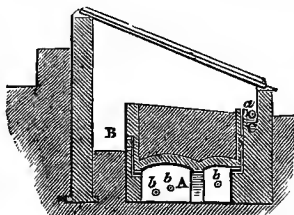


is further sustained by additions to the top of both as the mass settles. When this united heat becomes insufficient, the side first filled being cleared, the old manure must be mixed with some fresh, and replaced, this being repeated alternately to either heap as often as necessary. A A, are the doors, two of which are 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. B B, are small areas sunk in front, surrounded by a curb of wood; G G G, are bars passed longitudinally as a guide and support in packing the dung; C, represents 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, H, for the purpose of sustaining the soil, K, in the upper chamber; E E, represents the orifices, of which there are a series all round the pit, communicating with the flue F F F, 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; I, represents one of two plugs, 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, etc., are put in.

Hot-Water Beds.—If hot water be the source of heat, the following sketch 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, proportionate 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 section, in which *a* represents the flow-pipes, *b b b* the return-pipes in the chamber A. It is evident that, as the air in the chamber becomes heated, it will escape upwards by the opening C, and the cold air from the passage B 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 passage B, passes into the chamber A, 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 *a* is put half its diameter into the channel C, which, when filled with water (or so far as is necessary), gives off a vapour, exactly proportionate 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 passage B, 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. See *Astilbe.*

Hothouse. See *Stove.*

- Hottentot Bread.** *Diosco'rea.*
Hottentot Cherry. *Cassi'ne mauroce'nia.*
Hottentot Fig. *Mesembrya'nthemum e'dule.*

Hotto'nia. Water Violet. (Named after *P. Hutton*, a Dutch botanist. Nat. ord., *Primulaceæ*; Tribe, *Hottoniææ.*)

A hardy aquatic or marsh plant. Divisions in spring; ponds or ditches.

H. palu'stris. 1. Flesh. August. England. Eng. Bot. ed. 3, t. 1128.

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**.

Houllé'tia. (Named after *M. Houllé*, a French gardener. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Stanhopeææ*. 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. 2. Brown, yellow. June. Brazil. 1841.

— *chrysa'ntha.* Yellow, purple. Columbia. 1872.

— *Louia'na.* White, yellow. Columbia? 1874.

— *odorati'ssima.*

— *antioque'nsis.* Blood-purple, white; brown outside. Antioquia. 1870.

— *zanthi'na.* Orange, sulphur, white. 1884.

— *pi'cta.* Red-brown, yellow, blackish purple. Columbia. 1855.

— *tigri'na.* Yellow, crimson. New Grenada. 1852.

— *vitta'ta.* 1. Brown, yellow. June. Brazil. 1841.

— *Walli'sii.* Central America. 1868.

Hound's Tongue. *Cynoglo'ssum.*

Houseleek. *Sempervi'vum.*

Housto'nia. (Named in honour of *Dr. W. Houston*, an English botanist. Nat. ord., *Rubiaceæ*; Tribe, *Hedyotideææ.*)

Hardy herbaceous perennials, from North America. Division in spring; sandy loam and peat; beautiful for small beds and rock-works.

H. albifl'ora. White. June. 1823.

— *cæru'lea.* $\frac{1}{2}$. Blue. June. 1785.

— *a'lya.* White.

— *ciliola'ta.* $\frac{3}{4}$. White, blue. July. 1826. Syn., *H. serpyllifolia.*

— *cocci'nea.* Andr. Rep. t. 106. A synonym of *Bouvardia triphylla.*

— *longifolia.* $\frac{1}{2}$. Scarlet.

— *purpu'rea.* 1. Purple. July. 1800.

— *serpyllifolia.* B. M. t. 2882. See *H. ciliolata.*

— *tenella.* Purple. May. 1812.

Hou'ttea. (After *Louis Van Houtte*, a Belgian nurseryman. Nat. ord., *Gesneraceæ.*)

Stove shrubs. These grow best in a compost of peat and leaf-soil, mixed with a little sand. Propagated by tubers and cuttings.

H. Gardn'eri. 2. Red. July. Brazil. 1841.

Syns., *Gesnera Gardneri*, B. M. t. 4121, and *G. Gardneri*, Fl. Ser. t. 145.

— *pard'na.* $\frac{1}{2}$. Orange, red. Brazil. 1847.

Syn., *Gesnera pardina*. B. M. t. 4348.

Houttuyn'ia. (Named after *Dr. Houttuyn*, of Amsterdam. Nat. ord., *Piperaceæ*; Tribe, *Saurureæ.*)

Herbaceous greenhouse marsh-plant, from Japan. Seeds, or dividing the plant in spring; peat and loam, kept moist, and the plant a little shaded.

H. calif'ornica. White, red. Summer. California. Syn., *Anemiopsis californica*.

B. M. t. 5292.

— *corda'ta.* $\frac{1}{3}$. White. July to September. Japan and China. B. M. t. 2731. Syn., *H. fetida.*

Ho'vea. (Named after *A. P. Hove*, a Polish botanist. Nat. ord., *Leguminosææ*; Tribe, *Genistææ.* Syn., *Poiretia*. Allied to *Lalage*.)

Greenhouse evergreen shrubs, from Australia and Tasmania, 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 fibry loam, and pieces of charcoal and freestone, or small pieces of pounded bricks. In summer they should be a little shaded from bright sunshine.

H. lanceolata, purpurea, rosmarinifolia, and villosa are sometimes regarded as varieties of *H. longifolia.*

H. Celsii. 4. Blue. June. 1818. B. R. t. 280.

— *chorozemæfolia.* 2. March. Australia. 1824. Syn., *Plagiolobium chorozemæfolium.*

— *cri'spa.* 2. February. 1837.

— *ell'iptica.* 3. April. 1817.

— *ilicifolia.* 3. April. 1844. Syn., *Plagiolobium ilicifolium.*

— *lanco'la'ta.* 3. May. 1805. B. M. t. 1624.

— *latifolia.* 3. June. 1820. B. C. t. 30.

— *linea'ris.* 3. July. 1796.

— *longifolia.* 3. July. 1805. B. R. t. 614.

— *Manglé'sii.* 1. January. 1837.

— *mucono'ta.* 4. May. 1824.

— *panno'sa.* 3. May. 1824.

— *pu'ngens.* Blue. 1837. Flor. Mag. t. 238.

— *ma'jor.* Blue. May. 1841.

— *purpu'rea.* 3. June. 1820. B. C. t. 1459.

— *racemulo'sa.* 2. May. 1842.

— *rosmarinifolia.* 3. Blue. June. 1824.

— *sple'ndens.* 2. Blue. March. 1843. Part. Mag. x. p. 103.

— *trisp'erma.* Vermilion. May.

— *villosa.* 3. Lilac. April. 1829.

Hove'nia. (Named after *D. Hoven*, a Dutch senator. Nat. ord., *Rhamnaceææ*; Tribe, *Rhamnææ.* 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. dulcis* has stood against a wall in the Horticultural and Kew Gardens, with a little protection.

- H. acerba*. B. R. t. 501. A synonym of *H. dulcis*.
 — *dulcis*. 8. July. Japan, China, and Sub-tropical Himalayas. 1812.
 — *inaequalis*. A synonym of *H. dulcis*.

Howa'rdia. (In honour of J. C. Howard, author of a work on Cinchona barks. Nat. ord., *Rubiaceæ*; Tribe, *Condamineæ*.) See **Pogonopus**.

- H. caracase'nsis*. B. M. t. 5110. See *Pogonopus*.

Ho'wea. (From Lord Howe's Island, of which this genus is a native. Nat. ord., *Palmeæ*.)

Stove palms. For culture, see KENTIA.

- H. Belmoreana*. 30. Cream. Lord Howe's Island. 1872. B. M. t. 7018. Syns., *Grisebachia Belmoreana* and *Kentia Belmoreana*. Curly Palm.
 — *Forsteriana*. Lord Howe's Island. 1872. Syn., *Kentia Forsteriana*.

Hoy'a. Honey Plant. (Named after Mr. Hoy, once gardener at Sion House. Nat. ord., *Asclepiadaceæ*; Tribe, *Marsdenieæ*.)

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. a'tro-purpu'rea*. Brownish-purple. September. Java. 1848.
 — *australis*. White. October. Australia. 1820. B. M. t. 5820.
 — *bella*. 1½. White, purple. Taung Kola. 1847. B. M. t. 4402.
 — *campanulata*. B. M. t. 4545. See *Physostelma Wallichii*.
 — *carnosa*. 10. Pinkish-white. July. Asia. 1802. Syn., *Asclepias carnosa*, B. M. 788.
 — — *fo'lis-variegata*. 10. Pink. July.
 — *cinnamomifolia*. 10. Pale green. July. Java. 1847. B. M. t. 4347.
 — *coriacea*. 2. White, yellow. August. Manilla. 1838. B. M. t. 4518. Syns., *Centrostemma reflexum* and *Cyrtoceras reflexum*. *H. coriacea* of B. R. 1839, t. 18 is *H. multiflora*.
 — *coronaria*. Yellow. November. Java. 1856. B. M. t. 4969.
 — *crassifolia*. 10. China. 1817.
 — *Cumingiana*. Yellow. Malay Archipelago.
 — *fraternalis*. Yellowish-buff, with reddish-brown blotches. July. Java. 1851. B. M. t. 4684.
 — *fruticos*. 1848.
 — *fulca*. Brownish. Sylhet. 1837.
 — *globulosa*. Yellowish-white. April. India. 1880. Flor. Mag. n. ser. t. 406.
 — *gonolobodes*. Deep brown, paler outside. India? 1884.
 — *Griffithii*. Pale rose-red. July. Khasia. 1885. B. M. t. 6877.
 — *imperialis*. 20. Scarlet. June. Borneo. 1847.
 — — *Rau'schii*. Red. 1855. Gfl. t. 132.
 — *lacunosa*. 3. Greenish-yellow. March. Java. 1854. B. M. t. 4826.
 — — *pallidifolia*. White; shaggy. Java. 1861. B. M. t. 5272.
 — *lasiantha*. Yellow. July. Borneo. 1858.

- B. M. t. 5081. Syn., *Plocostemma lasiantha*.

- H. linearis*. White. October. Himalayas. B. M. t. 6682.
 — — *sikkime'nsis*. White, yellowish. Autumn. Sikkim. 1833. B. M. t. 6682.
 — *longifolia Shepherdii*. Pinkish. India. 1861. G. C. 1835, xxiv. p. 617.
 — *multiflora*. White, yellow. July. Borneo. Syns. *H. coriacea* of B. R. 1839, t. 18; *Centrostemma multiflorum*, B. M. t. 5173.
 — *ovalifolia*. Pinkish-yellow. July. E. Ind. 1840.
 — *pa'llida*. 6. White. July. E. Ind. 1815. B. M. t. 951.
 — *parasitica*. Yellow. E. Ind.
 — *picata*, vars. *argentea* and *aurea* are forms of *H. variegata*.
 — *Po'ttisi*. 10. Yellow. India. 1824.
 — *purpureo-fulca*. Brown, purple. September. Java. 1849. B. M. t. 4520.
 — *Shepherdii*. See *H. longifolia*, var. *Shepherdii*.
 — *trine'nsis*. 10. Yellow. July. China. 1824.
 — *variegata*. Pink. Japan. 1846. Edges of leaves often pinkish. Fl. Ser. t. 838. Syns., *H. picta*, vars. *argentea* and *aurea*.

Hudsonia. (Named after W. Hudson, F. R. S., author of the *Flora Anglica*. Nat. ord., *Cistineæ*. 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. ericoides*. 1. June. 1805. B. C. t. 192.
 — *Nuttallii*. 1. July.
 — *tomentosa*. 1. May. 1826.

Hugel'ia. (Named after Baron Hugel, of Vienna. Nat. ord., *Polemoniaceæ*.) See **Gilia**.

- H. densiflora*. See *Gilia densiflora*.
 — *elongata*. See *Gilia densiflora*.
 — *lu'tea*. See *Gilia floccosa*.
 — *virgata*. See *Gilia virgata*.

Hue'rnia. (Named after J. Huer-nius, a collector of Cape plants. Nat. ord., *Asclepiadaceæ*; Tribe, *Stapelieæ*. Allied to *Stapelia*.)

Greenhouse evergreen succulents, from South Africa. 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. barbata*. ½. White-striped. August. 1795. Syn., *Stapelia barbata*. B. M. t. 2401.
 — *breviro'stris*. ½. Yellowish, blood-red. S. Africa. 1877. B. M. t. 6379.
 — *clavigera*. ½. Yellow-striped. September. 1795. Syn., *Stapelia campanulata*, B. M. t. 1661, not 1293.
 — *crispa*. ½. Perhaps a monstrous form of *H. barbata*.
 — *humilis*. ½. Yellow-striped. September. 1795. Syn., *Stapelia humilis*.
 — *hy'stris*. ½. Buff, crimson. Summer. S. Africa. 1868. Syn., *Stapelia hystrix*.
 — *lentiginosa*. ½. Yellow-striped. 1795. B. M. t. 506.

- H. ocella'ta*. † Yellow-striped. Syn., *Stapelia ocellata*.
 — *ocula'ta*. Violet, purple, white. Damara Land. 1880. B. M. t. 6658.
 — *reticula'ta*. † Pink-striped. August. 1793. Syn., *Stapelia reticulata*. B. M. t. 1662.
 — *tuba'ta*. Flesh-colour, spotted with pink. Syn., *Stapelia tubata*, B. C. t. 225.
 — *venu'sta*. † Yellow-striped. June. 1795. Syn., *Stapelia venusta*.

Huernio'psis. (From *Huernia*, and *opsis*, like; the flowers resemble those of *Huernia*. Nat. ord., *Asclepiadaceæ*; Tribe, *Stapelieæ*. Allied to *Stapelia*.)

A very dwarf greenhouse succulent. For cultivation, see **STAPELIA**.

- H. deci'piens*. †. Crimson-brown, yellow. Diamond Fields, S. Africa. 1877.

Huma'ta. (Probably from *humatus*, interred; the stems being deep in the earth. Nat. ord., *Filices*.) Now united with **Davallia**.

Stove ferns, with brownish-yellow spores. Division; peat and loam. See **FERNS**.

- H. angusta'ta*. April. Singapore.
 — *heterophylla*. April. Samaria.
 — *pectina'ta*. April. Isle of Luzon.
 — *peda'ta*. May. E. Ind.
 — *Tyermanii*. W. Coast of Africa. 1871. Syn., *Davallia Tyermanii*.

Humble Bee. *Bo'mbus terre'stris*. This insect is of much use in fertilizing certain leguminous plants (especially Red Clover), by carrying the pollen from one flower to the stigma of another, with the consequent production of seeds. It is attracted to the flowers by the nectar situated near the base of the petals to obtain which it occasionally bores through the calyx, but the damage it does is small in comparison with the benefit it more frequently renders.

Humble Plant. *Mimo'sa pu'dica*.

Hu'mea. (Named after *Lady Hume*. Nat. ord., *Compositæ*; Tribe, *Inuloidææ*.)

Greenhouse biennial. Sow in heat, in spring; prick out and grow under glass; place out of doors in the heat of the summer; hough 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*. 6. Red. July. N.S. Wales. 1800. Syn., *Calomeria amaranthoides*.

Hu'mulus. The Hop. (From *humus*, the ground; creeping on the ground if not supported. Nat. ord., *Cannabinaceæ*.)

Hardy twiners. *H. japo'nicus* is an annual; *H. lupu'lus*, a perennial. Seeds and divisions in spring; deep, loamy soil. It is useful for summer shade, as it grows very quick.

- H. japo'nicus*. Yellowish. Japan. 1885. G. C. 1885, xxiv, p. 716.
 — *lupu'lus*. 15. Yellow. July. Britain. Eng. Bot. ed. 3, t. 1284. Common hop.
 — — *variega'tus*. 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 fertilizing 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, absorbed either in solution with the earth's moisture, or in gaseous form by the roots.

Hungarian Lotus. *Nympha'æa thermalis*.

Hunnema'nnia. (Named after *J. Hunnemann*, a botanical agent. Nat. ord., *Papaveraceæ*; Tribe, *Hunnemannieæ*. Very closely allied to *Eschscholtzia*.)

Half-hardy herbaceous perennial. Seeds in spring; rich soil; will bloom the second year with greenhouse treatment, or may be kept over the winter in a dry, cold pit.

- H. fumaricaefolia*. 2. Yellow. Mexico. 1827. B. M. t. 3061.

Huntleya. (Named after the *Rev. Mr. Huntley*, a zealous collector of plants. Nat. ord., *Orchideæ*; Tribe, *Vaniliceæ-Cyrtopodieæ*.) Now regarded as a section of **Zygopetalum**, which see.

- H. melea'gris*. See *Batemannia melea'gris*.

Hu'ra. Sand-box tree. (The native name. Nat. ord., *Euphorbiaceæ*. 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.

- H. cre'pitans*. 12. S. Amer. 1733.
 — *stre'pens*. 12. S. Amer.

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**.

Hurtle-berry. The fruit of *Vaccinium Vitis-Idæa*.

Husky. The dung for a hotbed, when too dry, is said to be husky.

Hutchinsia. (Named after *Miss Hutchins*, an accomplished Irish cryptogamist. Nat. ord., *Cruciferae*; Tribe, *Thlaspidaceae*. Allied to *Iberis* and *Teesdalia*.)

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. petraea. $\frac{1}{2}$. White. April. England. Eng. Bot. ed. 3, t. 151.
— *procumbens*. $\frac{1}{2}$. White. May. South Europe. 1823. Now referred to *Capsella*.

HARDY HERBACEOUS.

H. alpinna. $\frac{1}{2}$. White. May. South Europe. 1775.
— *brevistyla*. White. May. Syria. 1825.
— *calycina*. See *Smelowskia*.
— *cepefolia*. See *Thlaspi cepefolium*.
— *pumila*. See *Thlaspi pumilum*.
— *rotundifolia*. See *Thlaspi rotundifolium*.
— *stylisa*. $\frac{1}{2}$. White, pink. June. Caucasus. 1825.

Hyacinthus. The Hyacinth. (In mythology, a beautiful boy, who, after being killed, was transformed into this flower. Nat. ord., *Liliaceae*; Tribe, *Scilleae*.)

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 a month 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 full 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 prevents putridity in the water.

H. amythistinus. $\frac{1}{2}$. Blue. April. South Europe. 1759. B. M. t. 2425.
— *azureus*. Deep blue. February. Asia Minor. 1856. B. M. t. 6822.
— *bruma'lis*. $\frac{1}{2}$. Various. February.
— *caudicans*. See *Galtonia candicans*.
— *corymbosus*. $\frac{1}{2}$. Rosy lilac. Autumn. S. Africa. 1793. Syn., *Massonia corymbosa*. B. M. t. 991.
— *fastigiatus*. Bright lilac. March. Corsica and Sardinia. B. M. t. 6663.
— *lineatus*. $\frac{1}{2}$. Blue. Asia Minor. Gf. 1887, p. 446, fig. 114.
— *orientalis*. $\frac{1}{2}$. Blue. March. Syria. 1596. B. M. t. 937.
— *albulus*. $\frac{1}{2}$. White. March. 1596. Roman Hyacinth.
— *flavus*. $\frac{1}{2}$. Yellow. March. 1596.
— *multiflex*. $\frac{1}{2}$. Variegated. April. 1596.
— *provincialis*. A slender variety. S. France to Italy.
— *ruber*. $\frac{1}{2}$. Red. March. 1596.
— *semitenus*. $\frac{1}{2}$. Variegated. March. 1596.
— *princeps*. See *Galtonia princeps*.
— *romanus*. $\frac{1}{2}$. White. May. Italy. B. M. t. 939. Syns., *Bellevalia operculata* and *Scilla romana*.
— *spicatus*. $\frac{1}{2}$. Blush. February. Zante. 1826.
— *syriacus*. $\frac{1}{2}$. White. Syria. 1840. Syn., *Bellevalia syriaca*.
— *viridis*. Green. August. Cape of Good Hope. 1774.

Hybanthera. (From *hybos*, a curve, and *anthera*, an anther, or pollen-bag; referring to the curve in the gouty anthers. Nat. ord., *Asclepiadaceae*.) See **Tylophora**.

H. coraisfolia. See *Tylophora calcarata*.

Hybernia defolia'ria. The Mottled Under Moth. The caterpillars of this moth are very destructive to many fruit trees, especially cherries, by eating the leaves and fruit, even when the latter is unripe. It belongs to the group known as "loopers," and is reddish-brown above edged with a black wavy line, bright yellow at the sides shading to greenish on the under surface. The moths appear about October. The males are winged; the front wings are brownish with two darker bands and a dark spot between them; the hind wings are paler. The wings of the females are very small, and quite insufficient to enable the insect to fly. Such being the case, they can be prevented from ascending the tree by placing round it a band of sticky matter. As the caterpillars go to the ground to enter the chrysalis state, the latter can be destroyed by burying the surface soil in autumn, before the moths emerge.

Hybernia brumata. See *Cheimatobia brumata*.

Hybrid. (From *hubris*, violence.) A plant produced from seed, which has been impregnated with the pollen of another species, variety or occasionally genus.

Hybridizing. This may be considered as one of the higher branches of the art of Gardening, since by its practice the gardener is able to produce a new and distinct organism. In the mere mechanical operation of hybridizing, or cross breeding, there is no great amount of skill required, but in order to insure a greater probability of success, there is often required an amount of knowledge, of a nature which every gardener does not possess, and perhaps has no direct means of obtaining.

The first thing to do is to acquire as thorough a knowledge of flower structure as possible. The more thorough that knowledge is, the better; for although a general knowledge is sufficient to work upon, it should be remembered that he who has the deeper knowledge is the most likely to obtain the best results.

The parts of a flower necessary to produce seed are the *pistil*, and *stamens*. The *pistil* is the organ that occupies the centre of a flower, and generally consists of three parts, viz. a swollen part at the base, called the *ovary*; this part contains the *ovules* or unfertilized seeds. From the top or side of the ovary arises the *style*; this is usually elongated, slender, and thread-like, but sometimes short and stout, or absent. At the apex of the style is placed the *stigma*, which is sometimes simple, and sometimes lobed or branched. Around the pistil, which is the female organ of the flower, are arranged the *stamens*, which are the male organs. A stamen usually consists of two parts—the *filament*, which is generally slender and thread-like, and the *anther*, which is the oblong body terminating the filament. The anthers contain a fine powder called *pollen*, which they discharge when mature. Sometimes the filament is extremely short or altogether absent, when the anther is generally seated upon the corolla, as in the primrose. Fertilization is effected by the application of the pollen to the stigma, and hybridizing is the fertilization of one species by pollen taken from another species. When pollen is placed or falls upon the stigma, each pollen-grain sends out a slender tube, which grows down through the style into the interior of the ovary, and applies itself to the mouth of an ovule and fertilizes it. Without this no seed would result.

In many genera, such as *Begonia*, *Erica*, *Pelargonium*, etc., hybridization is very easily effected, and needs scarcely any more knowledge than that above given. But there are other genera which

are not so easy to hybridize, and when hybridizing between different genera is tried, the difficulty increases. In some cases the failures (for, in spite of the many successes in hybridizing, failures might be counted by the score) are perhaps due to some constitutional or physical cause, which renders hybridizing between the plants selected impossible; but in some, perhaps many cases, it is probable that the failure is due to a want of knowledge on the part of the operator.

In hybridizing species belonging to the same genus, the operator should first observe if, when the pollen of the one species is discharged from the anthers, the stigma of the other species is in a fit condition to receive it, for if this be not the case, it is not of much use to attempt to hybridize, as in all probability failure would be the result.

The most successful mode of obtaining good and very distinct varieties is to employ the pollen from a male flower grown on another plant than that bearing the female parent. To avoid previous and undesired impregnation, the anthers in the female parent, if they are produced in the same flower with the pistils, must be removed by a sharp-pointed pair of scissors, and the flower inclosed in a gauze bag, to exclude insects, until the desired pollen is ripe. Another effectual mode of avoiding undesired impregnation is bringing the female parent into flower a little earlier than its congeners, and removing the anthers as above described: the stigma will remain a long time vigorous if unimpregnated.

In most plants the stamens and pistil exist in the same flower; in others they are separate in different flowers upon the same plant, and in others still one plant will have all staminate flowers, and another all pistillate ones. In the case of those plants which have the stamens and pistil in the same flower, or hermaphrodite flowers as they are called, some ripen their pollen at the same time that the stigma of the same flower is fully developed and ready to receive it. If both plants selected to hybridize do this, hybridization will probably not be difficult to effect. But in other plants the anthers discharge their pollen before the stigma of the same flower is ready to receive it, or the stigma is perfected and its functions ceased before the anthers of the same flower are ready to discharge their pollen. In such cases it is necessary to observe if the stigma is properly developed before applying the pollen to it; this may often be known by the

appearance of a secretion upon its surface; or if the stigma is lobed or branched, it is most fully developed when these are most widely expanded. The nectaries also secrete honey more copiously at the times when the stigma and anthers are most mature. Another fact that should be taken into account when hybridizing, is that some flowers in a natural state are only fertilized by particular insects, which only fly during certain hours of the day; and in accordance with this, the flowers only give out their perfume during those hours, some in the morning, some in the afternoon, others in the evening or at night, and there can be very little doubt that if plants to be hybridized are acted upon during the time when their perfume is greatest, fertilization will be more likely to result than if the pollen be applied at a time when they are not giving out an odour.

Some plants, such as those of the genus *Primula*, many *Rubiaceæ*, etc., have the anthers and stigmas placed at different heights in the flowers of different plants of the same species. In *Primula* the flowers of some plants have the anthers seated at the mouth of the tube of the corolla, the styles of these flowers being short, so that the stigma only reaches to about halfway up the corolla tube (commonly called thrum-eyed flowers); in others the anthers are placed in the middle of the tube, and in these the style is long, so that the stigma is nearly on a level with the mouth of the corolla tube (pin-eyed flowers). These two forms of flower are now spoken of as short-styled and long-styled flowers, and in hybridizing or raising improved varieties of this or any other genus that has long and short styled flowers—a character that should always be looked out for by hybridizers—the operator should take the pollen from a short-styled flower if he wishes to fertilize a long-styled flower, or from a long-styled flower if he wishes to fertilize a short-styled flower, as being likely to give better results than if two long-styled or two short-styled plants are intercrossed.

Plants belonging to different genera are more difficult to hybridize than those belonging to the same genus. And when it is desired to intercross two genera in order to improve the habit of flowers, care should be taken to select genera that are as nearly related to each other as possible, and in fertilizing, all the points above alluded to should be taken into consideration.

In all cases when hybridizing, the flower to be fertilized should have its

anthers cut out before they discharge their pollen, in order to prevent any chance of self-fertilization; and the flower should be marked by loosely attaching a label, on which the name of the pollen-producing plant wherewith it was fertilized, and other particulars, should be written. When possible, also, it should be covered over with a gauze net for a time, so as to prevent the chance of insects bringing to it pollen from another flower of the same species, in which case the probabilities of obtaining a hybrid from the seed would be very small, as the pollen of the same species is generally more potent than that of another species, even though it is applied after the pollen of another species has been upon the stigma for some little time, providing the stigma is still receptive.

The conditions of temperature, light, shade, and water should also be carefully attended to; these, of course, would be very different for different plants, but in all cases the nearer the natural conditions under which the hybridized plant flowers and perfects its seed in its native habitat are imitated, the greater will be the chance of success. With some plants a little more direct sunlight during the development of the seed would probably be very beneficial.

Hydra'ngæa. (From *hydor*, water, and *aggeion*, a vessel; referring to the cup-form of the capsule, or seed-vessel. Nat. ord., *Saxifragæ*; Tribe, *Hydrangeæ*.)

Deciduous shrubs. Propagated by division of the roots, cuttings of the ripened shoots, and flourishing best in moist, sheltered places. *Hortensis*, 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. acuminata*. Rose. Japan. 1874. Rev. Hort. 1874, p. 91.
 — *Belzoni*. 3. Blue. Japan.
 — *cyane*. Pink, white. Bootan.
 — *hortensis*. 2-3. White to pink. April to September. China. 1790. Syn., *Hortensia opuloides*.
 — — *cærulea*. 3. Blue, white. June. Isle of Nipon. 1844. B. M. t. 4253.
 — — *japonica*. 3. Blue, white. Japan. 1843. Syn., *H. japonica*. B. R. 1844, t. 61.
 — — *macrosepala*. White. Gf. t. 520.
 — — *Ota'ksa*. 2½. Flesh-coloured. Japan. 1868. Rev. Hort. 1868, p. 450.
 — — *roseo-alba*. Rosy. Fl. Ser. t. 1649-50.
 — — *stellata*. 2. Pink. July. Japan. 1868. Syn., *H. stellata*. Other varieties are:—*Lindleyi*, *stellata rubra-plena*, *tricolor*, *variegata*, etc. See Gf. 1866, p. 289.
 — *involuta*. 1½. White and bluish. Nepaul. 1876. Fl. Ser. t. 187.
 — *japonica*. See *H. hortensis*, var. *japonica*.
 — *Ota'ksa*. Rev. Hort. 1868, p. 450. See *H. hortensis*, var. *Ota'ksa*.
 — *paniculata floribunda*. White. Gf. t. 530.
 — — *grandiflora*. White. Japan. 1874. Fl. Ser. t. 1665.
 — *petiolaris*. White. April. Japan. 1878. B. M. t. 6788.
 — *pubescens*. White. Japan. G. C. 1884, xxii. p. 617.
 — *ramulus-coccinea*. Rosy. Young shoots plum-red. Garden variety. 1890.
 — *scandens*. White. Japan. 1879.
 — *stellata*. See *H. hortensis*, var. *stellata*.
 — *Thumborgii*. Blue or rose. Japan. 1870. G. C. 1879, p. 1699.

HARDY.

- H. arborescens*. 6. White. July. Virginia. 1786.
 — — *discolor*. 6. White, green. August. N. Amer.
 — *aspera*. White. Pekin. 1889. It is doubtful whether this is the true *H. aspera* of Don.
 — *cordata*. White. July. Carolina. 1806.
 — *heteromalla*. 4. White. Nepaul. 1821.
 — *hortensis*. This is rather tender. For description see Greenhouse section above.
 — *nivea*. Wata. Dendr. t. 43. See *H. radiata*.
 — *quercifolia*. 4. White. July. Florida. 1803. B. M. t. 975.
 — *radiata*. 5. White. August. Carolina. 1786. Syn., *H. nivea*.
 — — *glabella*. 5. White, green. July.

Hydrastis. Yellow Root. (From *hydor*, water; referring to the marshy places where it grows. Nat. ord., *Ranunculaceæ*; Tribe, *Helleboreæ*. Allied to *Helleborus* and *Caltha*.)

Hardy herbaceous perennial. Division of the root; loam and peat; moist situation.

- H. canadensis*. ½. Green. May. N. Amer. 1759. B. M. t. 3019 (flower), and 3232 (fruit).

Hydrocotyle. (From *hydor*, water, and *cotyle*, a flat-cup; the peltate leaves

of many species being somewhat cup-shaped. Nat. ord., *Umbelliferae*; Tribe, *Hydrocotyleæ*.)

Dwarf marsh perennials, with round or kidney-shaped leaves. Seeds; cuttings or layers. Wet boggy soil. There are several species in Botanic Gardens.

- H. asiatica*. ½. Pinkish. Asia and America. 1809. Wight Ic. t. 565.

Hydroglossum. A synonym of **Lygodictyon**.

Hydrolea. (From *hydor*, water, and *elava*, oil; referring to the marshy habitat and oily feel of the leaves. Nat. ord., *Hydrophyllaceæ*; Tribe, *Hydroleæ*.)

Greenhouse herbaceous plants. Divisions, cuttings, and seeds; *spinosa* is a small aquatic, growing best in peat and loam; *quadrivalvis* is also found in boggy places.

- H. quadrivalvis*. Pale blue. July. Carolina. 1824. Syn., *H. caroliniana*.

- *spinosa*. 1. Blue. S. Amer. 1791. B. R. t. 566.

Hydromestus. (From *hydor*, water, and *mestos*, half; referring to the plant living in water during the rainy season. Nat. ord., *Acanthaceæ*.)

Stove evergreen shrubs. Cuttings of young shoots any time in spring and summer, in sandy soil, and bottom-heat; peat and loam. Summer temp., 60° to 80°; winter, 48° to 55°.

- H. maculatus*. 2. Yellow. May. Mexico. 1842. B. M. t. 4556. Now known as *Aphelandra Hydromestus*.

Hydropeitis. (From *hydor*, water, and *pelle*, a shield; referring to the floating shield-like leaves. Nat. ord., *Nymphaeaceæ*; Tribe, *Cabombeeæ*.) See **Brasenia**.

- H. purpurea*. B. M. t. 1147. See *Brasenia peltata*.

Hydrophyllum. Water-leaf. (From *hydor*, water, and *phyllon*, a leaf. Nat. ord., *Hydrophyllaceæ*.)

Hardy herbaceous perennials, from North America. Divisions and suckers; rich loam and peat; in marshy situations.

- H. appendiculatum*. ¾. Blue. May. 1812. Syn., *Nemophila paniculata*.

- *canadense*. ¾. White. May. 1759. B. R. t. 242.

- *magellanicum*. See *Phacelia circinata*.

- *virginicum*. ¾. Blue. June. 1739. B. R. t. 331.

Hydrosme. (From *hydra*, a water serpent, and *osme*, smell; referring to the odour of the flower at the time of fecundation. Nat. ord., *Aroideæ*.)

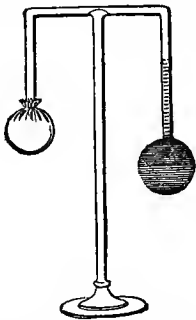
Stove tuberous-rooted aroids.

- H. Leopoldiana*. 2. Spathe velvety purple-brown. Congo. G. C. 1887, i. p. 642.

- *Ten'szii*. W. Tropical Africa. Gf. t. 1142.

Hydrotaenia. (From *hydor*, water, and *tainia*, a band; referring to a triangular band in the flower secreting a liquid. Nat. ord., *Irideæ*; Tribe, *Morvææ*.) See **Tigridia**.

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 deposite. 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, etc., is similarly caused. The thermometer is the best instrument for showing the temperature; and by taking two similar ones, keeping one dry and the other, covered with a fold of muslin or silk, 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* is the best instrument. It is represented in the following figure. 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 forma-

tion 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 1,000 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 *hygros*, moist, and *phileo*, to love; referring to the habitat of the plant. Nat. ord., *Acanthaceæ*; Tribe, *Ruellieæ*. Syn., *Asteracantha*.)

Stove evergreens. Cuttings of young shoots in sandy soil, in heat; peat and loam. Summer temp., 60° to 80°; winter, 45° to 55°.

H. longifolia. Purple. June. India. 1821. Syn., *Asteracantha longifolia*, Wight Ic. t. 449 and *Barleria longifolia*.

— *ringens*. 1. 1820.

— *salicifolia*. Violet. June. India. 1822. Wight Ic. t. 1490.

Hyle'sinus pini'perda. A species of beetle, which preys upon the pith of young shoots of sickly or recently-felled Scotch and spruce-firs. It is not very injurious in this country.

Hylonom'e. (Derivation not stated. Nat. ord., *Liliaceæ*—*Asparageæ*. Allied to *Polygonatum*.) Now known as **Behnia**.

A greenhouse climber with the habit of one of the *Myrsiphyllum* group of *Asparagus*; remarkable for the beautiful netted venation of the leaves when dried. Seeds, suckers. Rich light loam. Summer temp., 60° to 80°; winter, 55° to 60°.

H. reticulata. White. S. Africa. 1867. Syn., *Dictyopsis Thunbergii*.

Hyloto'nia ro'sæ. 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 insects shaken down upon it.

Hymenæ'a. Locust-tree. (From *Hymen*, the god of marriage; referring to the leaflets being joined. Nat. ord., *Leguminosæ*; Tribe, *Amherstieæ*. Allied to *Saraca*.)

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 80°.

H. Candolleana. 80. White. Acapulco. 1824. — *Cowbaril*. 40. Yellow, purple. W. Ind. 1688. — *verrucosa*. See *Trachylobium verrucosum*.

Hymena'ndra. (From *hymen*, a membrane, and *aner*, a man; the anthers being connected by a membrane. Nat. ord., *Myrsinaceæ*.)

Stove evergreen shrub. For cultivation, see *ARDISIA*, to which it is allied.

H. Wall'ichii. 3. Greenish. E. Indies.

Hymena'nthera. (From *hymen*, a membrane, and *anthera*, an anther, or pollen-bag. Nat. ord., *Violaceæ*; Tribe, *Alsodeieæ*. Allied to *Alsodeia*.)

Greenhouse evergreen shrub. 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 fibry loam. Winter temp., 40° to 45°.

H. crassifolia. 2-4. Berries white. New Zealand. 1875. G. C. 1875, iii. p. 237.

— *dentala*. 6. Yellow. May. New S. Wales. 1824. B. M. t. 3163.

Hymenoca'llis. (From *hymen*, a membrane, and *kalos*, beautiful; referring to the membranous cup inside the flower. Nat. ord., *Amaryllideæ*; Tribe, *Amarylleæ*. Allied to *Pancreatum*.)

They have all white flowers, and much resemble *Pancreatiums*. Their seeds differ in being large and green, the seeds of *Pancreatum* having a black, brittle skin. Offsets; rich, sandy loam. See *AMARYLLIS*.

HARDY BULBS.

H. adnata. May. S. Amer. 1758.

— *acutifolia*. May. Mexico. 1824.

— *lacera*. 1-1½. Greenish. S. United States. Syn., *H. rotata* and *Pancreatum rotatum*. B. M. t. 827.

— *littoralis*. May. S. Amer. 1758. Syn., *Pancreatum littorale*. Jacq. H. Vind. iii. t. 75.

— *Dryandra*. 2. May.

— *Staple'sii*. June. Mexico. 1826.

— *rotata*. See *H. lacera*.

GREENHOUSE BULBS.

H. bistubata. 1½. April. Mexico. 1844.

— *caroliniana*. 2. June. Carolina. 1759.

— *expansa*. 2. Greenish. July. W. Indies. Syn., *Pancreatum expansum*. B. M. t. 1941.

— *galvestoniensis*. 1. White. Texas. Syn., *Choretis galvestoniensis*.

— *glauca*. 1. White. July. Mexico. 1837. Syn., *Choretis glauca*.

— *humilis*. Greenish. Florida. G. and F. 1888, i. p. 114, fig. 23.

— *Palmeri*. White. Florida. G. and F. 1888, i. p. 138, fig. 25.

— *panamensis*. May. Panama. 1844.

— *Skimmeriana*. March. Guatemala. 1843.

STOVE BULBS.

H. amœna. 1. August. Guiana. 1790.

— *Andrea'na*. 1. Green, white. Ecuador. 1884. Syn., *Ismene Andrea'na*.

— *angustata*. 1½. July. S. Amer.

— *Borskia'na*. 2½. White. La Guayra. 1845.

— *caribœa*. 1½. July. W. Ind. 1730. Syn., *Pancreatum amœnum* and *P. caribœum*. B. M. t. 826.

— *caymanensis*. August. Cayman. 1823.

— *crassifolia*. 1½. July. S. Amer. Syn., *Pancreatum crassifolium*, Ref. Bot. t. 331.

— *deflexa*. 1. Peru. 1839. Syn., *Ismene deflexa*.

- H. eucharidifolia*. $\frac{3}{4}$. Green. May. Tropical America. 1834.
 — *expansa*. 2. May. W. Ind. 1818. Syn., *Pancreatium expansum*, B. M. t. 1941.
 — *fragrans*. 1. July. W. Ind.
 — *guianensis*. See *H. tubiflora*.
 — *Harrisiana*. June. Mexico. 1838. B. M. t. 6502.
 — *Macleana*. 1. Greenish. Andes of Peru. 1834. Syn., *Ismene Macleana*, B. M. t. 3675.
 — *macrostephana*. 2. White. Spring. 1879. B. M. t. 6436.
 — *mexicana*. 1. August. Mexico. 1732.
 — *ovata*. 1. Greenish. W. Indies. Syn., *Pancreatium ovatum*, B. R. t. 43.
 — — *ovalifolia*. June. S. Amer. 1820. B. C. t. 510.
 — *patens*. 2. July. W. Ind. 1822.
 — *pedalis*. May. Brazil. 1816. Syn., *Pancreatium pedale*, B. C. t. 809.
 — *pedialis*. 3. August. Brazil. 1820.
 — *quitoeensis*. 1. White, green. June. Mountains of Ecuador. Syn., *Ismene tenuifolia*, B. M. t. 6397.
 — *speciosa*. $\frac{1}{2}$. July. W. Ind. 1759. Syn., *Pancreatium speciosum*, B. M. t. 1453.
 — *tenuiflora*. August.
 — *tubiflora*. 1. White. Tropical America. Syn., *H. guianensis* and *Pancreatium guianensis*, B. R. t. 265.
 — *undulata*. 1. July. S. Amer.

Hymenodictyon. (From *hymen*, a membrane, and *diktton*, a net; the envelope of the seeds being a net-like membrane. Nat. ord., *Rubiaceae*; Tribe, *Cinchonae*. Allied to *Bouvardia*.)

Stove evergreen trees, from the East Indies, with greenish-yellow flowers. For culture, see CINCHONA.

- H. excelsum*. 30. July. 1820. Wight Ic. t. 79.
 — *thyrsiflorum*. 15. June. Bengal. 1819.

Hymenodium. (From *hymen*, a membrane; alluding to the membranous fronds. Nat. ord., *Filices* — *Polypodiaceae*.)

Stove fern. See FERNS.

- H. crinitum*. 1. W. Indies.

Hymenolepis. (From *hymen*, a membrane, and *lepis*, a scale; alluding to the scales of the sporangiferous receptacles. Nat. ord., *Filices* — *Polypodiaceae*.)

Stove fern. See FERNS.

- H. spicata*. Malay Archipelago.

Hymenophyllum. Filmy-leaf Fern. (From *hymen*, a membrane, and *phylon*, a leaf. Nat. ord., *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. tumbridgeense. $\frac{1}{2}$. Brown. June. Britain.
 — *Wilsoni*. $\frac{1}{2}$. Brown. June. Britain.

- GREENHOUSE.
H. crispatum. Tasmania. 1858.
 — *demi-ssum*. $\frac{3}{4}$. New Zealand. 1858.
 — *dilatatum*. August. New Zealand.
 — *flabellatum*. New Zealand. 1859.
 — *flexuosum*. April. New Zealand.
 — *nitens*. May. New Zealand.

- H. rarum*. Tasmania. 1859.
 — *sanguinolentum*. May. New Zealand
 — *scabrum*. New Zealand. 1859.

- STOVE.
H. abruptum. $\frac{1}{2}$. Jamaica. 1859.
 — *aspensoides*. $\frac{1}{2}$. Jamaica. 1859.
 — *attenuatum*. $\frac{1}{2}$. Brazil.
 — *bivalve*. May. Isle of Luzon.
 — *Boryanum*. $\frac{1}{2}$. Mauritius. 1848.
 — *ciliatum*. $\frac{1}{2}$. W. Indies. 1859.
 — *elastium*. Mauritius. 1859.
 — *fimbriatum*. April. Isle of Luzon.
 — *fucoides*. Jamaica. 1859.
 — *hirsutum*. May. Trinidad. 1823.
 — *hirtellum*. Jamaica. 1859.
 — *polyanthum*. W. Ind. 1824.
 — *protitum*. $\frac{3}{4}$. W. Indies. 1859.
 — *sericeum*. 2. W. Indies. 1859.
 — *undulatum*. $\frac{1}{2}$. Jamaica. 1859.
 — *valvatum*. W. Indies. 1863.

Hymenosporum. (From *hymen*, a membrane, and *sporos*, seed. Nat. ord., *Pittosporae*.)

Greenhouse shrub. For culture, see PITTO-SPORUM.

- H. flavum*. Yellow. February. E. Australia. Syn., *Pittosporum flavum*, B. M. t. 4799.

Hymenostachys. (From *hymen*, a membrane, and *stachys*, a spike. Nat. ord., *Filices* — *Polypodiaceae*.)

Stove fern. See FERNS.

- H. elegans*. Tropical America. 1861.

Hyophorbe. (From *hyos*, a hog, and *phorbas*, pasture. Nat. ord., *Palmee*; Tribe, *Areceae*.)

Stove palms. For cultivation, see ARECA, to which it is allied.

- H. amaricanalis*. Mauritius. 1866. Syn., *Areca speciosa*.
 — *indica*. 30. Isle of France. 1824. Syn., *H. Commersoniana* and *Areca lutescens*.
 — *Verschaffeltii*. Rodriguez. Syn., *Areca Verschaffeltii*.

Hyoscyamus. Henbane. (From *hyos*, a hog, and *kyamos*, a bean; fruit eaten by swine. Nat. ord., *Solanaceae*; Tribe, *Hyoscyameae*. Allied to *Datura*.)

The annual, *H. Cameraarii*, by seed in the open 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, fibry 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. aureus*. Yellow, purple. Crete. B. M. t. 87.
 — *Cameraarii*. Yellow, purple. July. South Europe. Hardy annual.
 — *canariensis*. B. R. t. 180. See *H. major*.
 — *datifera*. See *Scopolia nutica*.
 — *major*. $\frac{1}{2}$. Yellow. December. Canaries. 1816. Syn., *H. canariensis*. B. R. t. 180. Greenhouse evergreen.
 — *niger*. 1-2. Dull yellow with purple veins. Britain. Eng. Bot. ed. 3, t. 936.
 — *orientalis*. B. M. t. 2414. See *Physochlavin*.
 — *physaloides*. B. M. t. 852. See *Physochlavin*.
 — *Scopolia*. B. M. t. 1126. See *Scopolia*.

Hyospathe. (From *hyos*, a hog,

and spathe, a spathe. Nat. ord., *Palmeæ*.)

Stove palm. For culture, see BACTRIS.

H. elegans. Green. Fruit violet. Para.

Hype'coum. (From *hypecheo*, to rattle; referring to the seeds in the pods. Nat. ord., *Papaveraceæ*; Tribe, *Fumariceæ*.)

Hardy annuals, with yellow flowers. Seeds in the open border, in March and April.

H. erectum. $\frac{1}{2}$. May. Siberia. 1759.

H. grandiflorum. 1. Yellow. Pyrenees. Gfl. t. 1060.

H. littoralis. $\frac{1}{2}$. Yellow. S. Europe. Jacq. Ic. t. 309.

H. pedunculatum. $\frac{1}{2}$. June. South France. 1640.

H. procumbens. 1. July. South Europe. 1596. Swt. Fl. Gard. t. 217.

Hypernera *tharita* *Moringa*. 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., *Hypericineæ*; Tribe, *Hypericeæ*.)

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 produce runners 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: *elatior*, *hirtum*, *calycinum*, *Kalmia num*, and *prolificum*.

HARDY BIENNIAL.

H. simplex. 1. July. N. Amer. 1826.

GREENHOUSE EVERGREEN SHRUBS, ETC.

H. aegyptiacum. 2. June. Egypt. 1787. B. R. t. 196.

H. aethiopicum. 1. July. Cape of Good Hope. 1817.

H. baleaticum. $1\frac{1}{2}$. May. Majorca. 1774. B. M. t. 137.

H. canariense. 2. August. Canaries. 1699. B. C. t. 953.

H. chinense. 8. June. China. 1753.

H. cochinchinense. 3. Red. July. China. 1821.

H. cordifolium. 2. Nepaul. 1825. Half-hardy.

H. cris. 1. June. Levant. 1640. Half-hardy. B. M. t. 178.

H. empetrifolium. 1. July. South Europe. 1820. Half-hardy. B. M. t. 6764.

H. erioides. 1. June. Spain. 1821. Half-hardy.

H. floribundum. 3. June. Madeira. 1779. Deciduous.

H. foliosum. 3. August. Azores. 1778. Jacq. H. Schoenb. t. 299.

H. glandulosum. 2. June. Madeira. 1777.

H. grandiflorum. 3. July. Teneriffe. 1718.

H. heterophyllum. 2. July. Persia. 1812.

H. monogynum. Yellow. China. 1753. B. M. t. 334.

H. oblongifolium. 1. June. Nepaul. 1823.

H. sinense. Deep yellow. 1883.

H. triflorum. Golden-yellow. India and Java. 1884. Hardy in South Ireland.

HARDY DECIDUOUS AND EVERGREEN SHRUBS.

H. axillare. 2. July. Georgia. Evergreen.

H. buckleyi. Bright yellow. N. Carolina. G. and F. iv. p. 581, fig. 91.

H. calycinum. 1. July. Ireland. B. M. t. 146.

H. densiflorum. United States. G. and F. iii. p. 524, fig. 67.

H. elatum. 5. July. N. Amer. 1762. Wats. Dendr. t. 85.

H. fasciculatum. 1. July. Carolina. 1811.

H. frondosum. 5. July. N. Amer. 1806.

H. galioides. 2. August. N. Amer. Evergreen.

H. Gebleri. July. Altai. 1829.

H. glaucum. $1\frac{1}{2}$. August. N. Amer. 1812.

H. hirtum. 3. August. South Europe. 1640. Wats. Dendr. t. 86-87.

H. minus. 2. August. South Europe.

H. Kalmiana. 2. June. N. Amer. 1759.

H. nummularium. 1. June. South Europe. 1823. Trailer.

H. otympicum. 4. August. Levant. 1706. Evergreen. B. M. t. 1867.

H. patulum. 1. June. Nepaul. 1823. Evergreen.

H. prolificum. 4. July. N. Amer. 1758.

H. punctatum. $1\frac{1}{2}$. June. N. Amer. 1823.

H. rosmarinifolium. 2. July. Carolina. 1812.

H. serpyllifolium. $\frac{1}{2}$. July. Levant. 1688. Evergreen.

H. uratum. 1. July. Nepaul. 1823. B. M. t. 2375.

HARDY HERBACEOUS PERENNIALS.

H. amœnum. $1\frac{1}{2}$. July. Carolina. 1802.

H. angulosum. 2. June. N. Amer. 1812.

H. ascyroides. 2. June. N. Amer. 1812.

H. ascyron. 2. June. Siberia. 1774.

H. attenuatum. $1\frac{1}{2}$. July. Dahuria. 1822.

H. aureum. Orange-yellow. S. Carolina and Georgia. 1882.

H. barbatum. 2. July. Scotland.

H. calabricum. $1\frac{1}{2}$. August. Calabria. 1816.

H. canadense. 1. August. N. Amer. 1770.

H. ciliatum. 2. July. Levant. 1739.

H. crispum. 1. July. Greece. 1688. Sibth. Fl. Gr. t. 776.

H. dentatum. 2. August. Mediterranean. 1820.

H. dolabriforme. 2. June. N. Amer. 1821.

H. elegans. $1\frac{1}{2}$. June. Siberia. 1822.

H. fimbriatum. 2. July. Pyrenees. 1821.

H. hyssopifolium. 1. July. South Europe. 1823. B. M. t. 3277.

H. involutum. 1. July. N.S. Wales. 1822. Half-hardy.

H. japonicum. $1\frac{1}{2}$. July. Nepaul. 1823.

H. macrocarpum. August. N. Amer. 1828.

H. montanum. $1\frac{1}{2}$. July. Britain.

H. Moseriana. Garden hybrid. 1888.

H. myrtifolium. 1. July. N. Amer. 1818.

H. nepalense. $1\frac{1}{2}$. September. Nepaul. 1826.

H. nudiflorum. $1\frac{1}{2}$. July. N. Amer. 1811.

H. Androsæmum. 2. Yellow. August. Britain. Syn., *Androsæmum officinale*.

H. perfoliatum. 1. July. Italy. 1785.

H. angustifolium. $1\frac{1}{2}$. July. Britain.

H. perfoliatum. $1\frac{1}{2}$. July. Britain.

H. procumbens. $\frac{1}{2}$. August. N. Amer. 1822.

H. pustillum. $\frac{1}{2}$. July. N.S. Wales. 1818. 1769.

H. pyramidalium. 2. July. Canada. 1759.

H. quadrangulum. $1\frac{1}{2}$. July. Britain.

H. quinquerivium. 1. July. N. America. 1769.

H. reptans. Golden-yellow. Temperate Himalayas. A trailer.

H. tomentosum. 1. August. South Europe. 1648.

H. triplinerve. $1\frac{1}{2}$. July. N. Amer. 1821.

- H. virga'tum*. 1½. July. N. Amer. 1820.
— *virg'nicum*. 1½. August. N. Amer. 1800.
Andr. Rep. t. 552.

Hyphæ'ne. (From *hyphaino*, to entwine; referring to the fibres of the fruit. Nat. ord., *Palmeæ*; Tribe, *Borasseæ*. Allied to *Latania*.)

This is the Doum Palm, and the Gingerbread-tree of Egypt, the bark having the appearance of that eake. Stove palm. Seeds; rich, sandy loam.

- H. coria'cea*. 20. Egypt. 1824.
— *Petersia'na*. Mozambique. 1848.
— *theba'ica*. 40. Egypt. 1828. Fl. Ser. t. 2152-3. Doum Palm.

Hypocaly'mma. (From *hyppo*, under, and *kalymma*, a veil; referring to the calyx falling off like a veil or cape, on account of the cohesion of the points, or apices. Nat. ord., *Myrtaceæ*; Tribe, *Leptospermeæ*.)

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.

- H. angustifolium*. 2. White. May. 1843.
B. R. 1843, t. 8. Syn., *H. suave*.
— *robustum*. 1. Rose. May. 1843.
— *sua've*. See *H. angustifolium*.

Hypocaly'ptus. (From *hyppo*, under, and *kalypto*, to veil; referring to the two bractlets under the flower. Nat. ord., *Leguminosæ*; Tribe, *Genisteæ*. Allied to *Loddigesia*.)

A very old evergreen greenhouse plant, once called a *Crotalaria*, and one of the best of that section. Cuttings of young side-shoots in April, in sand, under a bell-glass; peat and loam.

- H. obcordatus*. 1½. Purple. June. Cape of Good Hope. 1823. B. M. t. 3394. Syn., *Crotalaria cordifolia*, *C. elegans*, and *C. purpurea*. B. M. t. 1913, and B. R. t. 128.

Hypochæ'ris. (Derivation doubtful. Nat. ord., *Compositæ*; Tribe, *Cichoraceæ*.)

Hardy perennial herb.

- H. maculata*. Yellow. July. Europe, rare in Britain.

Hypocy'rtia. (From *hyppo*, below, and *kyrtos*, curved; alluding to the flowers being swollen on the under side. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandree*.)

Stove plants. For cultivation, see *GESNERA*.

- H. brevicalyx*. See *Isoloma hypocyrtiflora*.
— *discolor*. See *Altoplectus dichrus*.
— *glabra*. 1. Scarlet, yellow. June. S. America. 1847. B. M. t. 4346.
— *gracilis*. B. M. t. 4531. See *Codomanthe gracilis*.
— *leucostoma*. B. M. t. 4310. See *Bealeria leucostoma*.
— *sca'brida*. Scarlet, yellow. Brazil. Fl. Ser. t. 238.
— *strigillosa*. Scarlet, yellow. May. Brazil. 1843. B. M. t. 4047.

Hypode'rris. (From *hyppo*, under, and *derris*, a skin. Nat. ord., *Filices*.)

A stove fern. See *FERNS*.

- H. Brownii*. 2. Brown. May. Trinidad.

Hypoe'stes. (From *hyppo*, under, and *estes*, covering; referring to the bracts covering the calyx. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*. Allied to *Dicliptera*.)

Stove plants. Cuttings of young shoots in sandy soil, under a glass, in heat; peat and loam.

DECIDUOUS.

- H. cochinchinensis*. White. July. China. Climber.
— *purpurea*. 2. Purple. May. China. 1822. Herbaceous.

EVERGREEN.

- H. aristata*. 2. White, purplish. February. S. Africa. 1874.
— *fastuosa*. 2. Red. June. E. Ind. 1818.
— *involucrata*. 1½. White. July. E. Ind. 1811.
— *sanguinolenta*. Purple; leaves pink-veined. Madagascar. 1865. B. M. t. 5511.
— *serpens*. ½. July. Australia. 1820.

Hypole'pis. (From *hyppo*, under, and *lepis*, a scale. Nat. ord., *Filices*.)

Ferns, with brown spores. The first two require the stove, and the others a warm greenhouse. See *FERNS*.

- H. aculeata*. August. Jamaica.
— *amaurorachis*. 1. New Holland. 1857.
— *anthricifolia*. Bourbon. 1855.
— *Bergia'na*. S. Africa. 1874.
— *disstana*. 1½. New Zealand. 1861.
— *millifolium*. New Zealand. 1880. Very elegant, and hardy.
— *repens*. 5. August. W. Ind. 1824.
— *rugulosa*. September. Van Diemen's Land. 1844.
— *tenuifolia*. June. N.S. Wales. 1824.

Hypoly'tron. (From *hyppo*, beneath, and *elytron*, a sheath. Nat. ord., *Cyperaceæ*.)

Stove perennial grass-like herb, suitable for table decoration, etc. Seeds; divisions. Sandy loam and peat; requires shade and plenty of water.

- H. latifolium*. 2-4. Brown. Ceylon. 1877. B. M. t. 6282.

Hypophyllanthus Lindeni. See *Erythrochiton Hypophyllanthus*.

Hypo'xis. (From *hyppo*, beneath, and *oxys*, sharp; referring to the seed-pod. Nat. ord., *Amaryllidææ*; Tribe, *Hypoxidææ*.)

Very pretty little bulbs, from South Africa, and with yellow flowers, except where otherwise mentioned. They are little known to 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. erecta*. ½. June. N. Amer. 1752. B. M. t. 710.
— *placata*. Jacq. Ic. t. 367. A synonym of *Curculigo veratrifolia*.
— *serrata*. 1. June. 1788. B. M. t. 709 and 917.
— *veratrifolia*. A synonym of *Curculigo veratrifolia*.

STOVE.

- H. graecilis*. 1. July. Mexico. 1829.
— *Sellovii*. June. Buenos Ayres. 1827.

GREENHOUSE.

- H. Arnottii*. 3. Yellow. S. Africa.
— *Bavri*. 1. Red. Caffraria. 1878.
— *carolineensis*. 1. June. Carolina. 1822.
— *elata*. Yellow. Natal. 1868.
— *elegans*. 3. White, blue. May. 1752.
— *latifolia*. Yellow. Natal. 1854.
— *linearis*. Andr. Rep. t. 171. See *H. stellata*.
— *longifolia*. Yellow. Algoa Bay. 1871.
— *obliqua*. 1. July. 1795. Jacq. Ic. t. 371.
— *obtusata*. 1. June. 1816. B. R. t. 159.
— *ovata*. Yellow. February. S. Africa. 1807. B. M. t. 1010.
— *pannosa*. 1. Yellow. June. S. Africa. 1874.
— *parvifolia*. 1. April. N. Holland. 1824.
— *ramosa*. 1. June. 1828.
— *sobolifera*. 1. August. 1774. Jacq. Ic. t. 372.
— *stellata*. 3. White, blue. May. 1752. Jacq. Ic. t. 368. Syn., *H. linearis*.
— *stellipilis*. Yellow. July. S. Africa. 1821. B. R. t. 663. B. M. t. 3696.
— *villosa*. 3. June. 1774. Jacq. Ic. t. 370.

Hyssopus. Hyssop. (*Yssopus* of Dioscorides, but certainly not the same plant. Nat. ord., *Labiatae*; Tribe, *Satureiinae*.)

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 require a hand-light over them; dry, light soil. The plant is not only aromatic, but the flowers are beautiful.

- H. officinalis*. 2. June. South Europe. 1548.
— *angustifolius*. July. Caucasus. Syn., *H. orientalis*. B. M. t. 2299.
— *cane-scens*. June. Switzerland. 1819.
— *flor-rubro*. 2. Red. July. Gardens.
— *variegatus*. 1. July. Gardens.
— *orientalis*. B. M. t. 2299. See *H. officinalis*. var. *angustifolius*.
— *septemrenatus*. June. Egypt. 1829.
— *septemfidus*. June. Egypt. 1827.

EXCLUDED SPECIES.

- H. anisatus*. } See *Lophanthus anisatus*.
— *discolor*. }
— *Lophanthus*. Jacq. Vind. t. 182. See *Lophanthus chinensis*.
— *nepetoides*. Jacq. Vind. t. 69. See *Lophanthus nepetoides*.
— *scrophulariaefolius*. See *Lophanthus scrophulariaefolius*.

I.

Ia'nthe. See **Celsia**.

Ibbetsonia. (In honour of Mrs. Agnes Ibbetson, a writer on Vegetable Physiology. Nat. ord., *Leguminosae*; Tribe, *Sophoraceae*.) United with **Cyclopia**.

- I. genistoides*. B. M. t. 1259. A synonym of *Cyclopia genistoides*.

Iberide'lla. (Diminutive of *Iberis*. Nat. ord., *Cruciferae*; Tribe, *Thlaspidaceae*.)

Hardy perennial alpine herb. For cultivation,

see **HUTCHINSONIA**, in which it was formerly included.

- I. rotundifolia*. 1-1. Rosy-lilac, yellow. April. Alps. 1868. B. M. t. 5749. Syn., *Hutchinsonia rotundifolia*.

Ibe'ris. Candy Tuft. (From *Iberia*, the ancient name of Spain, where the species abounds. Nat. ord., *Cruciferae*; Tribe, *Thlaspidaceae*. 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 *umbellata* 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. sempervirens* may be taken as a type of this group, and whether in a clump, by the side of borders, or hanging over knolls and rock-works, its masses of white flowers are really beautiful.

HARDY ANNUALS AND BIENNIALS.

- I. amara*. 1-1. White. June. W. Europe. Common Candy Tuft. Annual.
— *hesperidifolia*. A larger variety.
— *Bernardina*. 1. Pink. Summer. Pyrenees. Syn., *I. Bubanii*. Annual.
— *ciliata*. 1. June. Provence. 1802. Biennial. B. M. t. 1030.
— *taurica*. 1. May. Caucasus. 1802. Biennial.
— *coronaria*. 1. July. 1836. Swt. Fl. Gard. ser. 2, t. 359.
— *intermedia*. 1. June. France. 1823. Biennial.
— *na'na*. 1. Purple. June. S. France. 1822. B. M. t. 2788.
— *odorata*. 1. June. Crete. 1806.
— *umbellata*. 1. Purple. June. South Europe. 1596. B. M. t. 106.
— *airopurpurea*. Dark crimson.
— *ca'rneae*. Flesh-coloured.
— *na'na purpurea*. Deep purple.
— *purpurea lilacina*. Lilac purple.
— *violacea*. 1. Purple. June. 1782.
— *virginica*. June. N. Amer. 1836.

GREENHOUSE EVERGREEN.

- I. gibraltaria*. 1. Whitish-pink. May. Gibraltar. 1732. B. M. t. 124.
— *hybrida*. Creamy-white to rosy-purple.

HARDY EVERGREENS.

- I. conferta*. 1. June. Spain. 1827.
— *contracta*. 1. May. Spain. 1824.
— *correaefolia*. 1. June. South Europe. 1739.
— *Prutii*. 1. White. May. Sicily.
— *pubescens*. 1. Pale violet. June.
— *pu'nila*. May. Sicily. 1828.
— *saxatilis*. 1. May. South Europe. 1739.
— *sempervirens*. 1. May. Sicily. 1679.
— *sempervirens*. 2. May. Candia. 1731.
— *Garreziana*. 1. May. Piedmont. 1820.

HARDY HERBACEOUS.

- I. stylosa*. 1. White. Europe. 1879.
— *Tenorea*. 1. Pale purple. June. Naples. 1802. B. M. t. 2783.

Iceaci'na. (A name given on account of the resemblance of the branches to a tree called the *Iceaco*. Nat. ord., *Oleaceae*; Tribe, *Iceacinae*.)

Stove perennial, with a large tuberous root-stock and slender climbing stems. Cuttings of the young shoots in sandy loam, in bottom-heat, under a hand-glass. Rich sandy loam and leaf-mould.

- I. Ma'nni*. Yellow. October. Old Calabar. 1865. B. M. t. 6260.

Iceco'rea *guianensis*. A synonym of *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 sight 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, pots 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 hinderance, 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.

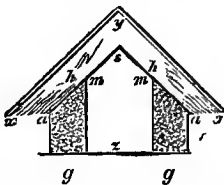
If an *Ice-house* is built, Mr. Cobbett's plan, as follows, is the best:—Fig. 1 *a* is the centre of a circle, the diameter of which is ten feet, and at this centre you put up a post to stand fifteen feet above the level of the ground, which post ought to be about ten inches through at the bottom, and not much smaller at the top. Great care must be taken that this post be perfectly perpendicular, for if not, the whole building will be awry; *bb* are 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; *ccc* are 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 four feet in width, and is to contain a wall of straw; *e* is a passage through this wall; *d* is the outside door of the passage; *f* is the inside door; and the inner circle, of which *a* is 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, as at *gg* in Fig. 2 (which Fig. 2 represents the whole building cut down through the middle, omitting the centre post), the ends of the straw would present a compact wall. It requires something to keep the straw from *bulging* out between

Fig. 1.



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, as at *mm* and *nn* in Fig. 2. From *s* to *m* there need be only about half as many as from *m* to *n*. 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 as at *m*, and these cannot all be fastened to the top of the centre post rising up from *a*. The plate which goes along on the tops of the row of posts, *bbb*, 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

Fig. 2.



thick, as at *hh* in Fig. 2. The bed for the ice is the circle of which *a* is 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, *e*; 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

Fig. 3.



wet, the whole of the passage may be filled with straw. The door, Fig. 3, 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 crystallinum.*

Ichneumon Flies are of interest to the gardener, from the fact that they keep down the number of many other kinds of insects by laying their eggs either in their chrysalids or caterpillars, which become destroyed by the fly maggots when hatched. This is especially the case with one species—*Microgaster glomeratus*—which lays its eggs in the caterpillar of the Large White Cabbage Butterfly. The cocoons, which are small and bright yellow, are often seen upon cabbages, and should not be destroyed. The flies have long, slender bodies, four small wings, and two long vibratile antennæ.

Ichnocarpus. (From *ichnos*, a vestige, and *karpos*, a fruit; in reference to the slender seed-vessels. Nat. ord., *Apocynaceæ*; Tribe, *Echitidææ*. Allied to *Apocynum*. Syn., *Aganosma*.)

Stove evergreen twiners. Cuttings of small side-shoots in April in sand, and in heat.

I. acuminatus. White. Sylhet. Syn., *Aganosma acuminata*. Wight Ic. t. 42a.

— *caryophyllatus*. Pale yellow. October. E. Ind. 1812. Syn., *Aganosma caryophyllata*.

— *cymosus*. White. Sylhet. Syns., *Aganosma cymosa*, Wight Ic. t. 385, and *Echites cymosa*. Shrub.

— *elegans*. Purple. E. Ind. Syn., *Aganosma elegans*.

— *frutescens*. 10. Purple. July. E. Ind. 1759. Wight Ic. t. 430.

— *marginata*. White. Sylhet. Syn., *Aganosma marginata*, Wight Ic. t. 425.

— *Rozburghii*. White. October. E. Ind. 1812. Syn., *Aganosma Rozburghii*.

— *Wallichii*. White. E. Indies. Syn., *Aganosma Wallichii*.

I'cica. (The native name in Guiana. Nat. ord., *Burseraceæ*; Tribe, *Burserææ*.)

Allied to *Bursera*, with which it is united by Bentham and Hooker.)

Stove evergreen balsam producing trees with white flowers, and all but one natives of Guiana. Cuttings of ripened young shoots in strong heat, in sand, and under a bell-glass; fibry peat and loam.

- I. altissima*. See *Protium altissimum*.
 — *deca'ndra*. 40. 1825. Syn., *Leicopsis caudata*.
 — *ennea'ndra*. See *Protium Schomburgkianum*.
 — *guianensis*. See *Protium guianense*.
 — *heterophylla*. See *Protium Araconchini*.
 — *Tacamaha'ca*. See *Protium heptaphyllum*.

Ide'sia. (Named after the Dutch traveller *Ysbrants Ides*, who made explorations in China. Nat. ord., *Bixineæ*.)

An ornamental hardy tree, with terminal panicles of inconspicuous flowers, followed by blue-black berries. Seeds sown in spring in a slight heat germinate readily; by cuttings it is more difficult to propagate; they should be taken from the half-ripened shoots in spring or autumn, and inserted in sandy loam, and placed in a slight bottom-heat under a bell-glass.

- I. polycarpa*. China. B. M. t. 6794. Syn., *Placourtia japonica* and *Polycarpa Maximowiczii*.

Ilex. The Holly. (From the resemblance of the leaves to the *Ilex* of Virgil, *Quercus ilex*. Nat. ord., *Illicineæ*.)

All white-flowered but one. By seed, which should be kept in the rot-heap for twelve months after gathering, frequently turned in the mean time, 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. angustifolia*. 6. May. Carolina. 1806.
 — *chinensis*. 10. July. China. 1814. B. M. t. 2043.
 — *magellanica*. Magellan. 1838. Half-hardy.
 — *Pera'do*. 10. Pink. May. Madeira. 1760.
 — *serrata*. Japan. 1840.

STOVE EVERGREENS.

- I. gongona*. 30. Brazil.
 — *montana*. 3. W. Indies. 1820. Syn., *Prinos montanus*.
 — *myrtifolia*. 6. July. W. Indies. 1806.
 — *paraguayensis*. 15. Paraguay. 1823. B. M. t. 3992. Paraguay Tea.
 — *salicifolia*. 5. May. Mauritius. 1818.

HARDY EVERGREENS.

- I. ambigua*. 4. Carolina. 1812. Syn., *Prinos ambiguus*.
 — *aquifolium*. 20. May. Britain.
 — *a'ibo marginatum*. 12. May. Britain.
 — *a'ibo pictum*. 20. April. Britain.
 — *ataclare'nse*. 20. April. Britain.
 — *angustifolium*. 20. May. Britain.
 — *au'reo marginatum*. 12. May. Britain.
 — *au'reo pictum*. 20. May. Britain.
 — *camelliofolium*. Garden variety. 1887.
 — *ciliatum*. 20. May. Britain.
 — *ciliatum minus*. 20. May. Britain.
 — *crassifolium*. 20. May. Britain.
 — *crispum*. 20. May. Britain.
 — *ferox*. 12. May. Britain.
 — *ferox argenteum*. 20. May. Britain.
 — *ferox aureum*. May. Britain.
 — *Fische'ri*. Garden variety. 1887.
 — *flavum*. 15. May. Britain.

- I. aquifolium fructu albo*. 20. May. Britain.
 — *fructu luteo*. 20. May. Britain.
 — *fructu nigro*. 20. May. Britain.
 — *heterophyllum*. 20. May. Britain.
 — *latifolium*. 20. May. Britain.
 — *laurifolium*. 20. May. Britain.
 — *marginatum*. 20. May. Britain.
 — *me'dio-pictum*. 10. May. Britain.
 — *platyphyllum*. May. Europe. 1844.
 — *recurvum*. 20. May. Britain.
 — *senecense*. 20. May. Britain.
 — *serratifolium*. 20. May. Britain.
 — *balea'ricum*. 10. May. Minorca. 1815.
 — *canariense*. 16. May. Canaries. 1820.
 — *cassine*. 12. August. Carolina. 1700.
 — *cornuta*. White. April. China. G. C. 1850, p. 311.
 — *Dahoon*. 6. May. Carolina. 1726.
 — *myrtifolia*. 6. May. S. United States. 1806.
 — *dippre'na*. 12. May. North India. 1840.
 — *Fortunei*. Japan. 1862.
 — *glabra*. 3. June. N. America. Syn., *Prinos glaber*. B. C. t. 450.
 — *insignis*. Sikkim. 1880.
 — *laevigata*. 4. June. N. America. Syn., *Prinos laevigatus*.
 — *lancoleta*. 4. July. Carolina. 1811. Syn., *Prinos lanceolatus*.
 — *latifolia*. 20. Japan. 1840.
 — *laxiflora*. 20. May. Carolina. 1811.
 — *leptacantha*. N. China. 1852.
 — *lucida*. 3. N. America. 1779. Syn., *Prinos atomarius*, *P. coriaceus*, and *P. lucidus*.
 — *microcarpa*. White. April. China. Paxt. Fl. Gard. i. p. 43.
 — *molle*. N. America. Syn., *Prinos dubius*.
 — *monticola*. May. E. United States.
 — *opa'ca*. 30. May. Carolina. 1744.
 — *platyphylla*. 20. May. Canary Islands. 1844. B. M. t. 4079.
 — *recurva*. 6. May.
 — *verticillata*. 6. May. N. America. 1736. Syn., *Prinos verticillatus*.
 — *vomitaria*. 10. July. Florida. 1700.

HARDY DECIDUOUS.

- I. decidua*. 4. June. S. United States. 1736. Syn., *Prinos deciduus*.

Illai'rea. (Commemorative of *M. Illaire*. Nat. ord., *Loasaceæ*.) United with *LOSA* by Bentham and Hooker.

Half-hardy climbing annual, with stinging hairs. For cultivation, see *LOSA*.

- I. canarinoides*. Red. July. Central America. 1855. B. M. t. 5022.

Illece'brum. Knot Grass. (From *illecebra*, a charmer; referring to the pretty little annuals giving a charm to waste places. Nat. ord., *Illecebraceæ*.)

All white-flowered, and all propagated by seed; common soil, though *verticillatum* 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. diffusum*. 1. June. Trinidad. 1817. Greenhouse herbaceous perennial.
 — *glomeratum*. †. June. Brazil. 1820. Stove herbaceous perennial.
 — *gompfrenoides*. †. June. Peru. 1810. Stove annual.
 — *verticillatum*. †. July. England. Hardy trailing annual. Eng. Bot. ed. 3. t. 1173.

Illi'cium. (From *illicio*, to allure; referring to the perfume. Nat. ord., *Magnoliaceæ*; Tribe, *Winteraceæ*. 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 *religi'osum* 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*. 6. Red. May. Japan. 1790.
 — *variegat'um*. Japan. 1861.
— florida'num. 8. Red. May. Florida. 1766.
 B. M. t. 439.
— parviflor'um. 6. Yellow. May. Florida. 1790.
— religi'osum. 4. Yellow, green. March. Japan. 1842. B. M. t. 3965.
— ve'rum. Greenish, tinged with pink. S. China. 1588. B. M. t. 7005. True Star Anise of China.

Illupie-tree. *Ba'ssia*.

Imantophyllum. (From *imas*, a leather thong, and *phyllon*, a leaf; alluding to the shape and substance of the foliage. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllææ*.) See **Clivia**.

- I. Ait'ni*. B. M. t. 2856. See *Clivia nobilis*.
— atrosanguineum. A variety of *Cliviaminiata*.
— cyrtanthiflor'um. Fl. Ser. t. 1877. See *Clivia cyrtanthiflora*.
— Gard'ni. A synonym of *Clivia Gardeni*.
— miniata. B. M. t. 4783. See *Clivia miniata*.

Imbricaria. (From *imbrico*, to cover like tiles on a roof; referring to the divisions of the calyx. Nat. ord., *Sapotaceæ*. Allied to *Mimusops*.)

Stove trees, which produce fruit similar to an orange. Cuttings of ripe shoots in sand, under a glass, in strong, moist heat; sandy loam and peat.

- I. borbonica*. White. Isle of Bourbon. 1820.

Imbricated. Leaves, sepals, etc., 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, *Eri'ca vulg'aris*, or the scales of a pine cone.

Impatiens. 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., *Geraniaceæ*; Tribe, *Balsamineæ*.)

Hardy annuals and biennials, by seed in the open border, in April. *Scapiflora*, 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*. 3-6. Pale purple. August. W. Himalayas. B. M. t. 6550.
— biflora. Orange. June. N. Amer.
— cristata. 2. Yellow. August. China. 1827.
— discolor. 1. Yellow. August. Nepal. 1820.

- I. fulva*. 3. Dark yellow. June. N. America. Aquatic.
— Roylei. 10. Purple. August. Himalayas. 1839. Syn., *I. glandulifera*, E. R. 1840, t. 22.
— macrochila. 8. Pale purple. August India. 1839. B. R. 1840, t. 8.
— moschata. Serrations of leaf less acute.

STOVE.

- I. Balsamifera*. 2. Scarlet. August. Tropical Asia. Syns., *I. coccinea*, B. M. t. 1256, and *Balsamina hortensis*.
— bicolor. Purple, white. Fernando Po. 1863. B. M. t. 5366.
— candida. 6. White. May. Himalayas. 1839. Biennial.
— coccinea. See *I. Balsamina*.
— comorensis. Carmine; spur white. Comoro Islands. 1887.
— cornuta. 2. Red. August. Ceylon. 1826.
— cuspidata. Bluish, rose. Burmah. 1884.
— Hookeria'na. 2½. White. Ceylon. 1852.
— fasciculata. 2½. Pink. July. Ceylon. 1851.
— Hawke'ri. Deep carmine. Summer. S. Sea Islands. G. C. 1886, xxv. p. 761.
— hortensis. 3. Red. September. E. Ind. 1596.
— latifolia. 1. Pale red. August. E. Ind. 1818. B. M. t. 5625.
— longicorruca. May. E. Ind.
— na'tans. 2. Red. July. E. Ind. 1810.
— macrophylla. 2½. Red and orange. Ceylon.
— Maria'nae. Lilac-purple. June. Assam. 1881.
— Mastersiana. 1. Purple. July. Khasia Hills. 1837.
— mirabilis. 4. Golden yellow. Langkawi Island. B. M. t. 7196. The trunk is sometimes nine inches in diameter.
— p'eta. 2. Pink. June. E. Ind. 1837. Biennial.
— platyptala. 1½. Rose. June. Java. 1844.
— alba. A synonym of *I. flaccida*, var. *alba*.
— pulcherrima. 1½. Purple. July. Bombay. 1850. B. M. t. 4615.
— repens. 1½. Yellow. June. Ceylon. 1848.
— Rodrig'esi. Rosy-purple. Java. Ill. Hort. 1889, p. 25, t. 78.
— scapiflora. ¾. Lilac. August. E. Ind. 1835. Bulb.
— Sulta'ni. Scarlet. Zanzibar. 1882. B. M. 6643.
— tricolornis. 6. Yellow-spotted. June. India. 1839.

GREENHOUSE ANNUALS.

- I. bifida*. ½. Red. August. Japan. 1820.
— cape'nsis. ½. Red. August. Cape of Good Hope. 1818.
— chine'nsis. 1. Purple. August. China. 1824.
— cornigera. 4. Yellow, purple. July. Ceylon. 1851.
— flaccida. Pink. Ceylon. 1861.
— albiflora. White. Ill. Hort. t. 519. Syn., *I. platyptala*, var. *alba*.
— glandulifera. B. R. 1840, t. 22. See *I. Roylei*.
— Jerd'niæ. ¾. Green, red, and yellow. June. Neigherries. 1852.
— madagascari'ensis. ½. Red. August. Madagascar. 1820.
— mi'nor. ½. Red. August. E. Ind. 1817.
— mysore'nsis. ½. Red. August. Mysore. 1820.
— rosea. 6. Rose. July. Himalayas. 1839.
— trifo'ra. 1. Pale red. August. Ceylon. 1818.
— tripetala. 1. Red. August. Nepal. 1825.

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.

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 or twelve-inch pots, according as you aim at moderate-sized or very large specimens. Allow, all the time, a current of air, more or less 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 the 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.

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 is never shed from the anther of the stamen until the stigma of the pistil is fully developed, and this soon withers after the contact.

Insects aid in effecting this impregnation, and, in frames, hothouses, etc., 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 **Hybridizing**.

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.

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 honour of *P. Incarville*, a Chinese Jesuit, who lived in the middle of the eighteenth century. Nat. ord., *Bignoniaceæ*; Tribe, *Tecomanæ*.)

Hardy perennials, except *I. sinensis*, requiring light rich soil. Seeds; division of roots.

- I. arguta.* A synonym of *Amphicome arguta*.
- *compacta.* Rose-purple. Summer. N.W. China. 1880. Gt. t. 1068.
- *grandiflora.* See *Tecoma grandiflora*.
- *Koopmanni.* 3. Purplish, pink, white. September. Central Asia. 1880.
- *O'lgæ.* 3-4½. Purple. Turkestan. 1880.
- *sinensis.* 1-2. Scarlet. China. Greenhouse.
- *tomentosa.* See *Paulownia imperialis*.

Indehiscent. A term used to denote those fruits which do not open regularly when ripe, e.g., apple, cherry, etc.

Indian Bay. *Laurus indica.*

Indian Blue. *Nymphæa cyanea.*

Indian Cress. (*Tropæolum*.) See **Nasturtium.**

Indian Fig. *Opuntia.*

Indian Grass. *Ariundo.*

Indian Hawthorn. *Raphiolepis.*

Indian Hemp. *Apocynum cannabinum.*

Indian Lotus. *Nymphæa lotus.*

Indian Mulberry. *Morinda.*

Indian Physic. *Magnolia auriculata.*

Indian Pink. *Didymus chinensis.*

Indian Shot. *Canna indica.*

Indigenous. Native, or naturally produced. Thus, the Crab-tree is indigenous to England.

Indigofera. (From *indigo*, a blue dye, and *fero*, to bear. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*.)

Annals and biennials, in hotbed, in spring, potted and treated as tender and half-hardy annuals; shrubby plants, by cutting 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. echinata.* Red. June. E. Ind. 1824. Stove.
- *procumbens.* ½. Blood-red. June. Cape of Good Hope. 1818.
- *sarmentosa.* ½. Purple. July. Cape of Good Hope. 1786.

STOVE ANNUALS.

- I. diphylla.* ½. Purple. July. Africa. 1816.
- *enneaphylla.* 4. Purple. July. E. Ind. 1776. Trailer.
- *glabra.* 1. Red. July. E. Ind. 1820. Trailer.
- *glandulosa.* 1. Purple. July. E. Ind. 1820.
- *lateritia.* 1. Purple. Guinea. 1806. Trailer.
- *Leschenaultii.* 1. Purple. July. E. Ind. 1820. Greenhouse.

I. tinifolia. 1. Red. July. E. Ind. 1792. Trailer.

— *trifoliata.* ½. Purple. July. E. Ind. 1816.

— *viscosa.* 1. Red. May. E. Ind. 1806.

STOVE EVERGREEN SHRUBS.

I. Anil. 8-6. Pink, green. W. Indies. 1880. One of the Indigo plants.

— *biflora.* Purple. May. E. Ind. 1826.

— *cærulea.* See *I. tinctoria*, var. *macrocarpa*.

— *dendroides.* Rose. Guinea. Jacq. Ic. t. 571.

— *Dosua.* 1½. Purplish. India. B. R. 1842, t. 57.

— — *strata.* Violet-red. 1870.

— *elliptica.* Red. July. Bengal. 1820.

— *endosphylla.* W. Tropical Africa. Jacq. Ic. t. 570.

— *fragrans.* 1. Purple. July. E. Ind. 1816.

— *Gerardiana.* Pale red. July. India. Syns., *I. Dosua* of B. R. 1842, t. 57, and *I. floribunda*.

— *hirsuta.* ½. Dark purple. July. Guinea. 1823. Jacq. Ic. t. 569.

— *leptostachya.* 3. Purple. June. E. Ind. 1818.

— *micronata.* Red. July. Jamaica. 1824.

— *pulchella.* Red. July. E. Ind. 1823.

— *tinctoria.* 3. Pink. July. E. Ind. 1731.

— — *macrocarpa.* Blue. June. E. Ind. 1820. Syn., *I. cærulea*.

— *violacea.* 5. Pale rose. June. E. Ind. 1819. B. M. t. 3348.

— *virgata.* 1½. Purple. June. E. Ind. 1820.

GREENHOUSE EVERGREEN SHRUBS.

I. alopecuroides. Rose. April. Cape of Good Hope. 1825.

— *amœna.* 1½. Purple. March. Cape of Good Hope. 1774. Jacq. H. Schoenb. t. 234.

— *angulata.* B. R. t. 991. See *I. sylvatica*.

— *angustifolia.* 2. Purple. August. Cape of Good Hope. 1774. B. M. t. 465.

— *argentea.* 2. Purple. July. E. Ind. 1776.

— *atropurpurea.* 3. Purple. July. Nepal, 1816. B. M. t. 3065.

— *australis.* 4. Pink. April. N.S. Wales. 1790. B. C. t. 149.

— *caudicans.* 1½. Red. July. Cape of Good Hope. 1774. B. M. t. 198.

— *coriacea.* 3. Purple. July. Cape of Good Hope. 1774.

— *cyliindrica.* Rose. June. Cape of Good Hope. 1822.

— *oytisoides.* White, purple. July. S. Africa. 1774. B. M. t. 742.

— *dœora.* Pink. July. China. 1840. B. R. 1846, t. 22, B. M. t. 5063. There is also a variety with white flowers: — *a'iba*.

— *demudata.* Purple. S. Africa. Jacq. H. Schoenb. t. 233.

— *divaricata.* 3. Red. July. Jacq. H. Schoenb. t. 365.

— *filifolia.* 1. Purple. August. Cape of Good Hope. 1812.

— *filiformis.* 2. Purple. July. Cape of Good Hope. 1822.

— *frutescens.* 3. Purple. July. Cape of Good Hope. 1822.

— *inodora.* 2. Pink. August. Cape of Good Hope. 1812. B. K. t. 957.

— *lotoides.* 3. Red. July. Cape of Good Hope. 1800.

— *macrostachya.* Rose. May. China. 1822.

— *ni'da.* 1. Purple. June. Cape of Good Hope. 1820.

— *psoraloides.* Bright purple. July. S. Africa. 1758. B. M. t. 476.

— *rigida.* 2. Red. July. E. Ind. 1816.

— *spinosa.* 1. Purple. June. Arabia. 1820.

— *stachyoides.* Summer. N.E. India. 1840. B. R. 1843, t. 14.

— *stricta.* Jacq. H. Schoenb. t. 236. See *Tephrosia stricta*.

— *sylvatica.* 8. Rosy, lilac. June. N. Holland. 1825. B. M. t. 3000. Syn., *I. angulata*.

Inga. (The name in South America. Nat. ord., *Leguminosæ*; Tribe, *Ingeæ*. 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°. *Pulcherrima* 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. affinis. 20. Pink. Brazil. 1800.

— *and' mala*. 10. Red. June. Mexico. 1729.

A synonym of *Calliandra Kunthii*.

— *biglobosa*. See *Parkia biglobosa*.

— *Bourgo'ni*. 20. Pink. Guiana. 1752.

— *como sa*. See *Pithecolobium comosum*.

— *coromandeliana*. White. E. Ind. 1818.

— *cyclocarpa*. See *Pithecolobium cyclocarpum*.

— *du'lcis*. See *Pithecolobium dulce*.

— *fastuosa*. Red. Caraccas. 1820.

— *Feni'let*. 8. White. Lima. 1824.

— *fo'etida*. 20. Pink. W. Ind. 1816.

— *Harrivii*. See *Calliandra Harrisii*.

— *Housto'ni*. 10. Purple. July. Mexico. 1729.

A synonym of *Calliandra Houstoni*.

— *hymenodes*. 20. Pink. Cayenne. 1823.

— *Jiri'nga*. See *Pithecolobium fasciculatum*.

— *latifolia*. See *Pithecolobium latifolium*.

— *lauri'na*. 20. White. S. Amer. 1818.

— *macrophylla*. 12. Yellow. April. S. America. 1849.

— *marginata*. 20. Pink. S. Amer. 1820.

— *melifera*. White. Arabia. 1826.

— *microphylla*. See *Pithecolobium microphyllum*.

— *pulcherrima*. 20. Mexico. 1822.

— *purpurea*. 6. Purple. April. W. Ind. 1733.

Soldier wood. A synonym of *Calliandra purpurea*.

— *Sa'man*. See *Pithecolobium Saman*.

— *setifera*. 20. Pink. Guiana. 1824.

— *splendens*. White. March. Caraccas. 1825.

— *stipularis*. Cayenne. 1831.

— *tergina*. 20. Pink. W. Ind. 1820. A

synonym of *Calliandra tergemina*.

— *velutina*. 30. Para. 1820.

Inocarpus. Otaheite Chestnut. (From *is*, a fibre, and *karpos*, a fruit. Nat. ord., *Leguminosæ*.)

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. e'dulis. 20. White. July. South Sea Islands. 1793.

Inoculation. Same as *Budding*.

Inoculating Grass. See *Turf*.

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.

Inula. (A word of doubtful origin, said to be a corruption of *helenium*. Nat. ord., *Compositæ*; Tribe, *Inuloidæ*.)

Inula hel'num or Elecampane, furnishes the *Vin d'Aunee* 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. calyc'na. 1½. July. Sicily. 1827.

— *ensifolia*. 3. August. Austria. 1793.

— *germanica*. 4. July. Germany. 1759.

— *glabra*. June. Caucasus. 1831.

— *glabulosa*. 2. August. Georgia. 1804.

— *grandiflora*. 2. July. Caucasus. 1810.

— *h'rtia*. 1. July. Austria. 1759.

— *Hookeri*. 1-2. Yellow. September. Sikkim Himalaya. 1851. B. M. t. 6411.

— *hybrida*. 2. July. Podolia. 1813.

— *macrophylla*. See *Telekia cordifolia*.

— *Maria'na*. See *Chrysopsis Mariana*.

— *molis*. 2. July.

— *montana*. 1½. August. South Europe. 1759.

— *o'culus Christi*. 1½. July. Austria. 1759.

— *odorata*. See *Pulicaria odora*.

— *quadridentata*. 1. August. Spain. 1820.

— *saccharifolia*. See *Jasomia glutinosa*.

— *scabra*. A synonym of *Heterotheca scabra*.

— *suaveolens*. 1½. July. South Europe. 1758.

— *triloba*. July. Sinaï. 1837.

— *Vaillanti*. 2. September. France. 1739.

— *verbascifolia*. 1½. July. Caucasus. 1819.

— *viscosa*. 1½. July. South Europe. 1596.

Io'chroma. (From *ion*, violet, and *chroma*, colour; referring to the purple colour of the flowers. Nat. ord., *Solanaceæ*; Tribe, *Solanææ*. Allied to *Hebecladus*.)

Greenhouse shrubs. Cuttings of young shoots, getting a little firm, in sandy soil, with a bell-glass in summer; sandy peat and fibry loam. Winter temp., 40° to 45°.

I. calyc'num. Green. Guiana.

— *coccineum*. Scarlet. S. America.

— *fuchsio'ides*. 5. Orange-scarlet. Summer.

Andes of Quito. 1843. Syn., *Lycium*

fuchsioides. B. M. t. 4149.

— *gesnerio'ides*. 4. Scarlet. Peru. Gf. t. 358.

Syn., *Lycium gesneroides*.

— *grandiflorum*. Saragina.

— *lanco'la tum*. 5. Purplish-brown. July.

Quindiu. 1846. Syn., *Chenestes lanceo-*

lata. B. M. t. 4338.

— *tubulosum*. Purple. August. Yangana.

IONE. This genus does not differ from *Bulbophyllum*, under which the species will be found.

Ioni'dium. (From *ion*, violet, and *eidos*, resembling. Nat. ord., *Violaceæ*. 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, hy cuttings in sand, under a bell-glass; peat and loam. All the following require greenhouse culture, except *strictum*, which is a stove plant.

I. cape'ns. 1. White. Cape of Good Hope. 1824.

— *longifolium*. See *Noisettia longifolia*.

— *polygalæfolium*. 1. Green, yellow. S. Amer. 1797.

— *Sprengelia'num*. 1. White. Pennsylvania. 1818.

— *strictum*. ½. White. W. Ind. 1824.

Iono'psis. (From *ion*, violet, and *opsis*, like. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidiææ*. Allied to *Burlingtonia*.)

- Stove orchids. For culture, see BURLINGTONIA.
I. paniculata. White, violet. Brazil. 1865.
 B. M. t. 5541.
 — *pulchella*. Violet. July. Merida.
 — *tenera*. White, lilac. W. Indies. B. R.
 t. 1904.
 — *utricularioides*. $\frac{1}{2}$. White, purple. October.
 Trinidad. 1822.

Ipecacuanha. *Cephaelis ipecacuanha*, the roots of which yield an emetic.

Iphigenia. (After *Iphigenia*, daughter of Agamemnon. Nat. ord., *Liliaceæ*; Tribe, *Anguillaricæ*.)

Herbaceous plant, requiring a little protection in winter. Propagated by division of the roots.
I. indica. 1. Dark purple. June. India. 1818.
 Syn., *Anguillaria indica*.

Ipomoea. (From *ips*, bindweed, and *homotos*, similar. Nat. ord., *Convolvulaceæ*; Tribe, *Convolvuleæ*. Syns., *Batatas*, *Calonyction*, *Exogonium*, *Quamoclit*, *Macrostema*, and *Pharbitis*.)

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 *Sellovia*, 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 *Horsfallia* requires a good heat.

HARDY ANNUALS.

- I. purpurea*. Purple, midline pink. June to August. Syns., *Convolvulus major* and *C. purpureus*. B. M. t. 113.
 — — *elatior*. White, with blue or pink patches on each petal. Syn., *Convolvulus purpureus*, var. *elatior*. B. M. t. 1005.
 — — *varia*. White, striped with pink and blue. Syn., *Convolvulus purpureus*, var. *varius*. B. M. t. 1682.

STOVE ANNUALS.

- I. caelestina*. Blue. August. 1840. Twinner.
 — *filicanalis*. Yellow. July. E. Ind. 1778.
 — *muricata*. 8. Blue, purple. August. E. Ind. 1777.
 — *tridentata*. 10. Yellow. July. E. Ind. 1778.

HARDY TWINERS.

- I. candicans*. 15. White. July. N. Amer. 1776.
 — *lacunosa*. 10. White. June. N. Amer. 1840. Deciduous.
 — *pandurata*. 12. White, purple. June. N. Amer. 1782. Deciduous. Syn., *Convolvulus candicans*. B. R. t. 1603.
 — *sagittifolia*. 3. Rose. July. Carolina. 1819. Deciduous.
 — *sibirica*. 8. Flesh. July. Siberia. 1779. Deciduous.
 — *sinuata*. 6. White. July. Florida. 1813. Evergreen. Syn., *Convolvulus dissectus*. Jacq. H. Vind. t. 159.

GREENHOUSE TWINERS.

- I. arnata*. 6. Purple. July. Mexico. 1824. Biennial.
 — *crassipes*. 3. Purple. August. S. Africa. 1842.

- I. hederacea*. 10. Pale blue. July to September. Syns., *I. nil* and *Convolvulus nil*. B. M. t. 188.
 — — *limbata*. Dark blue, white. May. N. Australia. 1868. Syn., *Pharbitis limbata*.
 — *macrorrhiza*. 10. White. August. Georgia. 1815. Tuber.
 — — *rubra*. Red, purple. August. Mexico. 1815.
 — *nil*. See *I. hederacea*.
 — *pendula*. 10. Pink. July. N.S. Wales. 1805. Evergreen.
 — *quinta*. Violet. July. Mexico.
 — *Sellovia*. 10. 1831. Deciduous.
 — *simplex*. Purple. S. Africa. 1844. B. M. t. 4206.

STOVE DECIDUOUS TWINERS.

- I. Aitonii*. 10. Pale purple. June.
 — *batatoides*. 6. Purple, crimson. July. Mexico. 1840.
 — *campanulata*. 8. Purple, white. August. E. Ind. 1800.
 — *carolinia*. 10. Purple. July. Carolina. 1732.
 — *ficifolia*. 3. Purple. November. Buenos Ayres. 1840.
 — *heterophylla*. Purple. July. 1818. Syns., *Batatas Willdenovii* and *Pharbitis heterophylla*.
 — *involuta*. 4. Red. July. Guinea. 1823.
 — *leucantha*. 6. White. August. S. Amer. 1823.
 — *longifolia*. 5. White. July. Mexico. 1838.
 — *multiflora*. 6. Pink. June. Jamaica.
 — *ochracea*. Yellow. August. Guinea. 1826.
 — *pe's-t'gridis*. 6. Red. August. E. Ind. 1732.
 — *pilosaa*. 4. Pink. August. E. Ind. 1815.
 — *rubro-cœrulea*. 8. Blue, red. September. Mexico. 1823.
 — *Schiedia*. Blue. October.
 — *setosa*. 9. Purple. August. Brazil.
 — *solanifolia*. 8. Pink. July. America. 1759.
 — *ternata*. White. July. Brazil. 1824. Syn., *Batatas ternata*.
 — *venosa*. Purple. July. Mauritius. 1820. Syn., *Batatas venosa*.
 — *violacea*. 8. Purple. August. S. Amer. 1792.

STOVE EVERGREEN TWINERS.

- I. acuminata*. 6. Purple. July. W. Ind. 1818.
 — *alatifipes*. Salmon. Panama. 1862.
 — *albivenia*. Yellow. September. Algoa Bay. 1824.
 — *bignonioides*. Purple. July. Cayenne. 1824.
 — *Bona-noxa*. 10. White. July. Tropical America. 1773. B. M. t. 752. Syn., *Calonyction speciosum*.
 — *bonariensis*. Purple. August. Buenos Ayres. 1826.
 — *caerica*. 8. Red. July. Egypt. 1680.
 — *camerunensis*. Cameroon Mts. Gf. 1891, p. 393, t. 1352.
 — *chrysoides*. 4. Yellow. July. China. 1817.
 — *corymbosa*. 2. White. July. E. Ind. 1823.
 — *decora*. 3. White, purple. E. Tropical Africa. 1879.
 — *fastigiata*. 10. Purple. June. W. Ind. 1816.
 — *Gerrardi*. White. Natal. 1867. Called Wild Cotton at Natal.
 — *grandiflora*. 8. White. September. E. Ind. 1802. Syn., *Calonyction pseudomuricatum*.
 — *Hookeri*. White, red. August. Mexico. 1830.
 — *Horsfallia*. 20. Rose-coloured. October. E. Ind. 1833.
 — — *alba*. White.
 — *jalapa*. 10. Red. August. America. 1733. Tuber.
 — *Leavii*. 20. Dark red. September. Ceylon. 1839.
 — *mutabilis*. 10. Blue. July. S. Amer. 1812.
 — *pentaphylla*. White, red. August. 1815.

- I. pe's-ca'præ.* Purple. June. India. 1776. Creeper.
 — *polyanthes.* 20. Yellow. August. W. Ind. 1739.
 — *pubibunda.* 6. Rose-coloured. August. St. Vincent. 1822.
 — *pulchella.* 20. Purple. December. Ceylon. 1845.
 — *purga.* Crimson. August. Mexico.
 — *repanda.* 10. Scarlet. July. S. Amer. 1793.
 — *reptans.* †. Purple. July. E. Ind. 1806. Creeper.
 — *Robertsii.* White, striped with pink and rosy-purple. Queensland. B. M. t. 6952.
 — *senegalensis.* White. July. Guinea. 1823.
 — *sepia'ria.* 8. Red. July. E. Ind. 1817.
 — *splendens.* B. M. t. 2623. See *Argyria splendens.*
 — *stipulacea.* 6. Purple. September. E. Ind. 1805. Creeper.
 — *terna'ta.* White. July. Brazil. 1824.
 — *Thomsoniana.* White, striped with green. Ecuador. 1883.
 — *tuberosa.* 10. Pale yellow. August. W. Ind. 1731. Tuber.
 — *uniflora.* August. S. Amer. 1731.
 — *Turpethum.* 5. White. August. E. Ind. 1752. Syn., *Convolvulus Turpethum.* B. M. t. 2093.
 — *Tweedii.* 6. Reddish-purple. July. Parana. 1838.
 — *tyrianthina.* Purple. October. Mexico.
 — *umbellata.* Scarlet. June. S. Amer. 1739.
 — *venosa.* Purple. July. Mauritius. 1820.
 — *vitifolia.* 10. Yellow. July. E. Ind. 1820.

Ipomopsis. (From *ipo*, to strike forcibly, and *opsis*, sight. Nat. ord., *Polemoniaceæ.*) United with **Gilia.**

- I. elegans.* B. M. t. 1281. See *Gilia pulchella.*
 — *inconspicua.* See *Gilia inconspicua.*

I'psæa. (Not explained. Nat. ord., *Orchideæ*; Tribe, *Epidendræ-Eriacæ.*) United with **Pachystoma** in the Genera Plantarum, but retained as a distinct genus in the Flora of British India.

- Stove orchid. Rough peat and a little fibry loam. Summer temp., 60° to 90°; winter 55°.
I. speciosa. May. Ceylon. 1840. B. M. t. 5701. Syn., *Pachystoma speciosum.*

Iresine. (From *eiros*, wool; referring to the woolly aspect of the branches. Nat. ord., *Amaranthaceæ*; Tribe, *Gomphrenæ.* 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. acuminata.* Leaves purple. Mexico. 1869. Fl. Mag. t. 441.
 — *celosioides.* 1‡. July. S. Amer. 1733.
 — *diffusa.* 1‡. July. S. Amer. 1818.
 — *elatior.* 3. July. Antilles. 1820. Annual.
 — *elongata.* 2. July. S. Amer. 1822.
 — *flavescens.* 1. July. S. Amer. 1824. A synonym of *Alternanthera flavescens.*
 — *Herbstii.* Green; leaves dark crimson, veins lighter. S. Brazil. 1864. B. M. t. 5499. Syn., *Achyranthes Verschaffeltii.*
 — *au'reo-reticulata.* Fl. Mag. t. 333.
 — *Lindleyi.* Leaves red, with purplish midrib. Ecuador. 1868. Fl. Ser. t. 1737.

Iria'ritea. (In honour of *Juna*

Iriarte, a Spanish botanist. Nat. ord., *Palmææ*; Tribe, *Areceæ.*)

Stove palms. They sometimes produce aerial roots, which raise the trees from the ground, as if on stilts.

- I. exorrhiza.* 100. Venezuela. 1849. Ill. Hort. t. 436.
 — *gigantea.* G. C. 1872, p. 1105.
 — *no'bilis.* Tropical America. 1869. Syn., *Deckeria nobilis.*
 — *præmorsa.* Venezuela. 1850.
 — *ventricosa.* Rio Negro, Brazil. Ill. Hort. t. 400.

I'ris. (From *iris*, the eye; referring to the variety and beauty of the flowers. Nat. ord., *Irideæ*; Tribe, *Moracæ.* Syns., *Diaphane, Evansia,* and *Xiphion.*)

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.

- I. acuta.* 2. Blue. May.
 — *acutiloba.* Fawn-coloured, purple. Caucasus. 1875.
 — *alata.* †. Blue. June. Algeria. 1801. B. R. t. 1876. Bulbous. There are the following colour varieties of 1889: *alba, cinerea, cupreata, lilacina, magna, nigrescens* and *speciosa.*
 — *Albertyi.* 1. Violet, yellow. Turkestan. 1880.
 — *alibicans.* Pure white. Cyprus. 1888.
 — *amœna.* 1. Blue. May. 1821.
 — *aphylla.* †. Blue. March. Tauria. 1822. B. M. t. 870. Syn., *I. furcata.* B. M. t. 2361.
 — *arenaria.* †. Yellow. June. Hungary. 1802. B. R. t. 549.
 — *— mi'nor.* Dwarf variety. 1886.
 — *argentea.* White, blotched with purple. Garden variety. Rev. Hort. 1891, p. 36.
 — *d'ro-purpuræa.* Purplish-black, yellow. Syria. 1889.
 — *auræa.* 2. Yellow. June. Germany. 1826. B. R. t. 59.
 — *Bakeriana.* Dark violet, cream, lilac. February. Armenia. 1889. B. M. t. 7084.
 — *balkana.* 1. Claret-lilac, white. 1878.
 — *Barnumii.* Reddish-purple, yellow, brownish. Armenia. 1888.
 — *Bartoni.* White, or cream, veins purple. Kandahar. 1880.
 — *benacensis.* 1. Dark violet, white, coppery. Tyrol. 1887.
 — *bi'color.* 1. Yellow, purple. May. B. R. t. 1404.
 — *bistora.* 1‡. Purple. June. S. Europe. 1596. Swt. Fl. Gard. ser. 2, t. 152.
 — *biglomis.* †. Blue. April. Siberia. 1811. Swt. Fl. Gard. ser. 2, t. 187.
 — *Bilotii.* 3. Reddish-purple, blue. Siwas, Asia Minor. 1887.
 — *Bismarckiana.* 1‡. Ashy-grey, sky-blue, veins darker. Lebanon. 1892.
 — *Blondyvi.* Blue. April. Altai. 1832.
 — *bohémica.* 1. Blue. May. Bohemia. 1825.
 — *Boissieri.* Purple. Portugal. 1887.
 — *Boltoniana.* 2. Blue. May. N. America. 1825.
 — *Bornmu'leri.* See *I. Danfordiæ.*
 — *brachycapsis.* 1‡. Purple. May. Siberia. 1819. B. M. t. 2326.
 — *bracteata.* 1-2. Yellow, veins bluish-purple. Oregon. 1888.
 — *caucasicæ.* †. Yellow. July. Caucasus. 1821. Swt. Fl. Gard. t. 255.

- I. caucásica* *cœru'lea*. Pale lilac, violet, yellow. Caucasus. 1889.
- *ocula'ta*. Yellow with blue markings. 1889.
- Cengia'lti*. Sky-blue; leaves yellowish-green. 1886.
- *Lo'ppio*. Rich blue; leaves bluish-green.
- *chine'nsis*. 1. Pale blue. China. 1792. B. M. t. 373, see *I. fimbriata*.
- *clandest'i'na*. May. Brazil. 1829. Greenhouse.
- *cœlest'i'na*. 1½. Blue. June. N. America. 1824.
- *col'chica*. Yellow. 1881. Bulbous.
- *compre'ssa*. Syn., *I. morcœoides*. B. C. t. 1428.
- *crassifo'lia*. ½. Pale blue. June. Cape of Good Hope. 1830. B. C. t. 1961.
- *cret'e'nsis*. ¾. Yellow, lilac, white, purple. Spring. Asia Minor. 1876.
- *crista'ta*. ¾. Pale blue. June. N. Amer. 1756. B. M. t. 412.
- *cu'prea*. 2. Orange. June. N. America. 1812.
- *curtop'e'tala*. 1½. Yellow, blue. May. 1823.
- *cypr'i'ana*. Reddish-lilac, orange, bluish, reddish-brown. Cyprus. 1888.
- *Danf'ordiae*. ¼. Orange-yellow, brown. Cilician Taurus. 1889. Bulbous. Syn., *I. Bornmulleri* and *Xiphion Danfordiae*.
- *dest'e'a*. 1½. Lilac. June. Nepaul. 1833. Greenhouse. Kn. and West, t. 51.
- *desert'o'rum*. 1½. Blue. July. Russia. 1811.
- *dicho'toma*. 1. Light blue. August. Dauria. 1784. B. R. t. 246.
- *Douglasia'na*. Lilac, white. California. 1873.
- *Duth'e'ti*. 2. Reddish-lilac, greenish yellow. Kumaon. 1887.
- *e'legans*. 2. Yellow. July. 1823.
- *Enlefe'idi*. Violet, yellow, fuscous. Thian Shan. 1879. B. M. t. 6902.
- *ensat'a*. 1½. Blue, purple. June. Austria. 1877.
- *filifo'lia*. 2. Violet, yellow. Spain and Morocco. 1869. Syn., *Xiphion filifolium*.
- *fimbria'ta*. 1. Pale lavender. China. 1792. Red. Lil. t. 152. Syn., *I. chinensis*. B. M. t. 373.
- *flav'e'scens*. 2. Yellow. May. 1818. Swt. Fl. Gard. ser. 2, t. 56.
- *flav'i'ssima*. ¾. Yellow. May. Siberia. 1814. Jacq. Ic. t. 220.
- *flexuo'sa*. 2. White. May. Germany. 1810.
- *flore'ti'na*. 2. White. May. South Europe. 1596. B. M. t. 671.
- *mi'nor*. 1½. Grey. May. Gardens.
- *foetid'i'ssima*. 1½. Livid. June. Britain. Stinking Gladwyn.
- *variega'ta*. 1½. Livid. June. Britain.
- *Fosteria'na*. Primrose-yellow, deep violet. 1891. B. M. t. 7215.
- *fra'grans*. Blue, white, purple. June. India. 1839. B. R. 1840, t. 1.
- *ful'va*. Tawny, or copper with purple veins. June. N. America. 1811. B. M. t. 1496.
- *furca'ta*. B. M. 2361. See *I. apyfla*.
- *Gate'sii*. Silvery-yellowish, striped and spotted with purplish-grey. Armenia. 1889.
- *germa'nica*. 3. Blue. May. Germany. 1573. B. M. t. 670.
- *fo're-al'bo*. 3. White. May. Gardens.
- *semp'perflo'rens*. Italy. Wien. Gart. Zeit. 1890, p. 355, fig. 73.
- *S'i'was*. Indigo-purple, dark and light. Siwas, Asia Minor. 1887.
- *giga'ntea*. 5. White, ochre. Central Asia. 1875.
- *gram'i'nea*. ¾. Striped. June. Austria. 1597. B. M. t. 681.
- *Guldensta'dtii*. 2. Yellow. April. Siberia. 1757.
- I. halo'phila*. 3. Blue. August. Siberia. 1780. B. M. t. 875.
- *heza'gona*. 3-4. Blue-purple. April. S. United States. B. M. t. 6767.
- *hi'strio*. ¾. Purple, yellow. Mount Lebanon. 1873. Syn., *Xiphion histrio*.
- *histrio'des*. See *I. reticulata*.
- *Hook'e'ri*. 1½. Purple. May. N. America. 1826.
- *Hook'e'ri'na*. ¾. Blue-purple, reddish-purple. Lahul. 1887.
- *Hu'mei*. 2. Blue. April. Nepaul. 1822.
- *hu'milis*. 1. Blue. April. Caucasus. 1812.
- *hunga'rica*. 1. Violet. May. Hungary. 1815. B. C. t. 1970.
- *Hutto'ni*. 1-1½. Yellow, purple. S. Africa. 1875. Syn., *Diates Huttoni*.
- *ibe'rica*. 1½. Red. May. Iberia. 1820.
- *imbrica'ta*. 2. Yellow. May. B. R. 1845, t. 35.
- *ins'i'gnis*. Lilac, white, black, brown.
- *paradoxi'des*. Yellow, purple. Garden variety. 1890.
- *ju'ncea*. 1½. Yellow. July. Algeria. 1869. Syn., *Xiphion junceum*. Bulbous.
- *num'i'dica*. Pale yellow, veined with black. Atlas Mountains. 1889.
- *Kœmpfe'ri*. July. Japan. 1857. Syn., *I. levigata Kœmpferi*. This varies in colour from dark violet to light purple and pure white, the base of the falls and central veins being yellow. It is a very fine species.
- *Schoinho'feri*. Yellow. Japan. Wien. Gart. Zeit. 1888, p. 137, t. 1.
- *Kerneria'na*. Troy. Cultivated?
- *Kingia'na*. 2. Purple with darker spots, greenish-white beneath. Garwhal. 1887. B. M. t. 6957.
- *Ko'chii*. 1-1½. Bright violet, white, yellow. Istria. 1887.
- *Kolkow'uski'a'na*. ¼. Violet-purple, lilac, yellow. Spring. Turkestan. 1878. Syn., *Xiphion Kolkowuski'ana*. Bulbous.
- *Korolko'wi*. Rosy-lilac, purple. Turkestan. 1874.
- *oc'ncolor*. Violet or purple. 1888.
- *Leichtlinia'na*. Creamy-white, blackish-purple. 1888.
- *veno'sa*. Greyish-lilac, veins purple. 1888.
- *viol'a'cea*. Violet or puce, veins darker. 1888.
- *leviga'ta*. Blue. May. Siberia. 1836. B. M. t. 6132.
- *linea'ta*. 1. Greenish-yellow veined with red-purple, bluish and brownish-purple. Caucasus. 1887. Gfl. t. 1244, figs. 1-6.
- *li'vida*. 1½. Livid. April. Levant.
- *longifo'ra*. 2. May. 1824.
- *longifo'lia*. ¾. Greenish. April. Naples. 1829. Andr. Rep. t. 45.
- *longipe'tala*. White, purple, yellow. California. 1862.
- *longispa'tha*. 3. Purple. July. Siberia. 1823. B. M. t. 2528.
- *Lort'e'tii*? 1. Pale blue, pale rose. Armenia. 1890.
- *lupi'na*. ¾. Greenish-yellow, veins brownish-red. Kharput. 1887.
- *lu'rida*. 2. Brown. April. South Europe. 1758. B. M. t. 663, and 980.
- *lusita'nica*. 2. Blue. April. Portugal. 1796. B. M. t. 679.
- *Vivia'ni*. Yellow. Portugal. 1889. Syn., *I. Viviani*.
- *lute'scens*. ¾. Yellow. April. Germany. 1743. B. M. t. 2361.
- *macro'siphon*. ¾. Lilac-purple or cream. California. 1890.
- *martine'e'nsis*. B. M. t. 416. See *Trimezia martinicensis*.

- I. Me'da*. Greenish-yellow, veined with brown. Persia. B. M. t. 7040.
- *Mile'sii*. 3. Reddish-purple. Kulu Valley, Himalayas. B. M. t. 6889.
- *Monnierii*. $\frac{1}{2}$. Yellow. May. Greece. 1820. Red. Lil. t. 236.
- *Mo'nspur*. Summer. Hybrid between *I. Monnierii* and *I. spuria*. Gard. 1890, xxxviii. p. 462.
- *moraeoides*. B. C. t. 1423. See *I. compressa*.
- *neglecta*. 2. Pale blue. May. B. M. t. 2435.
- *nepalensis*. $\frac{1}{2}$. Blue. April. Nepaul. 1823. B. R. t. 818.
- *Nertchinskia*. $\frac{3}{4}$. Blue. May. Siberia. 1831. B. C. t. 1843.
- *no'tha*. $\frac{1}{2}$. Blue. May. Italy. 1820. Belg. Hort. iii. p. 56.
- *nudicaulis*. 1. Blue. May. 1820.
- *ochroleuca*. 4. Light yellow. July. Levant. 1757. B. M. t. 61.
- *odora'ta*. 2. Blue. June. 1821.
- *odoratissima*. Jacq. H. Schoenb. t. 9. See *I. pallida*.
- *olbiiensis*. $\frac{1}{2}$. Dark purple. April. N. Italy. 1874.
- *orchto'des*. 1. Bright yellow. April. Central Asia. 1830. B. M. t. 7111.
- *orientalis*. 1. Light blue. May. China. 1790.
- *pabularia*. Kashmir. 1838.
- *Palla'sii*. 2. Blue. May. Tartary. 1820. B. M. t. 2331.
- *pa'llida*. 3. Pale blue. May. Turkey. 1596. Syn., *I. odoratissima*. B. M. t. 685.
- *paradoxa*. B. M. t. 7061.
- *pavonia*. B. M. t. 168. See *Moræa tricuspis*.
- *persica*. $\frac{1}{2}$. Blue, yellow. May. Persia. 1629. B. M. t. 1.
- *phica'ta*. 2. White, blue. June. 1821. Red. Lil. t. 356.
- *prisma'tica*. 1. Purple. May. N. Amer. 1812. B. M. t. 1504.
- *pseudocorymbosa*. 3. Yellow. June. Britain.
- *pa'llida flava*. 3. Pale yellow. June. N. Amer. 1812.
- *variegata*. 3. Yellow. June. Britain.
- *pu'mila*. $\frac{1}{2}$. Purple. May. Austria. 1596. B. M. tt. 9, 1209 and 1261.
- *a'lba*. $\frac{1}{2}$. White. May.
- *a'lba cœrulea*. $\frac{1}{2}$. White, blue. May.
- *cœrulea*. $\frac{1}{2}$. Blue. May.
- *reticulata*. $\frac{1}{2}$. Blue. March. Iberia. 1821. B. C. t. 1829. Syn., *I. histrioides*.
- *cyanea*. Blue, yellow, black. Iberia. 1875.
- *Krela'gei*. Flowers duller, scentless. Caucasus, Asia Minor. 1879.
- *Robinsoniana*. 4. White, yellow. Lord Howe's Island. 1877. Gard. 1891, t. 825. Syn., *Moræa Robinsoniana*. Wedding flower.
- *Rosenbachiana*. Blue or purple, yellow. Turkestan. Gfl. t. 1227.
- *rubromarginata*. Purple; leaves red-edged. Spring. Scutari. 1875.
- *ruthenica*. 1. Blue. May. Siberia. 1804. B. M. t. 1123 and 1393.
- *sambucina*. 3. Light blue. June. South Europe. 1658. B. M. t. 187.
- *Sa'ri-lu'rida*. Pale with purple-brown spots, violet-purple. Asia Minor. B. M. t. 6960.
- *scario'sa*. 1. Blue. May. Russia. 1826.
- *setosa*. $\frac{1}{2}$. Blue, purple. May. Siberia, 1844. B. R. 1847, t. 10.
- *sibirica*. 3. Light blue. May. Siberia. 1596. B. M. tt. 50, 1163 and 1604.
- *flore-albo*. $\frac{2}{4}$. White. May. Siberia. 1596.
- *flore-pleno*. 3. Purple. May. Gardens.
- I. sindjarensis*. Lilac, purple. February. Mesopotamia. 1890. B. M. t. 7145.
- *so'rdida*. $\frac{1}{2}$. White. May. 1819.
- *spathulata*. 1. Pale blue. June. Germany. 1759.
- *specularis*. 1. Purple, white, lilac, yellow. Spring. Hong Kong. 1877.
- *spuria*. $\frac{1}{2}$. Pale blue. May. Siberia. 1759. B. M. tt. 58, 1131 and 1514.
- *squallens*. 2. Striped. May. South Europe. 1768. B. M. t. 787.
- *statellæ*. Pale yellow with green veins. South Europe. B. M. t. 6894.
- *stellata*. $\frac{1}{2}$. Yellowish. April. 1876.
- *steno'gynæ*. $\frac{1}{2}$. Yellow. June. 1819. Red. Lil. t. 310.
- *stylosa*. Blue. May. Corfu. 1844.
- *grandiflora*. Deep purple. 1889.
- *lilacina*. Lilac, yellow. Atlas Mountains. Wein. Gart. Zeit. 1888, p. 92.
- *marginata*. Violet edged with white. 1888.
- *pavonia*. White at the base. 1888.
- *speciosa*. Violet, purple, brownish-purple. 1888.
- *sub-biflora*. $\frac{1}{2}$. Violet. July. Portugal. 1596. B. M. t. 1130.
- *Susia'na*. 2. Striped. April. Levant. 1596. B. M. t. 91.
- *Suworowii*. Greenish with blue veins. Buchara. 1836.
- *Sweetii*. $\frac{1}{2}$. White. May. 1819. Red. Lil. t. 306.
- *tangerica*. Yellow. June. Tangiers. 1820.
- *taurica*. Yellow. June. Tauria. 1827. B. C. t. 1506.
- *tectorum*. Violet-purple, white. Japan. 1872. Syn., *I. tomiolopha*.
- *tenax*. Purple. July. California. 1826. B. M. t. 3343.
- *tenuifolia*. $\frac{1}{2}$. Light blue. May. Dauria. 1796.
- *tenuis*. 1. White, yellow, purple. Oregon. Gard. and For. 1883, I., p. 6, fig. 3.
- *tingitana*. Purple, yellow. May. Tangiers. B. M. t. 6775. Syn., *Xiphion tingitanum*.
- *tridentata*. $\frac{1}{2}$. Blue. May. N. Amer. 1820. Swt. Fl. Gard. t. 274. Syn., *I. tripetala* of B. M. t. 2886.
- *triflora*. 1. Blue. June. Italy. 1821. Red. Lil. t. 481.
- *tripe'tala*. B. M. t. 2886. A synonym of *I. tridentata*.
- *tristis*. B. M. t. 577. See *Moræa tristis*.
- *trojana*. 3. Purplish-violet, white, yellow, coppery-purple. Sweet-scented. Troy. 1887.
- *tuberosa*. $\frac{3}{4}$. Green, blue. March. Levant. 1597. B. M. t. 531.
- *va'ga*. 2. Yellow, veined and edged with purple, bluish-white. Turkestan. Gfl. t. 1244, fig. 7.
- *Vanhoutteii*. Crimson, magenta. New Grenada. 1882.
- *variegata*. 2. Striped. May. Hungary. 1597. B. M. t. 16.
- *Varta'ni*. White, veins lilac, yellow. Palestine. 1835.
- *ventricosa*. 1. Pale blue. June. Dauria. 1800.
- *ve'rna*. 1. Purple. April. Virginia. 1748. B. C. t. 1855.
- *versicolor*. 1. Variegated. May. N. Amer. 1732. B. M. t. 21.
- *villo'sa*. B. M. t. 571. See *Vissousseuxia villosa*.
- *violacea*. $\frac{1}{2}$. Violet. May. South Europe. 1800.
- *vire'scens*. 1. Yellow. May. 1820. Red. Lil. t. 295.
- *virginica*. 1. Blue. June. N. Amer. 1758. B. M. t. 703.
- *viscaria*. B. M. t. 587. See *Moræa viscaria*.

<i>I. xiphoides</i> .	1½.	Blue, yellow.	June.
Spain.	1571.	B. M. t. 687.	
— <i>xiphium</i> .	1½.	Blue, yellow.	June.
Spain.	1596.	B. M. t. 686.	

Irish Heath. *Menziesia polifolia*.

Iron-tree. *Parrotia persica*.

Iron Wood. *Sideroxylon* and *Metrosideros*.

Ironwort. *Sideritis*.

Irouca'na. (The native name in Guiana. Nat. ord., *Samydaceæ*.) United with **Casearia**.

I. guianensis. A synonym of *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 brocoli 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."

Isanthus. (From *isos*, equal, and *anthos*, a flower; referring to the regularity of the flowers. Nat. ord., *Labiatae*; Tribe, *Ajugoidææ*. Allied to *Teucrium*.)

Hardy annual. Seeds in April, in a peaty border, or in a little heat, in March, and transplanted.

I. cœruleus. 1. Blue. July. N. Amer. 1818.

Isaria fuciformis. A fungus of the group *Hyphomycetes*, which has been found in autumn on the old stems of grass, especially *Festuca ovina*, when growing in sandy soils. It is conspicuous on account of its bright scarlet or crimson tufts. It is formed of a compact mass of *mycelial hyphæ*, on the ends of which are formed the *sporidia*, by which the plants are reproduced. It has been stated that cows have died through eating grass thus infected, but this requires confirmation. A figure of the plant is given in G. C. 1882, xvii. p. 377.

Isatis. Dyer's Wood. (From *isazo*, to make equal; from its supposed power to destroy roughness of the skin. Nat. ord., *Cruciferae*; Tribe, *Isatidææ*.)

Hardy biennials. *I. tinctoria* yields a blue dye, for which it has long been cultivated, though to a much smaller extent now than formerly, as it has been almost superseded by indigo. At the time of the Roman invasion the ancient Britons used this plant to stain their skins.

I. Boissieriana. 1. Yellow. Turkestan. 1876.
— *tinctoria*. 2-3. Yellow. Europe. Eng. Bot. ed. 3, t. 161.

Ischarum. See **Biarum**.

Isertia. (Named after *P. E. Isert*, a German surgeon. Nat. ord., *Rubiaceæ*; Tribe, *Mussendææ*.)

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. coccinea. 10. Scarlet. July. Guinea. 1820.

Ismelia. (Probably a commemorative name. Nat. ord., *Compositæ*; Tribe, *Anthemidææ*.) See **Chrysanthemum**.

I. Broussonetii. B. M. t. 5067. See *Chrysanthemum Broussonetii*.

— *carinata*. See *Chrysanthemum carinata*.
— *maderensis*. Swt. Fl. Gard. t. 342. See *Chrysanthemum pinnatifidum*.

Ismene. Peruvian Daffodil. (After *Ismene*, the daughter of *Œdipus* and *Jocasta*. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllidææ*.) Now regarded as a section of **Hymenocallis**, with a large staminal cup, and short free tip to the filaments.

I. Amanœes. See *Hymenocallis Amanœes*.
— *Andrea'na*. See *Hymenocallis Andrea'na*.
— *calathi'na*. B. M. t. 2685. See *Hymenocallis calathina*.
— *crinifolia*. See *Hymenocallis Amanœes*.
— *cyathiformis*. See *Hymenocallis calathina*.
— *deflexa*. See *Hymenocallis deflexa*.
— *Kniphthii*. A form of *Hymenocallis lacera*.
— *Maclea'na*. B. M. t. 8675. See *Hymenocallis Macleana*.

- I. narcissiflora*. See *Hymenocallis calathina*.
nutans. See *Hymenocallis nutans*.
pedunculata. See *Hymenocallis Macleana*.
Tagliabucchi. See *Hymenocallis calathina*.
tenuifolia. B. M. t. 6397. See *Hymenocallis quitensis*.
virens. B. R. 1841, t. 12. See *Hymenocallis Macleana*.

Isochilus. (From *isos*, equal, and *cheilos*, a lip. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Lælicæ*.)

Stove orchids; cultivated like the first section of CŒLOGYNE.

- I. carnosostylis*. 1½. Purple. November. Honduras. 1841.
fusiformis. ½. Yellow. July. Trinidad.
graminifolius. ½. Green, yellow. May. Jamaica. 1823.
grandiflorus. Peru. 1840.
linearis. 1. Purplish. Spring. Central and S. America. 1791. B. R. t. 749. Syn., *Epidendrum lineare*. Andr. Rep. t. 445.
prolifer. White. W. Indies. 1793. B. R. t. 825.

Isolepis. (From *isos*, equal, and *lepis*, a scale; in reference to the equal scales of the perianth. Nat. ord., *Cyperaceæ*. Allied to *Scirpus*, with which it is united in the Genera Plantarum.)

Greenhouse perennial. Seeds, divisions. Loam and peat; give plenty of water. Summer temp., 60° to 70°; winter, 45° to 50°.

- I. gracilis*. ½. Green. A favourite plant for conservatory decoration. Syn., *Scirpus riparius*.
setacea. ½. Brownish. July. Britain.

Isoloma. (From *isos*, equal, and *loma*, a border; lobes of the corolla equal. Nat. ord., *Gesneraceæ*.)

Stove herbs. For cultivation, see GESNERA, to which they are allied.

- I. bogotense*. 1-2. Yellow, red. Autumn. Bogota. 1844. Syn., *Achimenes picta* of B. M. t. 4126.
Cecilæ. 1-1½. Rose, red, white, orange. Cundinamarca. 1877. Syn., *Tydxæ Cecilæ*.
concinnum. Purple-lilac, white. India. 1861. Syn., *Stenogastra concinna*.
Deppænum. 2-3. Orange-red. Summer. Central America. Syn., *Gesneria elongata* of B. M. t. 3725.
digitatiflorum. Rosy-purple, green, white, crimson. Columbia. 1870. Syn., *Sciadocalyx digitatiflora*.
hirsutum. Orange-vermilion, scarlet. Colombia. 1831.
hondense. 1. Yellow, red. December. New Grenada. 1845. Syn., *Gesneria hondensis*. B. M. t. 4217.
hypocrytiflorum. Orange-red. Ecuador. 1866. Syn., *Hypocryta brevicalyx* and *Gloxinia* (B. M. t. 5655) and *Pearcea hypocrytiflora*.
Lindeniænum. White, purple. Ecuador. 1868. Syn., *Tydxæ Lindeni* and *T. Lindeniæna*.
molle. Scarlet, yellow, crimson. S. America. 1876.
ocellatum. Red, white. Winter. Panama. 1847. Syn., *Achimenes ocellatum*. B. M. t. 4359.
parviflorum. Scarlet, black, white, yellow. Columbia.

- I. pictum*. 3. Scarlet, yellow. Columbia. 1848. Syn., *Gesneria picta*. B. M. 4431.
Schiedænum. 1½. Scarlet, yellow. November. Mexico. Syn., *Gesneria Schiedæna*. B. M. t. 4152.
Seemanni. 2. Brick red to orange. October. Panama. 1848. Syn., *Gesneria Seemanni*. B. M. t. 4504.
triflorum. 2. Yellow, red. Summer. New Grenada. 1846. Syn., *Gesneria triflora*, B. M. t. 4342.

Isoloma of J. Smith (Nat. ord., *Filices*) is a synonym of **Lindsaya**.

Isomeris. (From *isos*, equal, and *meris*, a part; referring to the petals, with the stamens and pistils, which are of equal length. Nat. ord., *Cappariaceæ*; Tribe, *Cleomeæ*. 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. arborescens*. 10. Yellow. May. California. 1839. B. M. t. 3842.

Isonandra. Gutta Percha-tree. (From *isos*, equal, and *ander*, the male organ, or stamen; referring to an equal number of fertile and barren stamens. Nat. ord., *Sapotaceæ*.) See **Dichopsis**.

- I. gutta*. See *Dichopsis gutta*.

Isoplexis. (From *isos*, equal, and *pleko*, to plait; the upper plait or segment of the flower being of equal length with the lip. Nat. ord., *Scrophulariaceæ*; Tribe, *Digitaleæ*. 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. canariensis*. 4. Yellow. June. Canaries. 1698. Syn., *Digitalis canariensis*. B. R. t. 48.
septrium. 2. Yellow, brown. July. Madeira. 1777. Syn., *Digitalis septrium*.

Isopogon. (From *isos*, equal, and *pogon*, a beard; referring to the beard-like fringes on all parts of the inflorescence. Nat. ord., *Proteaceæ*; Tribe, *Protea*. 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; fibry loam three parts, fibry 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. anemonifolius*. 5. Yellow. July. 1791. Syn., *Protia anemonifolia*. B. M. t. 697.
 — *attenuatus*. 3. Yellow. April. B. M. t. 4372.
 — *Baate'ri*. 2. Rose. April. 1831. B. M. t. 3539.
 — *buaxifolius*. Purple. Syn., *I. spatulatus*.
 — *lined'ris*. 2. Purple. September. 1830. Syn., *I. spatulatus*, var. *linearis*. B. M. t. 3450.
 — *co'rriger*. See *I. teretifolius*.
 — *cuneatus*. 4. Purple. June. 1830. Syn., *I. Loudoni*.
 — *divaricatus*. 3. Pale. May. 1824.
 — *formosus*. 4. Rose. April. 1805. B. R. t. 1288.
 — *longifolius*. 3. Yellow. April. 1823. B. R. t. 900.
 — *Loudoni*. B. M. t. 342. See *I. cuneatus*.
 — *roseus*. Rose. 1840.
 — *sca'ber*. 3. Lilac. April. 1842. B. M. t. 4037.
 — *spatulatus*. See *I. buaxifolius*.
 — *lined'ris*. See *I. buaxifolius*, var. *linearis*.
 — *sphaerocephalus*. 4. Yellow. March. B. M. t. 4332.
 — *teretifolius*. 4. Syn., *I. corniger*.

Isotoma. (From *isos*, equal, and *toma*, a section; the corolla's segments are equal-sized. Nat. ord., *Lobeliaceae*.)

Greenhouse plants. For cultivation, see LOBELIA.

- I. axillaris*. 1. Blue. June. Queensland. 1824. Perennial. Syns., *I. senecioides*, B. M. t. 5073, and *Lobelia senecioides*, B. M. t. 2702.
 — *breviflorum*. White. July. S. America. Syn., *Hippobroma breviflorum*.
 — *Brod'witi*. 1. Red. September. W. Australia. 1829. Annual. Syn., *Lobelia hypocrateriformis*, B. M. t. 3075.
 — *longiflora*. White. Summer. W. Indies. 1752. Perennial. Syns., *Lobelia longiflora*, B. R. 1290, and *Hippobroma longiflorum*.

Isotropis. (From *isos*, equal, and *tropos*, turned; referring, probably, to the distinctly-forked veins in the flower. Nat. ord., *Leguminosae*; Tribe, *Podalyriaceae*. 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 fibry 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. striata*. 1. Orange. June. Swan River. 1838. Syn., *Chorozema spartioides*. B. C. t. 1953.

Iso'typos. (From *isos*, equal, and *typos*, a mark. Nat. ord., *Compositae*.) See **Onoseris**.

- I. rosiflorus*. L'Hort. Fr. 1864, p. 10. See *Onoseris rosiflora*.

Italian Star-wort. *Ame'llus lychni'tis*.

I'tea. (The Greek name for the Willow, applied to this genus on account of its rapid growth in damp soil.

Nat. ord., *Saxifragae*; Tribe, *Escalloniae*. Allied to *Escallonia*.)

A hardy deciduous shrub. Seed and suckers in spring; layers in summer; moist, sandy peat.

- I. spinosa*. Andr. Rep. t. 314. A synonym of *Bursaria spinosa*.
 — *virginica*. 6. White. July. N. Amer. 1774. B. M. t. 2409.

Ivory-nut palm. *Phytel'phas macrocarpa*.

Ivy. *He'dera*.

Ixa'nthus. (From *Ixos*, mistletoe, and *anthos*, flower; in reference to the sticky flowers. Nat. ord., *Gentianeae*.)

Greenhouse herbaceous biennial. Seeds in spring.

- I. viscosa*. 1½. Yellow, white. June. Canary Islands. Syns., *Exacum viscosum* and *Gentiana viscosa*, B. M. t. 2135.

I'xia. (From *ixia*, bird-lime; in reference to the clammy-juice. Nat. ord., *Irideae*; Tribe, *Ixiaceae*.)

Half-hardy bulbs, from the Cape of Good Hope. The true *Ixias* are known from *Sparaxis* by not having, like it, a jagged sheath; from *Babia'na*, in having a dry seed-pod instead of a berry; and from *Tritonia*, 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 off-sets; 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*. 1. Red. April. 1822.
 — *anemoniflora*. Jacq. Ic. t. 273. See *Sparaxis*.
 — *angusta*. Jacq. Ic. t. 279. See *Hesperantha*.
 — *aristata*. 1. Pink. April. 1800. B. M. t. 589.
 — *au'lica*. 2. Pink. April. 1774. Syn., *I. phlogiflora*. Red. Lil. t. 432.
 — *bi'color*. Yellow, blotched with purple. March. 1786. B. M. t. 548.
 — *bulbifera*. B. M. t. 545. See *Sparaxis bulbifera*.
 — *bulbocodium*. Jacq. Ic. t. 271. See *Romulea bulbocodium*.
 — *ca'ndida*. Red. Lil. t. 426. See *I. leucantha*.
 — *capilla'ris*. 1½. Violet. April. 1774. B. M. t. 570, 617 and 1013.
 — *cap'cea*. Red. Lil. t. 96. See *Watsonia spicata*.
 — *chine'nsis*. B. M. t. 171. A synonym of *Belemcanda chinensis*.
 — *chloroleu'ca*. Jacq. Ic. t. 272. See *Romulea chloroleuca*.
 — *cinnamo'mea*. Andr. Rep. t. 44. See *Hesperantha falcata*.
 — *columella'ris*. ½. Variegated. August. 1790. B. M. t. 630.

- I. columnaris*. Pink. June. 1794. Andr. Rep. t. 203.
- *co'nica*. 1. Orange. April. 1757. B. M. t. 539.
- *corymbo'sa*. Jacq. Ic. t. 288. See *Lapeyrouisia corymbosa*.
- *crateroi'des*. $\frac{3}{4}$. Dark yellow. May. 1778. B. M. t. 594.
- *crispifo'lia*. Andr. Rep. t. 35. See *Lapeyrouisia corymbosa*.
- *croca'ta*. B. M. t. 184. See *Tritonia crocata*.
- *crucia'ta*. Jacq. Ic. t. 290. See *Romulea cruciata*.
- *cu'rt'a*. Yellow, black, red. April. Andr. Rep. t. 564.
- *du'bia*. $\frac{3}{4}$. Red. April. Red. Lit. t. 64.
- *ere'cta*. $\frac{1}{2}$. White. June. 1757. Jacq. H. Schoenb. t. 18.
- — *incarna'ta*. 1. Flesh. May. 1757.
- — *lu'tea*. 1. Yellow. May. 1757.
- *exci'sa*. B. M. t. 584. See *Lapeyrouisia juncea*.
- *falca'ta*. B. M. t. 566. See *Hesperantha falcata*.
- *fenestra'ta*. Jacq. Ic. t. 289. See *Tritonia fenestrata*.
- *filifo'lia*. Red. Lil. t. 251. See *Romulea subulata*.
- *filifo'rmis*. Red. Lil. t. 30. See *I. patens*.
- *flexuo'sa*. 2. Pink. April. 1757. B. M. t. 127 and 624.
- *fra'grans*. Yellow. Jacq. Ic. t. 274.
- *fua'da*. $\frac{3}{4}$. Pink. April. 1800. B. M. t. 1379.
- *fuscoctri'na*. Red. Lil. t. 86. See *I. maculata*.
- *grandifo'ra*. B. M. t. 541. See *Sparaxis grandiflora*.
- *holoseri'cea*. Jacq. H. Schoenb. t. 17. See *Sparaxis grandiflora*.
- *hyali'na*. Red. Lil. t. 87. See *Tritonia squalida*.
- *hybrida*. 1. White. June. 1757.
- *incarna'ta*. $\frac{3}{4}$. Flesh-colour. May. Jacq. Ic. t. 282.
- *la'nea*. Pale purple. Jacq. Ic. t. 281.
- *leuca'ntha*. $\frac{1}{2}$. White. April. 1779. Jacq. Ic. t. 278.
- *Lilia'go*. Red. Lil. t. 109. See *Sparaxis grandiflora*.
- *linea'ris*. $\frac{1}{2}$. White. May. 1796.
- *longifo'ra*. B. M. t. 256. See *Tritonia longiflora*.
- *longifo'lia*. Jacq. Vind. iii. t. 90. See *Hexaglottis longifolia*.
- *macula'ta*. 1. White, brown. April. 1780. Jacq. H. Schoenb. t. 19. Syns., *I. fuscoctrina* and *I. spicata*.
- — *ca'sia*. Pale lilac. B. R. t. 530.
- — *ochroleu'ca*. 1. Purple. Yellow. May. 1780.
- *miniata* of Jacq. H. Schoenb. t. 24, see *Tritonia miniata*; of Red. Lil. t. 89, see *Tritonia deusta*.
- *monade'lpha*. $\frac{1}{2}$. Blue. May. 1792. B. M. t. 607 and 1378.
- — *cu'rt'a*. $\frac{3}{4}$. Orange. April. 1792.
- *ova'ta*. 1. Red. April. 1780.
- *pa'tens*. 1. Purple. April. 1779. B. M. t. 522. Syn., *I. filiformis*.
- *phlogifo'ra*. Red. Lil. t. 432. See *I. aulica*.
- *plantagi'nea*. Red. Lil. t. 198. See *Watsonia plantaginea*.
- *polysta'chya*. Jacq. Ic. t. 275. See *Tritonia scillar'is*.
- *puncta'ta*. Andr. Rep. t. 177. See *Watsonia punctata*.
- *puni'cea*. Jacq. Ic. t. 287. } See *Babiana*
- *purpu'rea*. Jacq. Ic. t. 286. } *stricta*.
- *pusi'lla*. Andr. Rep. t. 245. See *Geissorhiza secunda*.
- *radia'ta*. Jacq. Ic. t. 230. See *Hesperantha radiata*.

- I. rapunculoi'des*. Red. Lil. t. 431. See *I. capillar'is*.
- *recl'u'ra*. Red. Lil. t. 251. See *Romulea bulbocodioides*.
- *refle'za*. Andr. Rep. t. 14. See *Tritonia scillar'is*.
- *retu'sa*. 1. Light yellow. April. 1795.
- *roche'n'sis*. B. M. t. 598. A synonym of *Geissorhiza rochensis*.
- *rubrocya'nea*. Jacq. Ic. t. 285. See *Babiana stricta*.
- *scilla'ris*. B. M. t. 542. See *Tritonia scillar'is*.
- *secu'nda*. Jacq. Ic. t. 277. See *Geissorhiza secunda*.
- *spica'ta*. Andr. Rep. t. 29. See *I. maculata*.
- *tri'color*. B. M. t. 381. See *Sparaxis tri-color*.
- *uni'fo'ra*. Jacq. Ic. t. 283. See *Sparaxis grandiflora*.
- *viridifo'ra*. 1. Green. May. 1780. Red. Lil. t. 466.

Ixioli'ron. (From *ixia*, and *leirion*, a lily; literally, Ixia-like Lily. Nat. ord., *Amaryllideæ*; Tribe, *Alstræmerieæ*. 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. montanum* 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. tataricum* is terminal; both have sky-blue flowers. *Montanum* 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*. 1. Blue or white. Lake Sairan. 1878. Syn., *Kolpakowskia iziolirioides*. Gfl. t. 953.
- *monta'num*. 1. Blue. June. Syria. 1844. B. R. 1844. t. 66. Syns., *Amaryllis* and *Alstræmeria montana*.
- — *Ledebou'ri*. 1. Blue. Central Asia. 1880.
- — *tata'ricum*. 1. Blue. Tartary.
- *Palla'ei*. $\frac{1}{2}$. Blue. Russia. 1874.
- *tata'ricum*. See *I. montanum*, var. *tata-ricum*.

Ixo'dia. (From *ixodes*, viscid; in reference to the viscid secretions on the plant. Nat. ord., *Compositæ*; Tribe, *Inuloideæ*. 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 fibry loam. Winter temp., 45° to 50°.

- I. achilleoi'des*. 2. White. June. Victoria and S. Australia. 1803. B. M. t. 1534.

Ixo'ra. (Named after an Eastern heathen god, *Iswara*, to which the flowers are offered. Nat. ord., *Rubiaceæ*; Tribe, *Ixoreæ*.)

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, fibry loam, and fibry 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 Jasmynes 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. acuminata*. 3-6. White. India.
d'Alba. 3-5. White. Summer. India. Gf. t. 1037.
arbores. 3. Scarlet. August. E. Ind. 1800. B. C. t. 609.
armeniaca. Yellow, flushed with salmon. Garden variety. 1890.
Bandhu'ka. 3. Scarlet. July. E. Ind. 1815. B. R. t. 513.
barbata. 12. White. July. E. Ind. 1823. B. M. tt. 2505 and 4513.
blanda. 4. White. August. E. Ind. 1768.
Burbi'dget. Borneo.
coccinea superba. 4. Scarlet. August. Java. 1846.
concinna. Salmon-colour. Garden hybrid. 1882.
crocata. 8. Orange. August. China. 1822. B. R. t. 782.
cuneifolia. 3. White. June. E. Ind. 1822. B. R. t. 154.
Dixiana. Dark orange. 1868.
Duffii. See *I. macrothyrsa*.
Findlayana. E. Indies.
flava. 3. Scarlet. July. E. Ind. 1825.
fulgens. 5. Orange. August. E. Ind. 1823.
grandiflora. 4. Red. August. E. Ind. 1814. B. R. t. 154.
Griffithii. 4. Red, yellow. July. Singapore. 1845. B. M. t. 4325.
incarnata. 2. Purple. June. Moluccas. 1822.
javonica. 3. Orange. June. Java. 1846. B. M. t. 4586.
jucunda. 10. White. May. Ceylon. 1859. B. M. t. 5197.
lanceolaria. 6. Greenish-white. April. E. Ind. 1847. B. M. t. 4399.
laziflora. 4. White, pink. Sierra Leone. B. M. t. 4482.
macrothyrsa. Vermilion-red. Strong Island. 1878. Syn., *I. Duffii*.
Mo'rsei. Orange, shaded with scarlet. Garden hybrid. 1885.
obovata. Crimson. May. E. Ind. 1810.
odora. 3. Cream, rose. May. Madagascar. 1844. B. M. t. 4191. Syn., *Coffea odorata*.
ornata. Orange, salmon. 1881.
parviflora. White. August. E. Ind. 1800. Wight. Ic. t. 711.
picturata. Garden hybrid between *I. Williamsii* and *I. stricta*. 1880.
Pilgrimii. Orange-scarlet, crimson. Garden hybrid between *I. Williamsii* and *I. coccinea*. 1880. Flor. Mag., new ser., t. 428.
princeps. Pale buff. Java.
profusa. Rosy-salmon. 1882.
regina. Violet-salmon. Garden variety.
rosea. 4. Rose. July. Bengal. 1819. B. R. t. 540; B. M. t. 2428.
salicifolia. Orange. Borneo. 1847. B. M. t. 4523. There is a variety—*variegata*—from Sumatra.
sessilis. 4. White. E. Ind. 1828.
splendida. Orange. 1882. Ill. Hort. t. 463.
stricta. 3. Scarlet. July. Moluccas. 1690. Syn., *I. coccinea*. B. M. t. 169.
undulata. White. June. E. Ind. 1818. Wight. Ic. t. 708.
We'stii. Very pale rose. Garden hybrid. 1882.

J.

Jaborosa. (From *Jaborose*, the Arabic for the Mandrake, an allied plant. Nat. ord., *Solanaceae*; Tribe, *Solanaceae*.)

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. integrifolia*. 3. White. August. Buenos Ayres. Hardy. B. M. t. 3489.
runcinata. 1/2. Green, yellow. Plata. 1831. Greenhouse. A synonym of *Himeranthus runcinatus*.

Jacarana. (The Brazilian name. Nat. ord., *Bignoniaceae*; Tribe, *Jacaranaceae*.)

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, fibry 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. bahamensis*. 10. Blue. July. Bahamas. 1824. Syn., *Bignonia cerulea*.
brazilliana. 20. Yellow. Brazil. 1820.
digitaliflora. Lilac, white. Brazil. 1864.
alba. White. Ill. Hort. t. 498.
filicifolia. 25. Blue. W. Ind. 1800.
mimosifolia. 10. Blue. April. Brazil. 1818. Syn., *J. ovalifolia*.
pubescens. 15. Blue. 1825. A synonym of *J. tomentosa*.
tomentosa. 20. Purple. Brazil. 1824.

Jaca, or Jack-tree. *Artocarpus integrifolia*.

Jack-in-a-box. *Hernandia*.

Jacksonia. (Named after G. Jackson, librarian to A. B. Lambert, Esq. Nat. ord., *Leguminosae*; Tribe, *Podalyreae*. Allied to *Burtonia*.)

Greenhouse evergreen shrubs from Australia, and all yellow-flowered. Cuttings of half-ripened shoots in sand, under a glass, in April; peat and loam. Winter temp., 38° to 45°. *Scoparia* might be tried against a wall.

- J. densiflora*. W. Australia.
floribunda. W. Australia.
furcellata. 1824.
grandiflora. April. 1838.
horrida. 3. April. 1825.
reticulata. See *Pultenaea reticulata*.
scoparia. 2. July. 1803. B. C. t. 427. Syn., *Viminaria lateriflora*.
spindsa. 2. July. 1803.
Sternbergiana. April. 1837.
thesiodora. April. N. Australia and Queensland. 1820.

Jacobæa Lily. *Hippeastrum formosissimum*.

Jacobiinia. (Derivation not stated. Nat. ord., *Acanthaceae*; Tribe, *Justicieae*. Allied to *Dianthera*. Syns., *Libonia*, *Cyrtanthera* and *Sericographis*.)

Stove shrubby perennials. For cultivation, see *JUSTICIA*. *SERICOBONIA* (Ill. Hort. t. 198) is

a hybrid between *Libonia* and *Jacobinia Ghiesbreghtiana*.

- J. aurea*. 6. Yellow. July. Honduras. 1848. Syn., *Cyrtanthera catalpæfolia*. B. M. t. 4444.
 — *ca'nea*. 4-5. Rose. August. Rio Janeiro. 1827. Syn., *Justicia carnea*. B. R. t. 1397.
 — *chryso'tephana*. Golden-yellow. Winter. Mexico. 1870. Syn., *Cyrtanthera chryso'tephana*. B. M. t. 5887.
 — *cili'ata*. See *Dianthera ciliata*.
 — *cocc'i'nea*. 5. Scarlet. February. S. America. 1770. Syn., *Justicia coccinea*. B. M. t. 432.
 — *Ghiesbreghtia'na*. 1½. Scarlet. Winter. Mexico. 1843. Syn., *Sericographis Ghiesbreghtiana*. Gh. t. 98.
 — *Lind'e'ni*. Orange-yellow. Mexico. 1870. Syn., *Justicia Lindeni*.

Jacob's Ladder. *Polemo'nium cæru'leum*.

Jacquemo'ntia. (Named after Victor Jacquemont, a natural historian. Nat. ord., *Convolvulacæ*; Tribe, *Convolvuleæ*. Allied to *Ipomæa*.)

Blue-flowered evergreen twiners; *cané'scens* requiring a moderately warm greenhouse, and *violac'ea* 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. cané'scens*. A variety of *J. violac'ea*.
violac'ea. August. E. Ind. 1808.
 — — *abbrevia'ta*. Blue, white. E. Ind. 1808. Syn., *Convolvulus pentanthos*. Jacq. Ic. t. 316. B. M. t. 2151.
 — — *cané'scens*. August. Mexico. 1845. Syn., *J. canescens*.

Jacqui'nia. (Named after the celebrated botanist *Jacquin*. Nat. ord., *Myrsineæ*; Tribe, *Theophrasteæ*. 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 fibry loam. Summer temp., 60° to 90°; winter, 58° to 65°. They require a rather high temperature at all times.

- J. arbo'rea*. 10. White. July. W. Ind. 1829.
arista'ta. 4. Orange. June. Sandwich Islands. 1796. Syn., *J. aurantiaca*.
 — *armilla'ris*. 6. White. June. W. Ind. 1768.
 — *auranti'aca*. See *J. aristata*.
 — *linea'ris*. 1. Red. June. W. Ind. 1823.
 — *macroca'rpa*. 6. Orange. June. Mexico. 1825.
 — *mexica'na*. Crimson. Mexico. 1866. Gh. t. 505.
 — *ruscifolia*. 3. White. S. Amer. 1729.
 — *smaragda'na*. See *Deherainia smaragdina*.

Jalap. *Exogo'nium pu'r'ga*.

Jamaica Ebony. *Bry'a e'benus*.

Jamaica Horse Bean. *Canava'lia ensifo'rmis*.

Jamaica Milkwood. *Bro'simum spu'rium*.

Jamaica Pepper. *Pime'nta vul'garis*.

Jamaica Redwood. *Gordo'nia hæmato'xylon*.

Jamaica Rose. *Meria'nia*.

Jambo'sa. (From *schamber*, the native name. Nat. ord., *Myrtaceæ*.) See **Eugenia**.

- J. amplexica'u'lis*. See *Eugenia amplexicaulis*.
 — *a'quea*. Wight Ic. t. 216. See *Eugenia aquea*.
 — *austra'lis*. See *Eugenia myrtifolia*.
 — *laurifo'lia*. See *Eugenia bifaria*.
 — *macroca'rpa*. See *Eugenia macrocarpa*.
 — *macrophy'lla*. See *Eugenia javanica*.
 — *malaccé'nsis*. B. M. t. 4408. See *Eugenia malaccensis*.
 — *purpu'rea*. See *Eugenia malaccensis*, var. *purpurea*.
 — *ternifo'lia*. See *Eugenia formosa*, var. *ternifolia*.
 — *vulga'ris*. B. M. t. 3366. See *Eugenia Jambo'sa*.

Ja'mesia. (Dedicated to *Dr. Edwin James*, its discoverer, the botanist and historian of Major Long's expedition to the Rocky Mountains in 1820. Nat. ord., *Saxifragææ*; Tribe, *Hydrangeææ*. Allied to *Hydrangea*.)

An ornamental hardy shrub. Seeds; cuttings of the ripened shoots in sandy loam—if put in a slight heat, they will strike more quickly. Good garden-soil.

- J. america'na*. White. Rocky Mountains, Colorado. 1865. B. M. t. 6142.

Jameso'nia. (Named after *Dr. Jameson*, professor of botany at Quito. Nat. ord., *Filices*.)

A greenhouse fern. See **FERNS**.

- J. imbrica'ta*. Brown. May.

Jani'pha. (Its Brazilian name is *Janipaba*. Nat. ord., *Euphorbiacææ*; Tribe, *Crotoneææ*.) See **Manihot**.

- J. æsculifolia*. See *Manihot æsculifolia*.
 — *fo'tida*. See *Manihot foetida*.
 — *Læfi'ngii*. See *Manihot carthagensis*.
 — *Ma'nihot*. B. M. t. 3071. See *Manihot utilis-sima*.

Jankæ'a. (Derivation not explained; probably commemorative. Nat. ord., *Gesneracææ*. Allied to *Ramondia*.)

Herbaceous perennial. For culture, see **GESNERA**.

- J. Heldre'i'chii*. Deep violet. Thessaly. 1889.

Japan Cedar. *Cryptome'ria*.

Japan Earth. *Aca'cia cate'chu* bark.

Japanese 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 Scabions. (An ancient name used by Theophrastus. Nat. ord., *Campanulacææ*; Tribe, *Campanuleææ*.)

Hardy herbaceous perennials, except *montana*, 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. foliosa*. 1. June. Spain. 1826.
 — *hu'nilis*. $\frac{1}{2}$. July. France. 1824.
 — *montana*. 1. June. Britain. Annual. Eng. Bot. ed. 3, t. 863.
 — *perennis*. 1. July. France. 1787.

Jasminum. Jasmine. (From *Ysmyn*, the Arabic name. Nat. ord., *Oleaceae*; Tribe, *Jasmineae*.)

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 *officinalis* will frequently communicate the property to the whole of the plant; peat and loam for the greenhouse species; good, common soil for the hardy; *revolutum* and *proliferum* require a little protection in winter.

HARDY DECIDUOUS CLIMBERS, ETC.

- J. affine*. June. Himalayas. 1843. Shrub. B. R. 1845, t. 26.
 — *fruticans*. 3. Yellow. July. South Europe. 1570. Shrub. B. M. t. 461.
 — *heterophyllum*. 14. June. Nepaul. 1820. Shrub. Ref. Bot. t. 156.
 — *humile*. 3. Yellow. July. South Europe. 1656. Deciduous.
 — *officinalis*. 15. July. E. Ind. 1548. B. M. t. 31.
 — *floribus plenis*. 15. July. E. Ind.
 — *foliis argenteis*. 15. July. E. Ind.
 — *foliis aureis*. 15. July. E. Ind.

HARDY EVERGREEN CLIMBERS, ETC.

- J. pubigerum*. 10. Yellow. June. Nepaul. 1827. Evergreen.
 — *Reevesii*. Yellow. September. Shrub.

GREENHOUSE EVERGREEN CLIMBERS.

- J. acuminatum*. 10. June. N. Holland. 1820. B. R. t. 1296.
 — *azoricum*. 5. July. Madeira. 1724. B. R. t. 89.
 — *capense*. 8. May. Cape of Good Hope. 1816. Shrub. Syn., *J. angulare*, var. *glabratum*.
 — *floridum*. Yellow. July. Japan and China. 1842. B. M. t. 6719. Syn., *J. subulatum*.
 — *glaucum*. 3. August. Cape of Good Hope. 1774. B. R. t. 203.
 — *gracile*. 3. Norfolk Island. 1791. B. R. t. 606. Syn., *J. volubile*.
 — *grandiflorum*. 15. July. India. 1629. B. R. t. 91.
 — *lanceolatum*. Sylhet. 1826.
 — *ligustriflorum*. May. Nepaul. 1839. Shrub.
 — *nudiflorum*. 3. Yellow. December. China. 1844. Deciduous. B. M. t. 4649.
 — *odoratissimum*. 3. June. Madeira. 1656. B. M. t. 235.
 — *polyanthum*. Pink, white. Yunnan, China. 1891.
 — *pubigerum*. Yellow. Summer. N.W. India. There is also a variety, *glabrum*.
 — *subulatum*. See *J. floridum*.
 — *tortuosum*. 6. June. Cape of Good Hope. 1818.
 — *volutabile*. Jacq. H. Schoenb. t. 321. See *J. gracile*.
 — *Wallichianum*. B. R. t. 1409. Synonymous with *J. pubigerum*, var. *glabrum*.

STOVE EVERGREEN CLIMBERS.

- J. angustiflorum*. 10. E. Ind. 1816.
 — *lauriflorum*. B. R. t. 521.

- J. arboreascens*. 12. E. Ind. 1824. Shrub. Wight Ic. t. 699.
 — *auriculatum*. White. India. B. R. t. 264.
 — *australe*. 3. June. South Sea Islands. 1800. Syn., *J. simpliciflorum*.
 — *bracteatum*. 30. April. Sumatra. 1818. Wight Ic. t. 1248.
 — *campanulatum*. See *J. tortuosum*, var. *campanulatum*.
 — *caudatum*. 10. May. Sylhet. 1838. Deciduous. B. R. 1842, t. 26.
 — *dianthiflorum*. May. Deciduous.
 — *dimidum*. White. Australia. 1860.
 — *flexile*. 10. April. E. Ind. 1825. Jacq. H. Schoenb. t. 490.
 — *gracillimum*. 3. White. December. N. Borneo. 1881. B. M. t. 6559.
 — *hirsutum*. B. M. t. 1931. See *J. pubescens*.
 — *latiflorum*. 20. June. E. Ind. 1819. Twiner. Wight Ic. t. 703.
 — *lauriflorum*. 4. June. E. Ind. 1819.
 — *multiflorum*. May. Shrub. *J. multiflorum* of Andr. Rep. t. 496 is synonymous with *J. pubescens*.
 — *paniculatum*. 5. January. China. 1818. B. R. t. 690.
 — *pubescens*. 3. June. E. Ind. 1759. Shrub. Syn., *J. hirsutum* and *J. multiflorum* of Andr. Rep. t. 496.
 — *revolutum*. 12. Yellow. June. E. Ind. 1812. B. M. t. 1731.
 — *Sambac*. 6. E. Ind. 1665. Twiner. B. R. t. 1.
 — *floribus plenis*. 6. E. Ind. 1700.
 — *trifoliatum*. 6. E. Ind. 1730.
 — *scandens*. 10. August. E. Ind. 1820.
 — *simpliciflorum*. B. M. t. 980. See *J. australe*.
 — *stenoptalum*. White. Sylhet.
 — *syringiflorum*. April. E. Ind. 1838.
 — *trineve*. 20. E. Ind. 1804. B. R. t. 918.
 — *undulatum*. 5. January. China. 1819. B. R. t. 436.

Jasonia. (After *Jason*, the Argonaut. Nat. ord., *Compositae*; Tribe, *Inuloideae*.)

Hardy herbaceous perennial. For culture, see **INULA**.

- I. glutinosa*. $\frac{3}{4}$. Yellow. July. South Europe. 1816. Syn., *Inula saxatilis*.

Jateorhiza. (From *iatos*, healing, and *rhiza*, root; in allusion to the bitter tonic it furnishes, known as Calumba-root. Nat. ord., *Menispermaceae*.)

Herbaceous perennial, cultivated like **Cocculus**.

- J. Calumbae*. Pale green. Mozambique. Syn., *J. palmatus* and *Cocculus palmatus*. B. M. tt. 2970-1.

Ja'tropha. (From *iatros*, physician, and *trophe*, food; referring to its medicinal qualities. Nat. ord., *Euphorbiaceae*; Tribe, *Crotoneae*.)

Cassava bread and tapioca are made from the roots, although the juice is an acrid poison. Stove evergreen shrubs, except *herbacea*. 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 fibry loam. Summer temp., 60° to 85°; winter, 55° to 60°.

- I. carthaginensis*. Jacq. Vind. iii. t. 77. See *Manihot carthaginensis*.
 — *coccinea*. 4. Scarlet. Cuba. 1824.

- J. cu'reas*. Yellowish. Tropical America. Jacq. Vind. iii. t. 63.
 — *diversifolia*. 3. Scarlet. June. Cuba. 1809. Syn., *J. integerrima*. B. M. t. 1464.
 — *elastica*. A synonym of *Hevea guyanensis*.
 — *gossypifolia*. 3. Pink. Tropical America. B. E. t. 746. Wild Cassava. Syn., *J. staphisagrifolia*.
 — *integerrima*. B. M. t. 1464. See *J. diversifolia*.
 — *Læstingii*. } See *Manihot utilissima*.
 — *Ma'nihot*. }
 — *multifida*. 3. Green. July. S. Amer. 1696. Salis. Parad. t. 91.
 — *paniculata*. 4. Scarlet. July. Cuba. 1800. B. M. t. 604.
 — *podagrica*. 1½. Orange, red. Santa Martha. 1847. B. M. t. 4376.
 — *urens*. 4. Summer. Tropical America. B. C. t. 478.

Jefferso'nia. (Named in honour of T. Jefferson, president of the United States of North America. Nat. ord., *Berberidaceæ*; Tribe, *Berberææ*. Allied to *Diphylleja*.)

Hardy herbaceous perennial. Seeds and division of the plant, in spring; common, sandy garden-soil.

J. diphyl'la. White. May. N. Amer. 1792. B. M. t. 1513.

Je'hlia fuchsioi'des. See *Lopezia macrophylla*.

Jenki'nsia. (After Major Jenkins, who collected plants in Assam. Nat. ord., *Filices*.) A synonym of *Acrostichum*.

Jenkinso'nia. (After J. Jenkinson, who wrote on British plants in 1775. Nat. ord., *Geraniaceæ*.) A synonym of *Pelargonium*.

Jerdo'nia. (In honour of Surgeon-Major T. C. Jerdon, of the Indian army, an eminent ornithologist. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*.)

Small stove plants. Sandy loam. Moist atmosphere. Summer temp., 60° to 70°; winter, 50° to 55°.

J. indiae. ½. Lilac, crimson. Autumn. Neilgherri Mountains. 1870. B. M. t. 5814.

Jersey Thistle. *Centaurea isna'rdis*.

Jerusalem Artichoke (*Helianthus tuberosus*), 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 fruticos'a*.

Jerusalem Thorn. *Parkinsonia aculeata*.

Jessamine. *Jasminum officinale*.

Jet d'Eau. See **Fountain**.

Jew's Apple. *Solanum melongena*.

Job's Tears. *Co'ix*.

Joe Pye Weed. *Eupatorium purpureum*.

Jolli'fia africa'na. See *Telfairia pedata*.

Jone'sia. (Named after Sir W. Jones. Nat. ord., *Leguminosæ*.) See **Saraca**.

J. Asoca (B. M. t. 3018) and *J. pinnata*. See *Saraca indiae*.

— *sea'ndens*. See *Saraca triandra*.

Jonquil. *Narcissus Jonquilla*.

Jose'pha augu'sta, B. M. t. 4810. See *Bougainvillea spectabilis*.

Jossi'nia. See **Myrtus**.

J. Lama'rekii. Fl. Ser. t. 621. See *Myrtus elliptica*.

— *orbicula'ta*. A synonym of *Myrtus elliptica*.

Jove's Fruit. *Laurus diospy'ros*.

Juanullo'a. (Named after two Spaniards, Don G. Juan and Don Ulloa. Nat. ord., *Solanaceæ*; Tribe, *Cestrineæ*. Allied to *Cestrum*.)

Stove evergreen shrubs, with orange flowers. Cuttings in sand, under a glass, in hot-bottom-heat; rough peat; and a moist, high temperature, in a stove.

J. aurantiaca. June. S. Amer. 1840. Syns., *J. parasitica*, B. M. t. 4118, *Brugmansia floribunda* and *B. parviflora*.

— *eximia*. B. M. t. 5092. See *Dysochroma ezimia*.

— *parasitica*. B. M. t. 4118. A synonym of *J. aurantiaca*.

Juba'ea. (After Juba, ancient king of Numidia. Nat. ord., *Palmaceæ*; Tribe, *Cocoinææ*.)

Stove palm. Its small round fruits were sold in London as "Little Coker nuts." Seeds in hot-bed in spring. Rich loam.

J. spectabilis. 30. Chili. 1843.

Judas-tree. *Cercis*.

Ju'glans. Walnut. (From *Jupiter Jovis*, the heathen god, and *glans*, a nut. Nat. ord., *Juglandææ*.)

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 shoots 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. atlantifolia. Greenish. Spring.

— *alba*. Wats. Dendr. t. 148. See *Carya alba*.

— *amara*. See *Carya amara*.

— *cinelea*. 30. N. America. 1656. Jacq. Ic. t. 192. Butter Nut.

— *compressa*. See *Carya compressa*.

— *fraxinifolia*. See *Pterocarya fraxinifolia*.

— *nigra*. 30. Greenish. Spring. N. America. 1629. Wats. Dendr. t. 158.

— *obcordata*. See *Carya porcina*.

— *oliveformis*. See *Carya oliveformis*.

— *porcina*. See *Carya porcina*.

— *pterocephala*. See *Pterocarya caucasica*.

— *regia*. 50. Greenish. Spring. Persia. 1562. Common Walnut.

— *elongata*. Fruits much elongated. Syn., *J. regia*, var. *Bartheriana*.

— *laciniata*. 50. Persia.

— *longirostris*. Fruits with a long beak.

— *maculata*. 50. Persia.

— *pendula*. Branches pendulous.

— *serotina*. 50. Persia.

— *teucriana*. 50. Persia.

— *squamosa*. See *Carya alba*.

— *sulcata*. See *Carya sulcata*.

— *tomentosa*. See *Carya tomentosa*.

Jujube. *Zizyphus jujuba*.

Ju'lus. Snake millipede. *J. terrestris* has about 200 legs. Lead colour. Scaly, like the woodlouse. Is said to eat the root of the pansy.

J. pulchellus.—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. *J. 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. *Prosopis juliflora*.

Ju'ncus. Rush. (From *jungo*, to join; the stems being used as cordage. Nat. ord., *Juncææ*.)

Bog plants of little horticultural value.

J. effusus spiralis. Stems spirally twisted.

— *latevirens*. 3. Japan. 1880.

— *zebrinus*. See *Scirpus Tabernæmontani*.

June Berry. *Amelanchier*.

Ju'ngia. (After *Joachim Jung*, of Lübeck. Nat. ord., *Compositæ*.)

Stove evergreen shrub. Cuttings in sandy soil, under a bell-glass; sandy loam.

J. spectabilis. 3. Purple. August. Columbia. 1825. Syn., *Dumerilla paniculata*.

Juniper Moth. The Irish Juniper is sometimes much disfigured by the caterpillar of a small moth, bearing the name of *Ypsolophus marginellus*. The caterpillar is dark grey, with a slender reddish-brown line down the back, and a broader one of the same colour on each side. The head and the first segment of the body are dark brown; the other segments are each furnished with eight blackish hairs. It has four pairs of central, and one pair of anal, pro-legs. When the larvæ are hatched they commence to spin a web, fastening the leaves of the Juniper together in an irregular manner, much to their disfigurement; added to which, they feed upon the young leaves, and thereby render the shrubs still more unsightly. The moth is about two-thirds of an inch in expanse; the front wings are ochreous, with a white stripe along the front margin, and another just within the hind margin, curving up towards the tip of the wing; the hind wings are silvery grey.

The best plan to stay their ravages is to hand-pick and destroy the young larvæ as soon as they make the appearance, which is about the beginning of June.

Juni'perus. Juniper. (From the Celtic *juniperus*, rough. Nat. ord., *Coniferae*; Tribe, *Cupressineæ*.)

Seeds, which will retain their vitality for years, and when sown, seldom vegetate under a twelve-month, 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. barbadensis. 20. Florida. 1811. Barbadoes Cedar.

— *bermudiana*. 20. May. Bermuda. 1638. Bermuda Cedar.

— *capensis*. See *Widdingtonia juniperoides*.

— *flacida*. May. Mexico. 1836.

— *mexicana*. May. Mexico. 1846.

— *tetragona*. May. Mexico. 1836.

HARDY EVERGREENS.

J. canadensis. See *J. communis*, var. *canadensis*.

— *chinensis*. 10. May. China. 1804. Syn., *J. flagelliformis* and *J. Reevesiana*.

— *communis*. 5. May. Britain.

— *canadensis*. 20. May. Canada. 1820.

— *compressa*. Pyrenees.

— *hibernica*. Ireland.

- J. commu'nis na'na.* 2. May. Siberia.
 — *oblo'nga.* June.
 — *oblo'nga pe'ndula.* 5. May. Britain.
 — *sue'cica.* 12. May. N. Europe.
 — *craco'via.* 4. May. Poland. 1820.
 — *dau'rica.* 8. July. Danria. 1791.
 — *drupa'cea.* 4. May. Syria. 1820.
 — *exce'lsa.* 20. Siberia. 1806.
 — *glau'ca.* May. China. 1814.
 — *hemispha'rica.* May. Mount Etna. 1844.
 — *Herma'nni.* May.
 — *japo'nica.* 2. Japan and N. China.
 — *ly'cia.* 10. May. South Europe. 1759.
 — *macroca'rpa.* May. Greece.
 — *neoborace'nsis.* May.
 — *oblo'nga.* May. America. 1829.
 — *oxyce'drus.* 15. May. Spain. 1739.
 — *phoeni'cea.* 20. May. South Europe. 1683.
 — *prostra'ta.* 3. May. N. Amer.
 — *recu'rva.* 4. May. Nepal. 1817.
 — *religio'sa.* May.
 — *rufe'scens.* 10. S. Europe.
 — *sabi'na.* 4. May. South Europe. 1648.
 — *alpi'na.* 13. May. Britain.
 — *cupressifo'lia.* 4. May. South Europe. 1548.
 — *fo'lis variega'tis.* 4. May. Europe.
 — *tamarisifo'lia.* 4. May. South Europe. 1502.
 — *variega'ta.* 5. May. South Europe.
 — *sabino'ides.* 2. Spain.
 — *Smi'thi.* May. Nepal.
 — *spha'rica.* 30. N. China.
 — *squama'ta.* 4. May. Nepal. 1824.
 — *thurifera.* 10. May. Spain. 1752.
 — *uvi'fera.* See *Libocedrus thurifera.*
 — *virginia'na.* 30. May. N. Amer. 1664.
 Red Cedar. Syns., *J. Chamberlaini* and *J. Schottii.*
 — *carolinia'na.* May. Carolina.
 — *hu'milis.* 12. May. N. Amer. 1800.

Jupiter's Beard. *Anthyllis ba'r-ba Jo'vis.*

Jupiter's Eye and Jupiter's Beard. *Sempervivum tecto'rum.*

Juri'nea. (Derivation not explained. Nat. ord., *Compositæ*; Tribe, *Cynaroidæ*. Allied to *Serratula*.)

Hardy herbaceous perennials, with purple flowers. Seeds and division of the plant in spring; common soil.

- J. ala'ta.* 2-3. Violet. Caucasus.
 — *depre'ssa.* 1. June. Caucasus. 1837.
 — *specta'bilis.* 1. June. Europe. 1837.
 — *subcau'lis.* June. Caucasus. 1837.

Jussie'a. (Named after the celebrated botanical family of *Jussieu*. Nat. ord., *Onagraceæ*. Syn., *Jussieuia*. Allied to *Ludwigia*.)

All stove aquatics, except *grandiflora*, which belongs to the greenhouse, and *frutescens*, which is a shrub, and all yellow-flowered. Cuttings, divisions, and seeds; loamy soil, in basins of water.

- J. exalta'ta.* Andr. Rep. t. 621. See *J. suffruticosa.*
 — *frutescens.* Yellow. June. 1824. Evergreen shrub.
 — *grandiflora.* 13. Yellow. August. Carolina. 1812. B. M. t. 2122.
 — *macroca'rpa.* 2. Yellow. July. New Grenada.
 — *cilia'ta.* Yellow. Columbia. 1879. Half-hardy.
 — *octo'fila.* Yellow. July. W. Indies. Syn., *J. octovalvis.*

- J. octovalvis.* See *J. octoflora.*
 — *ovalifo'lia.* Yellow. July. Madagascar. B. M. t. 2530.
 — *pilo'sa.* Yellow. July. Caraccas. 1829.
 — *re'pens.* 1. Yellow. August. W. Ind. 1817.
 — *sca'bra.* 4. Yellow. July. S. Amer. 1816.
 — *suffrutico'sa.* 13. Yellow. August. India. 1808. Syn., *J. exaltata.*
 — *Swartzia'na.* Yellow. July. W. Ind. 1826.
 — *villo'sa.* Yellow. July. E. Ind. 1826.

Justi'cia. (Named after *J. Justice*, a celebrated Scotch horticulturist. Nat. ord., *Acanthaceæ*; Tribe, *Justiceæ*. 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*, *car'nea*, *coma'ta*, *formosa*, *lu'cida*, *salviaeflora*, and *specio'sa*.

S. E. = Stove evergreen shrub. S. P. = Stove herbaceous perennial.

- J. Adhato'da.* B. M. t. 861. See *Adhato'da vasica.*
 — *a'ta.* A synonym of *Eranthemum album.*
 — *ama'bilis.* Red. S. America. S. E.
 — *asperu'la.* B. C. t. 1681. See *Phlogacanthus asperulus.*
 — *bicolor.* B. M. t. 1423. See *Eranthemum bicolor.*
 — *bracteola'ta.* Jacq. Ic. t. 205. See *Thyracanthus bracteolatus.*
 — *caly'tricha.* B. M. t. 2816. See *Schaueria calyctotricha.*
 — *campylo'stemon.* 2. White, with purple spots. S. Africa. 1883.
 — *caracasa'na.* Jacq. Ic. t. 206. See *Dianthera caracasana.*
 — *car'nea.* B. R. 1397. See *Jacobinia carnea.*
 — *carthagine'nsis.* 13. Purple. July. Cartbagen. 1792. S. E.
 — *cilia'ris.* 1. White. July. W. Indies. 1780. Stove annual.
 — *cilia'ta.* Jacq. H. Vind. t. 104. See *Schwabea ciliaris.*
 — *cocci'nea.* B. M. t. 432. See *Jacobinia cocinea.*
 — *coma'ta.* 2. Purple. July. Jamaica. 1795. S. P. A synonym of *Dianthera comata.*
 — *cuspidata.* 13. July. Arabia. 1820.
 — *Echo'livum.* 3. Blue. July. E. Indies. 1759. B. M. t. 1347. Now referred to *ECBOLIUM.*
 — *echio'ides.* 1. Red. April. Tropical India. 1820. Syn., *Andrographis echioides.* S. P.
 — *elongata.* 2. Red. May. E. Indies. 1820. Syn., *Andrographis elongata.* S. P.
 — *eustachia'na.* B. R. t. 309. Now referred to *CHETOTHYLAX:*
 — *flavi'coma.* B. R. t. 1027. See *Schaueria calyctotricha.*
 — *formosa.* 2. Purple. May. 1818. S. E.
 — *furca'ta.* 5. Violet. April. Peru. 1795. S. E. Trailer. Jacq. H. Schoenb. t. 3.
 — *gendaru'ssa.* White or rose with purple spots. India. B. R. t. 635.
 — *genicula'ta.* B. M. t. 2487. See *Dianthera geniculata.*
 — *gutta'ta.* B. R. t. 1334. See *Phlogacanthus guttatus.*

- J. lanceolata*. 3. Red. April. E. Indies. 1818. S. E.
 — *lindæni*. See *Jacobinia Lindæni*.
 — *lucida*. B. M. t. 1014. See *Dianthera lucida*.
 — *lythospermifolia*. 3. Purple. April. Peru. 1796. S. E. Trailer. Jacq. H. Schoenb. t. 4.
 — *Macdonellæ*. Yellow. November. S. E.
 — *maculata*. 2. Purple. June. W. Indies. 1823. B. C. t. 626.
 — *marmorata*. Leaves pale shining green marbled with white. 1881.
 — *martiniensis*. Jacq. H. Vind. iii. t. 22. See *Dicliptera martiniensis*.
 — *nasuta*. B. R. t. 325. See *Rhinacanthus communis*.
 — *nemorosa*. 2. Purple. May. W. Indies. 1795. S. P. Syn., *Beloperone nemorosa*.
 — *nervosa*. B. M. t. 1358. See *Dædalacanthus nervosus*.
 — *nitida*. Andr. Rep. t. 570. See *Thysacanthus nitidus*.
 — *nodosa*. B. M. t. 2914. See *Dianthera nodosa*.
 — *orchotides*. B. C. t. 827. See *Sphinctacanthus Griffithii*.
 — *patula*. White. April. South Africa. 1824. Greenhouse evergreen.
 — *pectoralis*. 3. Purple. May. W. Indies. 1787. B. R. t. 796. A synonym of *Dianthera pectoralis*.
 — *pedunculosa*. B. M. t. 2387. See *Dianthera americana*.
 — *peruviana*. 2½. Violet, white. Autumn. Peru. B. M. t. 430.
 — *pitata*. B. R. t. 1227, and var. *lucida-sanguinea*. B. M. t. 1870. See *Graptophyllum hortense*.
 — *polystachya*. 2. Pink. June. Guiana. 1821. S. E.
 — *pulcherrima*. Jacq. Ic. t. 201. See *Aphelandra cristata*.
 — *puumila*. ½. April. S. America. 1820. S. E.
 — *quadrangulata*. B. M. t. 2845. See *Phlogacanthus asperulus*.
 — *ramosissima*. 2. Purple. June. E. Indies. 1825. S. E.
 — *reflexiflora*. 1. Purple. June. W. Indies. 1824. S. P.
 — *retusa*. Purple. Early winter. W. Indies. B. C. t. 724.
 — *Roxburghiana*. See *Peristrophe tinctoria*. S. E.
 — *secunda*. B. M. t. 2080. A synonym of *Dianthera secunda*.
 — *speciosa*. B. M. t. 2722. See *Peristrophe speciosa*.
 — *thyrsiflora*. See *Phlogacanthus thyrsiflorus*.
 — *ventricosa*. White, red. June. China. 1826. B. M. t. 2766. S. E.
 — *venusta*. B. R. t. 1380. See *Gymnostachyum venustum*.
 — *vitellina*. See *Phlogacanthus asperulus*.

Jute-plant. *Co'rchorus capsularis*.

K.

Kadsu'ra. (The Japanese name. Nat. ord., *Magnoliaceæ*; Tribe, *Schizandraceæ*.)

A trailing half-hardy evergreen. Cuttings of half-ripened wood in sand, under a bell-glass, and in heat, in May; peat and loam.

- K. japonica*. White. June. Japan. 1846.
 — *propinqua*. See *Schizandra propinqua*.

Kæmpferia. Galangale. (Named after *Kæmpfer*, a German naturalist. Nat. ord., *Scitamineæ*; Tribe, *Zingiberaceæ*. Allied to *Curcuma*.)

Stove herbaceous perennials. Division of the plant as fresh growth commences; sandy loam, fibry peat, and leaf-mould. Temp., 45° to 55° when at rest; from 60° to 85° when growing.

- K. elegans*. 1. Purple. Pegu. 1828.
 — *galanega*. 1. White, purple. July. E. Ind. 1728.
 — *Gilbertii*. Purple, white. E. Indies. G. C. 1882, xvii. p. 713.
 — *marginata*. 1. Blue. July. E. Ind. 1822.
 — *ovalifolia*. 1. Blue. June. Malacca. 1822.
 — *Pari'shii*. 1. White, purple. July. Moulmein. 1867.
 — *Rosecea* na. India.
 — *rotunda*. 1. Red, white. July. E. Ind. 1764.
 — *secunda*. 1. Bright purple, white. Assam. 1888. B. M. t. 6999.
 — *speciosa*. Violet-purple. S. Africa. 1870.
 — *vittata*. ¾. White, yellow. Sumatra. 1882.

Kagene'ckia. (Named after *Count Kageneck*, a patron of botany. Nat. ord., *Rosaceæ*; Tribe, *Quillajaceæ*.)

Half-hardy evergreen trees, 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°. *K. cratægifolia* has stood for years against a conservatory wall in the Chiswick Gardens, and produced fruit there in 1837. The male flowers are in clusters; the female flowers are solitary.

- K. cratægifolia*. 10. White. June. Chili. 1830. Syn., *K. cratægoides*. B. R. t. 1836.
 — *oblonga*. 30. White. Autumn. Chili. 1830.

Kalanko'e. (From the Chinese name of one of the species. Nat. ord., *Crassulaceæ*. 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. acutiflora*. 2. White. August. E. Ind. 1806. Syn., *Vareia acutiflora*. Andr. Rep. t. 560.
 — *ægyptiaca*. 2. Yellow. July. Egypt. 1820.
 — *carnea*. 1½. Rosy lilac. South Africa. 1887.
 — *ceratophylla*. 2. Yellow. July. China. 1820.
 — *crenata*. 2. Yellow. August. Sierra Leone. 1793. Syn., *Vareia crenata*. Andr. Rep. t. 21.
 — *farinacea*. ¾. Scarlet. Socotra. 1880. Gf. t. 1143.
 — *grandiflora*. Greenish-yellow. India. 1864. B. M. t. 5460.
 — *laciniata*. 2. Yellow. July. E. India. 1781.
 — *rotundifolia*. 2. White. July. South Africa. 1820. Ref. Bot. t. 244.
 — *spathulata*. 2. Yellow. July. China. 1820. Syn., *Cotyledon hybrida*.
 — *va'rriana*. Yellow. July. E. Ind.

Kale. See **Borecole**.

Ka'l'mia. (Named after *Peter Kalm*, a Swedish botanist. Nat. ord., *Ericaceæ*; Tribe, *Rhodoreæ*. 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. andromedifolia. 1-4. Rosy-purple. 1883.
— *angustifolia*. 3. June. 1736. B. M. t. 331.

Sheep laurel.

- *foliis variegatis*. 2. June.
- *mi'nima*. 2. June.
- *na'na*. 2. June.
- *ova'ta*. 2. June.
- *pu'mila*. 2. June.
- *ro'sea*. 3. June.
- *ru'bra*. 3. June.
- *cunea'ta*. 2. White, red. June. 1820.
- *glau'ca*. 2. Purple. April. 1767.
- *rosmarinifolia*. 2. April. 1812.
- *hirsu'ta*. $\frac{1}{2}$. August. 1786. B. M. t. 138.
- *latifolia*. 8. June. 1734.
- *Pava'rti*. Garden variety. Garden. July 1, 1832.

Kalosa'nthes. A synonym of *Rochea*, and now erroneously applied to *Cra'ssula coccinea* and its varieties. See *Rochea*.

Kanguru Vine. *Cissus anta'rticus*.

Ka'ratas. (Probably a native name. Nat. ord., *Bromeliaceæ*; Tribe, *Bromeliceæ*. Syn., *Regelia*.)

Stove perennials. For cultivation, see *BROMELIA*, in which genus the species were formerly included.

- K. acanthocra'ter*. Lilac. May. Brazil. 1877. B. M. t. 6904. Syn., *Nidularium acanthocra'ter*.
- *antiaca'ntha*. Base of leaves brownish; bracts deep scarlet. A synonym of *Bromelia fastuosa*?

Kareli'nia. (Derivation not explained. Nat. ord., *Compositæ*; Tribe, *Inuloidææ*.) United with *Pluchea* in the Genera Plantarum, but retained as a distinct genus by Boissier.

Hardy herbaceous. Divisions of the plant in spring; common garden-soil.

- K. caspia*. Purple. August. Caspia.
- Kaulfu'ssia.** (Named after *Dr. G. F. Kaulfuss*, a Professor of Botany at Halle. Nat. ord., *Filices—Marattiaceæ*. Allied to *Danæa*.)

A curious stove fern, with a frond like a chestnut-leaf. For cultivation, see *FERNS*.

- K. æsculifolia*. 2. E. Indies. Syn., *Aspidium æsculifolium*.
- *amelloides* of B. M. t. 2177 is a Composite. See *Charieis heterophylla*.
- *ciliata*, also a Composite, is a synonym of *Felicia tenella*.

Kauri Pine. *Da'mmara australis*.

Keferstei'nia. (In honour of *Mr. Keferstein* of Kröllwitz, a cultivator of orchids. Nat. ord., *Orchidææ*; Tribe, *Vandææ*.) See *Zygopetalum*.

Kelp is the ash remaining after seaweed is burnt, and has been used with great advantage as a manure to potatoes, brocoli, 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*.

Kenne'dya. (Named after *Mr. Kennedy*, of the firm of Lee and Kennedy, nurserymen. Nat. ord., *Leguminosææ*; Tribe, *Phaseoleææ*.)

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. coccinea*. 10. Scarlet. June. 1803. B. M. t. 2664. Syns., *K. dilatata*, B. R. t. 1526, *Zichya angustifolia*, *Z. coccinea*, Maund Bot. t. 120, *Z. tricolor*, B. R. 1835, t. 52, and *Z. villosa*.

— *Comptonia'na*. See *Hardenbergia Comptoniana*.

— *corda'ta*. B. R. t. 944. See *Hardenbergia monophylla*.

— *dilata'ta*. B. R. t. 1526. See *K. coccinea*

— *Frewood'it*. Dull carmine. 1864. Evergreen climber. Rev. Hort. 1866, p. 332.

— *glabra'ta*. 6. Orange. May. 1834. B. R. t. 1845. Syn., *Zichya glabrata*. B. M. t. 3956.

— *heterophylla*. A form of *K. coccinea*.

— *inophylla*. B. R. t. 1421. A form of *K. coccinea*.

— *macrophylla*. See *Hardenbergia Comptoniana*.

— *Marrya'tta*. B. R. t. 1790. See *K. prostrata*, var. *major*.

— *monophylla*. } See *Hardenbergia mono-*

— *longiracemosa*. } *phylla*.

— *nigricans*. 3. Purple, green. March. 1832. B. R. t. 1715.

— *ova'ta*. } Forms of *Hardenbergia mono-*

— *cærulea*. } *phylla*.

— *parviflora*. 4. 1824.

— *prostra'ta*. 4. Scarlet. April. 1790. Syn., *Glycine coccinea*. B. M. t. 270.

— *major*. 4. Scarlet. April. 1834. Syn., *K. Marryatta*. B. R. t. 1790.

— *minor*. Red. June. 1836.

— *rubicunda*. 10. Dark red. June. Brazil. 1788. Syns., *Amphodus ovatus*, B. R. t. 1101, and *Glycine rubicunda*, B. M. t. 268.

— *sericea*. 4. Scarlet. May. 1824.

— *Stirlingii*. 3. Scarlet. May. 1834. B. R. 1845.

Ke'ntia. (In honour of *Lieut.-Colonel Kent*. Nat. ord., *Palmaceææ*; Tribe, *Arecæææ*.)

Stove palms. For cultivation, see *ARECA*, to which it is allied.

- K. australis*. Lord Howe's Island. 1872.
 — *Belmoreana*. See *Howea Belmoreana*.
 — *Canterburyana*. See *Hedysepe Canterburyana*.
 — *elegantissima*. 1888. Probably a species of *Howea*.
 — *Forsteriana*. See *Howea Forsteriana*.
 — *gracilis*. See *Kentioopsis divaricata*.
 — *Lindleyi*. See *Kentioopsis macrocarpa*.
 — *Lucida*. 1878.
 — *Macarthuria*. New Guinea. 1879.
 — *sapidula*. 25. New Holland. 1842.
 — *Wendlandii*. Queensland. 1878.

Kentio'opsis. (From *Kentia*, and *opsis*, like; resembling the genus *Kentia*. Nat. ord., *Palmaceæ*; Tribe, *Areceæ*.)

Stove palms. For cultivation, see ARECA.

- K. divaricata*. 30. New Caledonia. 1876. III. Hort. t. 409. Syn., *Kentia gracilis*.
 — *macrocarpa*. New Caledonia. 1876. Rev. Hort. 1884, p. 372. Syn., *Kentia Lindleyi*.

Kentrophyllum. (From *kentron*, a spine, and *phyllon*, a leaf; literally, spine-leaved. Nat. ord., *Compositæ*; Tribe, *Cynarioideæ*.) United with **Carthamus** in the Genera Plantarum. Syn., *Heracantha*.

Hardy annuals, except *arborescens*, which is a half-hardy evergreen shrub. Seed in April, but better still in a hotbed, in March, and transplanted in May. Cuttings of the young shoots of *arborescens* under a hand-light, in spring; common garden-soil.

- K. arborescens*. 6. Yellow. August. Spain. 1831. Syns., *Carthamus arborescens*, *C. arboreus*, and *Onobroma arborescens*.
 — *creticum*. 2. White. June. Candia. 1781. Syn., *Carthamus creticus*.
 — *glaucum*. 14. Purple. July. Tauria. 1817. Syns., *Carthamus glaucaus* and *Onobroma glaucum*.
 — *lanatum*. 2. Yellow. July. South Europe. 1596. Syn., *Carthamus lanatus*.
 — *leucocaulon*. 1. White. June. Greece. 1800. Syns., *Carthamus leucocaulis* and *Onobroma leucocaulon*.
 — *tauricum*. 2. Yellow. June. Caucasus. 1818. Syns., *Carthamus tauricus* and *Heracantha taurica*.

Kentucky Coffee-tree. *Gymnocladus*.

Kerama'nthus. (From *keramos*, a jar, and *anthos*, a flower; in allusion to the form of the calyx. Nat. ord., *Passifloraceæ*. Allied to *Modecca*.)

An interesting perennial. It requires to be grown in a dry stove, like that where cacti and other succulents are grown. Rich sandy loam.
K. Kirkii. 2. Green. Zanzibar. 1875.

Kercho'vea. (After *Dr. Kerchove*. Nat. ord., *Scitamineæ*; Tribe, *Marantææ*.) See **Stromanthe**.

- K. floribunda*. Belg. Hort. 1882, p. 201, t. 8. See *Stromanthe Porteana*.

Ke'rria. (Named after *M. Kerr*, once superintendent of the Botanic Garden, Ceylon. Nat. ord., *Rosaceæ*; Tribe, *Spirææ*. Allied to *Spiræa*.)

Hardy deciduous shrub, with yellow flowers, from Japan, formerly called *Corchorus japonicus*. Cuttings of the young shoots under a hand-

light; layers, and division of the plant; common loam.

- K. japonica*. 3-6. Blooms through summer. 1700. B. M. t. 1873. Syn., *Corchorus japonicus*. B. M. t. 1296.
 — *jo're-pleno*. 6. June. 1700.

Ketelee'ria. A synonym of **Abies**.

Kidney Bean. *Phaseolus vulgaris*.

Varieties.—There are three kinds—the *Runners*, or twining varieties; the *Dwarfes*; 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 *Prodomet*. 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 forcing the plants in a hotbed, 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 meanness 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 fire 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, etc., 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, etc., 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. *Anthyllis*.

Kielme'jera. (Named after a German patron of botany. Nat. ord., *Ternströmiaceæ*; Tribe, *Bonnetiaceæ*.)

Stove evergreen tree. Cuttings of young shoots getting firm, in sand, under a bell-glass, and in heat; fibry, sandy loam. Summer temp., 60° to 75°; winter, 45° to 55°.

K. excel'sa. 60. White. July. Brazil. 1833.

Ki'ngia. (After *Captain P. G. King*, Governor of New South Wales. Nat. ord., *Junceæ*.)

Greenhouse perennial. For culture, see XANTHORRHEA.

K. australis. 4. Brownish. West Australia.

King of the Woods. *Anectochilus regalis*.

Kirengeshoma. (From the native name. Nat. ord., *Saxifrageæ*; Tribe, *Hydrangeæ*.) Allied to *Hydrangea*, which see for culture.

K. palmeta. 3-4. Yellow. Japan. G. C. 1891, ix. p. 202.

Kirganelia. (Derived from the Malabar name. Nat. ord., *Euphorbiaceæ*.) See **Phyllanthus**.

K. elegans. See *Phyllanthus casticum*.

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.

Kleinho'via. (Named after *Mr. Kleinhoff*, a Dutch botanist. Nat. ord., *Sterculiaceæ*; Tribe, *Buettneriaceæ*. Allied to *Thebroma*.)

Stove evergreen tree. Cuttings of ripe young shoots in sand, under a bell-glass, in heat; peat and loam. Summer temp., 60° to 90°; winter, 50° to 60°.

K. ho'spita. 20. Pink. Constant. Moluccas. 1800.

Klein'ia of Haworth. (After *Dr. Klein*. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*.) United with **Senecio** in the Genera Plantarum.

Greenhouse evergreens. For culture, see **CACALIA**.

- K. articulata*. 1½. Yellow. September. South Africa. 1775. Syn., *Cacalia articulata*.
 — *carnea*. 1½. Yellow. June. South Africa. 1757. Syn., *Cacalia carnea*.
 — *Haworthii*. 2. Yellow. South Africa. 1795. Syn., *Cacalia Haworthii*.
 — *neriifolia*. 3. Yellow. September. Canary Is. 1732. Syn., *Cacalia Kleinia*.
 — *papillaris*. 2. Yellow. South Africa. 1727. Syn., *Cacalia papillaris*.
 — *pugioniformis*. 1. Yellow. 1820. Syns., *Cacalia longifolia* and *C. pugioniformis*.
 — *radicans*. ½. Yellow. July. South Africa. 1823. Creeper. Syn., *Cacalia radicans*.

Klu'gia. (After *Dr. W. Klug*, a patron of botany. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*. Syn., *Glossanthus*.)

Stove herbaceous evergreens. Cuttings.

- K. Notonia'na*. 1. Deep blue, yellow. September. Neilgherry Hills, India. 1848. Syn., *Glossanthus malabaricus*, *G. Notoniana* and *Wulfenia Notoniana*.
 — *zeylanica*. Blue, yellow, white. September. E. Indies. Syns., *K. Notoniana* of B. M. t. 4620, not elsewhere, *Glossanthus zeylanicus*.

Knigh'tia. (Named after *J. A. Knight*, late president of the London Horticultural Society. Nat. ord., *Pro-*

teaceæ; Tribe, *Embothriaceæ*. Allied to *Lomatia*.)

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. exce'lsa. 10. Flesh. New Zealand. 1821. Linn. Trans. x. t. 20.

Knigh't's Star. *Hipped'strum*.

Kniph'o'fia. (Named after *Johann Hieronymus Kniphof*, a Professor of Medicine at Erfurt in the eighteenth century. Nat. ord., *Liliaceæ*; Tribe, *Hemerocalleæ*. Syn., *Tritoma*. Allied to *Blandfordia*.)

Hardy herbaceous perennials. Divisions of the plants in the spring. Ordinary garden-soil. Few plants make such a striking appearance, or can boast of so much beauty, as the late-autumn-flowering of *K. aloides*; this is a plant that should be grown in every garden, being perfectly hardy and will grow in any light soil, and moreover has the excellent quality of flowering when nearly all other plants are past. Some garden hybrids are described in Bull. Soc. Tosc. 1891, p. 81.

- K. aloides*. 3. Orange, scarlet. Autumn. S. Africa. 1707. Syn., *Tritoma wvaria*. B. M. t. 758.
 — *glaucescens*. S. Africa. 1859. Garden, 1889, xxxvi. p. 458.
 — *grandiflora*. S. Africa. 1859.
 — *ma'sima*. 5-7. Yellow. Orange Free State. 1862.
 — *serotina*. S. Africa. 1859.
 — *carnea*. 1. Apricot-yellow. Autumn. Abyssinia. 1879.
 — *caule'scens*. Red and yellow. S. Africa. 1862.
 — *com'sa*. 1-2. Yellow. August. Abyssinia. 1879. B. M. t. 6569.
 — *folio'sa*. 3. Yellow. Abyssinia. 1876. B. M. t. 6742. Syn., *K. Quartiniama*.
 — *Ki'r'kia*. 4. Reddish-orange. S.E. Tropical Africa. 1887.
 — *Leichtli'nii*. 4. Vermilion-red, yellow. August. Abyssinia. 1880. B. M. t. 6716.
 — *dista'chya*. Yellow. Abyssinia. 1884.
 — *Maco'wani*. 1. Orange-red. S. Africa. 1874.
 — *maroc'cana* is a garden corruption of the spelling of *K. Macowani*.
 — *natalesis*. 2-3. Orange-red, veined darker red. Natal. 1889.
 — *No'rthica*. 4-6. Pale yellow, reddish. South Africa. 1889.
 — *pallidiflora*. 1-2. White. Madagascar. 1887.
 — *præ'cox*. 2-3. Scarlet, yellow. Autumn. S. Africa. 1862.
 — *Quartiniama*. See *K. foliosa*.
 — *Roo'peri*. 4. Orange-red, yellow. Late autumn. British Caffaria. 1854. Syn., *Tritoma Rooperi*.

Knol-kohl, or **Kohl-rubi** (*Bra'ssica caul'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 scalloped 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 *turnippy*. 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.

Knó'xia. (Named after *R. Knox*, a traveller, long resident in Ceylon. Nat. ord., *Rubiaceæ*; Tribe, *Knocixee*.)

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. Pink. July. Bengal. 1818. Syn., *K. lævis*.

— *corymbo'sa.* 2-3. White or purplish. Summer. India. 1818. Syns., *K. exserta*, *K. sumatrensis*, *K. teres*, and *K. umbellata*.

— *zeyla'nica.* $\frac{1}{2}$. White. July. Ceylon. 1828.

Kœhle'ria. (In honour of *M. Kohl*. Nat. ord., *Gesneraceæ*.) See **Isoloma**.

K. hond'nsis. See *Isoloma hondensis*.

— *ignora'ta.* See *Isoloma igno'ratum*.

— *lana'ta.* See *Isoloma longipedunculatum*.

— *rupe'stris.* See *Isoloma rupe'stre*.

— *Seema'nna.* See *Isoloma Seemanni*.

Kœlenstei'nia. (Commemorative. Nat. ord., *Orchideæ*.) See **Aganisia**.

K. gram'i'nea. See *Aganisia graminea*.

— *iono'ptera.* See *Aganisia ionoptera*.

Kœlreute'ria. (Named after *Kœlreuter*, a celebrated German botanist,

the father of hybridizing plants. Nat. ord., *Sapindaceæ*; Tribe, *Sapindeæ*.)

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. Bright yellow. Yunnan, China.

Rev. Hort. 1868, p. 393, fig. 93.

— *panicula'ta.* 10. Yellow. July. China. 1763. B. R. t. 330.

Kohl-rabi or **rubi.** See **Knol-kohl**.

Kola-Nut. *Co'la acumina'ta.*

Kolpako'wskia. See **Ixiolirion** *Kolpakowskianum*.

Ko'psia. (Named after *Professor Kops*. Nat. ord., *Apocynaceæ*. 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. Red. May. Pegu. 1818. B. M. t. 4220. Syn., *Cerbera fruticosa*, B. R. t. 391.

Korolko'wia. (Commemorative. Nat. ord., *Liliaceæ*; Tribe, *Tulipeæ*.) A synonym of **Fritillaria**.

K. di'scolor. A synonym of *Fritillaria Sewerzowi*, var. *bicolor*.

— *Sewerzowi.* See *Fritillaria Sewerzowi*.

Krame'ria. (Named after the two *Kramers*, German botanists. Nat. ord., *Polygalaceæ*.)

This is the intensely-astringent called *Rhathany-root* in South America. Stove evergreen shrub. Cuttings in sand, under a glass, in heat; sandy loam and fibry peat. Summer temp., 60° to 90°; winter, 48° to 60°.

K. paucifo'ra. 4. Red. Mexico. 1824.

Kreysig'gia. (Named after *Kreysig*, a German botanist. Nat. ord., *Liliaceæ*; Tribe, *Uvularieæ*. 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. multifo'ra. 1. Rose. June. N.S. Wales. 1823. B. M. t. 3905. Syn., *Schelhammera multiflora*, B. C. t. 1511.

Ku'hnia. (Named after *Adam Kuhn*, an American botanist. Nat. ord., *Compositæ*; Tribe, *Eupatoriaceæ*. 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. A synonym of *K. eupatorioides*.

— *eupatorioid'es.* $\frac{1}{2}$. White. July. N. Amer. 1812.

GREENHOUSE.

K. lineari'folia. Brazil. 1829.

— *rosmarinifo'lia.* White. July. Cuba. 1828.

Ku'mquat. *Citrus japo'nica*.

Kunthia. (Named after *C. S. Kunth*, a Prussian botanist. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.) See **Chamædorea**.

K. Deppæna. A synonym of *Chamædorea elegans*.
— *montana.* See *Chamædorea Lindeniana*.

Kunzea. (After *Gustav Kunze*, a botanist of Leipzig. Nat. ord., *Myrtaceæ*.)

Heath-like greenhouse shrubs, from Australia.
K. Baute'ri. 2. Red. Australia. Syn., *Calistemon macrostachyum*, B. R. 1838, t. 7.
— *corifolia.* White. Australia. Syn., *Leptospermum ambiguum*, B. C. t. 1998.
— *pomifera.* The fruits, called "Muntries," are used by the natives of Australia for making jam. G. C. 1889, v. p. 201, fig. 36.

Ky'dia. (Named after *Col. Kyd*, first director of the Calcutta Botanic Garden. Nat. ord., *Malvaceæ*; Tribe, *Malvæ*. Allied to *Sida* and *Abutilon*.)

Stove evergreen trees, with white flowers. Cuttings of half-ripened shoots in sand, under a bell-glass, and in heat; sandy peat and fibry loam, well-drained. Summer temp., 60° to 85°; winter, 50° to 60°.

K. calyc'na. 30. White. Tropical Himalayas. 1818.
— *frat'erna.* A synonym of *K. calycina*.

Kylli'ngia. (Named after *Peter Kylling*, a Danish botanist of the seventeenth century. Nat. ord., *Cyperaceæ*; Tribe, *Scirpeæ*.)

Tufted grass-like perennials. For cultivation, see *CYPERUS*, to which they are allied.

K. monocephala. Whitish. India, China, etc. 1868. Syn., *Cyperus Lacouri*.

L.

Label. The substances and shapes used in making labels are now very numerous, and their selection must depend upon the requirements and taste of the user. When required for a short time, such as when plants are sent from one locality to another, thick paper labels, about one inch wide and three inches long, will suffice. For marking seedlings small slips of deal wood, painted on one side, are useful. The name of the plant in both these cases should be written in black-lead pencil, not in ink, on account of its liability to run, when moistened, either by rain, or in watering the plants. Of those intended for more permanent use, the least satisfactory are those made of slate or porcelain, on account of the great readiness with which they chip or break. Far more

durable ones are made of zinc or galvanized iron. Where a large number are required for hanging on walls, trees, or shrubs, the most useful form is that made of a piece of zinc about four inches square, with the upper half inch or so turned down to rather more than a right angle, to allow rain and moisture to drain off, and so prevent the name, etc., being defaced. These labels are painted black with the name in white, the latter being much more conspicuous than if the colours are used in a reverse manner. Another good form is made of cast iron with raised letters. This label is oval in shape with a hole pierced near the top and another near the bottom; by means of the former it can be suspended by a piece of wire, or by both secured by screws to a stake driven into the ground. The portion of the stake driven into the ground, as well as that of wooden labels, should be first be soaked in creosote or gas-tar to assist in preventing decay.

Labe'llum, or **Lip.** The superior petal of orchids, which generally becomes inferior by the torsion of the pedicel. It generally differs much in size, form, and colour from other petals, rarely is it similar to them as in some of the Australian genera.

Labichæ'a. (Named after *M. Labiche*, a French officer. Nat. ord., *Leguminosæ*; Tribe, *Cassiæ*. Allied to *Cas* sia.)

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., 35° to 45°.

L. lanceolata. 3. Yellow. April. W. Australia. 1837. B. M. t. 6751. Syns., *L. bipunctata* and *L. diversifolia*, Paxt. Fl. Gard. t. 52.

Labi'sia. (From *labis*, a spoon; the divisions of the corolla are in the shape of small spoons. Nat. ord., *Myrsinæ*; Tribe, *Eumyrsinæ*.)

Stove shrubs, requiring a rather moist atmosphere. Sandy loam with a little peat. Seeds.

L. ala'ta. White, pinkish outside. Borneo and Malacca. Ill. Hort. t. 605.

— *Malouia'na.* 1. Leaves dark green, midrib lighter, under surface purplish. Borneo. 1885. Ill. Hort. t. 580.

— *potho'na.* 1. White. June. Borneo and Singapore. B. R. 1845, t. 48.

La'blab. (The Arabic name of the convolvulus; referring to the twining habit. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*.) See **Dolichos**.

L. perennans and *L. vulgaris*, with its varieties, *albiflora* and *purpurea* (B. R. t. 830), are forms of *Dolichos Lablab*.

Labrador Tea. *Le'dum*.

Laburnum. (The Latin name for the tree. Nat. ord., *Leguminosæ*; Tribe, *Genistæ*. Allied to *Cytisus*.)

Hardy ornamental trees.

- L. A'dami*. Purple. Syn., *Cytisus Adami*. This is a very remarkable graft hybrid raised by Jean Louis Adam in 1825, by shield grafting *Cytisus purpureus* on *Laburnum vulgare*. Mr. Adam states that all the eyes of the shield grew, but one produced a more robust shoot than the rest; this shoot he propagated, and from it all the plants of *L. Adami* are descended.
- *pe'ndulus*. A form with pendent branches. 1871.
- *alpi'num*. 15-20. Yellow. June. Europe. 1596. Scotch Laburnum. Syn., *Cytisus alpinus*. *Cytisus fragrans* and *C. hirsutus* are forms of this.
- *Alsche'ngeri*. A form of *L. alpinum* with long racemes.
- *carama'nicum*. 3-4. Yellow. June. Asia Minor. 1879. Syn., *Podocytisus caramanicus*.
- *sero'tinum*. Yellow. June. 1854.
- *vulga're*. 20. Yellow. May. Switzerland. 1596. Syn., *Cytisus Laburnum*. There are numerous varieties of this, such as: *aureum*, *bullatum*, *Carrieri*, *fragrans*, *involutum*, *monstrosum*, *Parkei*, *pendulum*, *quercifolium*, *sessilifolium*, *Watereri*, etc. See Wien. Gart. Zeit. 1884, p. 467.

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., *Orchidææ*; Tribe, *Vandææ-Cyrtopodiææ*. 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*. 1. Greenish-yellow. May. Guatemala. 1843.
- *specta'bilis*. $\frac{1}{2}$. Pinkish-white, dotted with purple. May. Mexico. 1853. B. M. t. 6516.

Laca'thea flo'rida. Salis. Parad. t. 56. A synonym of **Gordonia pubescens**.

Lace-bark. *Lage'tta lintca'ria*.

Lacepe'dea. (In honour of Count de Lacepède, a French Professor of Natural History. Nat. ord., *Sapindaceæ*; Tribe, *Staphyleæ*.) See **Turpinia**. *L. insi'gnis*. B. M. t. 4459. See **Turpinia insi'gnis**.

Lachena'lia. (Named after *M. de*

la Chenal, a botanical author. Nat. ord., *Liliacææ*; Tribe, *Scilleæ*. Allied to *Triteleja*.)

All greenhouse bulbs, from South Africa, except *glau'ca*. Offsets at potting period, and seeds in a hotbed, in spring; sandy peat, with a little fibry 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. angu'i'nea*. 1. White. April. 1825. Swt. Fl. Gard. ser. 2, t. 179.
- *angusti'folia*. Jacq. Ic. t. 381. See *L. contaminata*.
- *au'rea*. $\frac{1}{2}$. Yellow. S. Africa. 1856. B. M. t. 5992. Syn., *L. tricolor*, var. *aurea*.
- *au'reo-refle'xa*. Bright yellow, green, reddish-brown. Garden hybrid. 1887.
- *bifo'lia*. B. M. t. 1611. See *L. isopetala*.
- *Bowie'na*. $\frac{1}{2}$. Yellow, tinged with red.
- *Come'sii*. Garden hybrid between *L. reflexa* and *L. quadricolor*. Gfl. 1891, p. 358, fig. 77.
- *contamina'ta*. $\frac{1}{2}$. Pink. March. 1774. B. M. t. 1401. Syns., *L. angustifolia* and *L. hyacinthoides*.
- *fistulo'sa*. $\frac{1}{2}$. White, tinged with sky-blue. Cape Colony. 1884.
- *fla'va*. $\frac{1}{2}$. Yellow. May. 1790.
- *fra'grans*. 1. White, red. April. 1798. Andr. Rep. t. 302. *L. fragrans*, of Jacq. H. Schoenb. t. 82, is a variety of *L. versicolor*.
- *glau'ca*. Purple, red. May. Persia. 1825.
- *glau'ci'na*. 1. Green, white. May. 1795. Jacq. Ic. t. 391. Syn., *L. sessiliflora*.
- *hyacinthoi'des*. Jacq. Ic. t. 382. See *L. contaminata*.
- *isope'tala*. $\frac{3}{4}$. White, purple. May. 1804. Jacq. Ic. t. 401. Syns., *L. bifolia* and *L. rosea*.
- *lanca'fo'lia*. $\frac{1}{2}$. White, green. May. 1818.
- *lilaci'na*. $\frac{1}{2}$. Bright lilac, blue at base. 1884.
- *libi'flora*. $\frac{1}{2}$. White. May. 1825. Jacq. Ic. t. 387.
- *lu'cida*. $\frac{1}{2}$. Pink. April. 1798. B. M. t. 1372. Syn., *L. pallida* of B. R. t. 287.
- *lute'ola*. Jacq. Ic. t. 395. See *L. tricolor*.
- *media'na*. 1. White, blue. Jacq. Ic. t. 392.
- *muta'bilis*. Swt. Fl. Gard. ser. 2, t. 129. See *L. orchioïdes*.
- *Nelso'ni*. Lemon-yellow, green, red. Garden hybrid between *L. aurea* and *L. luteola*. 1882. Fl. Mag. t. 452.
- *nervosa*. $\frac{3}{4}$. Pink. June. 1810. B. M. t. 1497.
- *odorati'ssima*. $\frac{1}{2}$. White, with green tips. 1884.
- *orchioï'des*. 1. Green, white. March. 1752. Jacq. Ic. t. 390. Syns., *L. mutabilis* and *Orchidiastrum Aitoni*.
- *orthope'tala*. $\frac{1}{2}$. Reddish. Jacq. Ic. t. 392.
- *pa'lida*. $\frac{1}{2}$. Pale blue. May. 1782. B. M. t. 1269 is a synonym of *Orchidiastrum viventi-flavum*; B. R. t. 287 of *L. lucida*.
- *cærule'scens*. $\frac{1}{2}$. Bluish. September. 1782. B. R. t. 1945.
- *mi'nor*. $\frac{1}{2}$. Pale blue. 1782. B. R. t. 1350.
- *pa'tula*. $\frac{3}{4}$. White, pink. April. 1795. Jacq. Ic. t. 384.
- *pe'ndula*. $\frac{3}{4}$. Red, yellow. April. 1789. Jacq. Ic. t. 400.
- *aurelia'na*. Red. Garden variety. Rev. Hort. 1890, p. 376.

- L. pendula maculata*. $\frac{1}{2}$. Red, yellow. April. 1789.
 — *punctata*. Jacq. Ic. t. 397. See *L. rubida*, var. *punctata*.
 — *purpurea*. Jacq. Ic. t. 393. See *L. versicolor*, var. *purpurea*.
 — *purpureo-caerulesca*. 1. Purple. April. 1789. Jacq. Ic. t. 388.
 — *pusilla*. $\frac{1}{2}$. White. June. 1825. Jacq. Ic. t. 385.
 — *pustulata*. 1. Purple, green. February. 1790. Jacq. Ic. t. 386.
 — *quadricolor*. Jacq. Ic. t. 396. See *L. tricolor*.
 — *lutea*. B. M. t. 1704. See *L. tricolor*, var. *lutea*.
 — *racemosa*. $\frac{1}{2}$. White, green. May. 1811. B. M. t. 1517.
 — *reflexa*. $\frac{1}{2}$. Bright yellow, tipped with green. 1833.
 — *Regelia*. Garden hybrid between *L. reflexa* and *L. aurea*. Gf. 1891, p. 356, fig. 76.
 — *rosea*. Andr. Rep. t. 296. See *L. isopetalata*.
 — *rubida*. $\frac{1}{2}$. Red. September. 1803. Jacq. Ic. t. 398.
 — — *punctata*. Pale red, spotted with dark red.
 — — *tigrina*. Syn., *L. tigrina*. Jacq. Ic. t. 399.
 — *serotina*. See *Dipsadi serotinum*.
 — *sessiliflora*. Andr. Rep. t. 460. See *L. glauca*.
 — *tigrina*. Jacq. Ic. t. 399. See *L. rubida*, var. *tigrina*.
 — — *Warei*. Red, yellow, green. 1884.
 — *tricolor*. 1. Red, yellow. April. 1774. B. M. t. 82. Syn., *L. quadricolor*.
 — — *lutea*. Yellow. Syn., *L. quadricolor*, var. *lutea*, and *L. aurea*.
 — *unicolor*. Jacq. Ic. t. 389. See *L. versicolor*, var. *unicolor*.
 — *unifolia*. White, blue. March. 1795. B. M. t. 766.
 — *versicolor unicolor*. $\frac{1}{2}$. Pink. May. 1806. Syn., *L. unicolor*.
 — *violacea*. 1. Violet. March. 1795.

Lachnæa. (From *lachne*, down; referring to the downy clothing of the flower-heads. Nat. ord., *Thymelacæe*; Tribe, *Euthymeleæ*. Allied to *Gnidia*.)

Greenhouse evergreen shrubs, from South 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 fibry loam. Winter temp., 35° to 45°. In summer, a sheltered, somewhat shady place.

- L. buxifolia*. 2. May. 1800. Syn., *L. buxifolia*, var. *virens*. B. M. t. 1657.
 — — *glauca*. 2. June. 1800. B. M. t. 1658. Syn., *L. glauca*.
 — *conglomerata*. 2. June. 1773. A synonym of *Passerina ericoides*?
 — *ericeophala*. 2. June. 1793. B. M. t. 1295.
 — *purpurea*. 2. Purple. April. 1800. Syn., *L. purpurea*. B. M. t. 1594.
 — *glauca*. See *L. buxifolia*, var. *glauca*.
 — *purpurea*. Andr. Rep. t. 293. See *L. ericeophala*, var. *purpurea*.

Lachnanthes. (From *lachne*, down, and *anthos*, a flower. Nat. ord., *Hæmodoracæe*; Tribe, *Euhæmodoreæ*. Syn., *Gyrotheca*. 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. tinctoria*. $\frac{1}{2}$. Pink July N. Amer. 1812.

Lachnostoma. (From *lachne*, down, and *stoma*, a month; the throat of the corolla is downy. Nat. ord., *Asclepiadacæe*; Tribe, *Gonolobæe*.)

L. maritimum is a stove, and *L. prostratum* a greenhouse, twiner. Culture the same as for *GONOLOBUS*.

- L. maritimum*. Green, purple. June. Caracas. 1823. Syn., *Gonolobus maritimum*. B. R. t. 931.
 — *prostratum*. Green. July. Mexico. 1823. Evergreen. Syn., *Gonolobus prostratus*.

Lackey Moth. *Bo'mbyx neustria*.

Lactuca. Lettuce. (From *lac*, milk; referring to the milky juice. Nat. ord., *Compositæ*; Tribe, *Cichoracæe*. Syn., *Agathyrsus*.)

For culture, see below.

- L. alpina*. 3. Blue-purple. July. N. Europe. Perennial. Syn., *Agathyrsus alpinus* and *Mulgedium alpinum*.
 — *intybaea*. Yellow. St. Thomas. Jacq. Ic. t. 162. Syn., *Brachyramphus intybaeus*.
 — *macrophylla*. 4. Pinkish-purple. July. Caucasus.
 — *macrorrhiza*. 1-3. Violet. August. N.W. Himalayas. Perennial. Syn., *Mulgedium macrorrhizon*. B. R. 1846, t. 17.
 — *perennis*. 2. Light blue. Summer. S. Europe. 1596. B. M. t. 2130.
 — *Plumieri*. 6. Purple. Summer. S. France. Perennial.
 — *sativa*. 3. Yellow. June. 1562. Annual. Bent. and Tr. t. 161. Common Lettuce.
 — *tuberosa*. Pale bluish-purple. Persia. Jacq. H. Vind. i. t. 47.
 — *villosa*. Purple. Pennsylvania. Jacq. H. Schoenb. t. 367. Syn., *Mulgedium acuminatum*.

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, *Moor Park*, *Sugar-loaf*, *Brighton*, *Silver*, *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*, *Early Paris Market*, *Hammer-smith* *Early Green*, *Tennis Ball*, *White Dutch*, *Drum-headed*, *Prince's*, *Brown Dutch* and *Common White Dutch*, both 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 mid-day.

Sowing.—The first sowing in a frame on a warm border, or slender 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.

Disease.—Yellowish spots are sometimes found on the upper surface of the leaves, caused by a species of mildew, *Peronospora ganglioniformis*. As this fungus passes part of its life on other genera of Composites, such as Thistles, Groundsel, etc., the latter should be weeded from the lettuce-bed as soon as they appear.

Insect.—*Anthomyia lactuæ*, deposits its eggs on the flowers of lettuce plants left to produce seeds. The larvæ commit great havoc by boring into, and eating the seeds. The surest way to get rid of this pest is to burn the crop, as soon as it is discovered to be attacked. The male fly is black, with four pale stripes on the thorax, and a chestnut-

brown head; the female grey, with blackish legs.

Lady-Bird. *Coccine'lla*.

Lady's Fern. *Lastrea a 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. *Neot'tia spir'al'is* and *Spira'nthes*.

Lælia. (*Lælia* was a Vestal virgin; alluding to the delicacy of the flower. Nat. ord., *Orchidæe*; Tribe, *Epidendrea-Lælicæ*. 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. acuminata. 2. Pinkish-white. June. Mexico. 1840. B. M. t. 4095.

— *albida*. Yellowish-white. Oaxaca. 1838. B. R. 1839, t. 54.

— *be'lla*. White, tinged with lilac-pink; lip rosy-purple with three yellow keels. Mexico. Warn. Orch. Alb. t. 239.

— *bru'nea*. Brown, purplish. Mexico. 1868.

— *ochra'cea*. Pale brown, white, purplish. Mexico. 1868.

— *ro'sea*. Flowers tipped with purple. Mexico. 1869.

— *Stobartia'na*. Purplish.

— *sulphu'ra*. Sulphur, mauve, purple. 1884.

— *Tuckeri*. Amethyst, purple, yellow. Mexico. 1868.

— *viola'cea*. White, violet.

— *Ama'nda*. Light rose; lip nerved with rich purple. Hybrid? G. C. 1882, xviii. p. 776.

— *Amesia'na*. Mauve-purple, yellow, white. Hybrid between *Cattleya maxima* and *L. crispa*.

— *d'nceps*. 1½. Rose, purple. December. Mexico. B. R. t. 1751.

— *a'lba*. White, yellow. Mexico. 1878.

— *Amesia'na*. White, green, crimson; lip violet-crimson, yellow, purple, white. 1888.

— *Barkeria'na*. 1½. Purple. December. Mexico. 1833. B. R. t. 1947.

— *Calvertia'na*. Lip red-purple, bordered with rose. 1883.

— *Dawsoni*. White, purple. Mexico. 1868.

— *delicat'a*. White, rosy-purple, orange. Mexico.

— *Hillia'na*. White, purple, orange. 1881. Warn. Arch. Alb. t. 146.

— *holochel'ta*. Lip entire. G. C. 1891, ix. p. 426.

— *Hyea'na*. White, pale yellow, purple. Lind. t. 226.

— *Keimastia'na*. Rosy. G. C. 1886, xxv., p. 298.

— *Leea'na*. Rose; lip white, veined with purple. 1884.

— *mu'nda*. Side lobes of lip, veined with purple. G. C. 1886, xxv. p. 298.

— *obscu'ra*. Lip dark purple, disc orange. G. C. 1886, xxv. p. 41.

L. d'nceps Percivalia'na pulche'rri'ma. Mauve-purple, rose, pale orange. G. C. 1883, xix. p. 110.

— *ra'dians*. Deep purple, white, orange. G. C. 1888, iii. p. 200.

— *ro'sea*. Bright rose, yellow. Mexico. 1880.

— *Sanderia'na*. Ivory-white, purple, yellow. G. C. 1885, xxiii., p. 140.

— *Scottia'na*. Rich mauve; lip dark purple, yellow. Mexico. 1888. Warn. Orch. Alb. t. 325.

— *Thomsonia'na*. G. C. 1890, viii. p. 716.

— *Ve'i'thii*. Lilac, violet, yellow. 1883.

— *vesta'lis*. A broad-petalled white variety. 1880.

— *Warne'rii*. Pale rose; lip deep crimson. June.

— *Arnoldia'na*. Garden hybrid between *Lælia purpurata* and *Cattleya labiata*. G. C. 1891, ix. p. 740. Syn., *Lælio-cattleya Arnoldiana*.

— *autumna'lis*. 3. Rosy. September. Mexico. 1836. B. M. t. 3817.

— *atrora'bens*. Purple-crimson. Mexico. 1879.

— *veni'sta*. Gard. May 3, 1884.

— *Batemania'na*. Purple-rose; lip carmine, mauve, white. Garden hybrid between *Sophonitis grandiflora* and *Cattleya intermedia*. G. C. 1886, xxvi. p. 263.

— *be'lla*. Lilac, purple, white. 1884.

— *cærule'scens*. Bluish. Costa Rica. 1838.

— *callistoglo'ssa*. Rose, white, purple. 1882. Garden hybrid between *Lælia purpurata* and *Cattleya Warscewiczii*.

— *calogio'ssa*. Pale and dark purple; lip bordered with white. 1877. Garden hybrid.

— *ca'ndida*. White. June. Bolanos. 1840.

— *Canhamia'na*. Pale rose; lip purple, white. Hybrid between *Lælia purpurata* and *Cattleya Mossiae*.

— *cinnabari'na*. 2. Reddish. May. Brazil. 1836.

— *cinnamo'mea*. White, purple. Brazil. 1860.

— *Crawshaya'na*. Amethyst, purple, yellow. Hybrid? G. C. 1883, xix. p. 142.

— *leuco'ptera*. Rose, mauve-purple, white. G. C. 1884, xxi. p. 577.

— *cri'spa*. 1. White, purple. September. Brazil. 1826. Syn., *Cattleya crispa*.

— *delicat'issima*. White, mauve. 1881.

— *viola'cea*. Deep violet, white. Guiana. 1850.

— *crispila'bia*. Purple, amethyst. Mexico. 1867. Syn., *L. Lawrenceana*.

— *Daya'na*. Brazil. 1877.

— *decursi'va*. Green, whitish. E. Indies. 1884.

— *Digbya'na*. ¾. Yellow, white, purple. July. Honduras. 1844. Syn., *Brassavola Digbyana*. B. R. 1846, t. 53.

— *Domina'na*. Pale purple; lip darker. Autumn. Garden hybrid. 1878.

— *ro'sea*. White, buff-yellow, purple. 1884. Garden hybrid.

— *Dormantia'na*. Greenish-brown, purple. February. Brazil. 1880.

— *e'legans*. Amethyst, purple. Brazil. 1865. Syn., *Cattleya elegans*. B. M. t. 4700.

— *a'lba*. White, magenta. 1884. Ill. Hort t. 526.

— *blenheime'nsis*. Rosy-purple, magenta, pale yellow. Brazil. Warn. Orch. Alb. t. 393.

— *Broomea'na*. White, rose, purple. 1890. Warn. Orch. Alb. t. 413.

— *giga'ntea*. Lilac, spotted with rosy-purple. Brazil, 1862. Syn., *C. gigantea*.

— *Houttea'na*. Purple, mauve. 1883.

— *loba'ta*. Petals very narrow. Brazil. 1869.

- L. elegans* *Marshallæ*. Purple. Brazil. 1872.
 ——— *Morrenia*'na. Rosy-magenta, crimson, lilac. Brazil. 1888. Warn. Orch. Alb. t. 331.
 ——— *nyctætha*. Rose changing to sulphur-yellow; lip crimson, white. G. C. 1888, iii. p. 178.
 ——— *p'cta*. Rose, grey, purple, yellow. 1884.
 ——— *prasi'ta*. Rosy-magenta, lilac, white.
 ——— *indica*. G. C. 1883, xix. p. 11.
 ——— *Schilleria*'na. White, rose, purple, yellow. April and October. 1855. Rchb. ii. t. 52.
 ——— *Turneri*. Rosy-pink, magenta. Brazil. 1863. Syn., *L. Turneri*, Warn. Sel. Orch. t. 12.
 ——— *Tantzia*'na. Pale purple, white. G. C. 1888, iii. p. 330.
 ——— *erythro'ibon*. Brazil. 1843.
 ——— *epidendro'idēs*. Purple, crimson. July. Brazil. 1839.
 ——— *euspa'tha*. Garden hybrid. Otto Gartz. 1860, p. 420.
 ——— *eute'rpe*. Garden hybrid. G. C. 1888, iv. p. 533.
 ——— *Eyermania*'na. Rosy-purple, yellow. G. C. 1888, iv. p. 91 and p. 109, fig. 12.
 ——— *fl'ammea*. Orange-scarlet; lip purple-crimson, margin fringed. March. Hybrid between *L. cinnabarinæ* and *L. Pilcheri*. Syn., *L. Veitchii*.
 ——— *fl'va*. 1½. Bright yellow. April. Brazil. 1841. B. R. 1842, t. 62.
 ——— *furfur'cea*. 1½. Rose. November. Mexico. 1838. B. M. t. 3810.
 ——— *giga'ntea*. See *L. elegans*, var. *gigantea*.
 ——— *glau'ca*. 1. Yellow. March. Vera Cruz. 1837. Syn., *Brassavola glauca*. B. M. t. 4083.
 ——— *Gouldia*'na. Purple, white, yellow. G. C. 1888, iii. p. 41.
 ——— *grandifl'ra*. 1. Kalapa.
 ——— *gr'ndis*. Yellow. May. Bahia. 1850.
 ——— *harpophylla*. Vermilion, yellow. Spring. Brazil. 1873.
 ——— *Hornia*'na. Garden hybrid. G. C. 1888, iii. p. 770.
 ——— *irror'ata*. Greenish-purple; lip violet-rose. S. Brazil. 1864. Syn., *Cattleya irrorata*.
 ——— *Scottia*'na. Pale rose, pink, reddish-brown, white. G. C. 1883, xix. p. 142.
 ——— *Jonghia*'na. Amethyst, yellow, whitish. Brazil. 1872. B. M. t. 6038.
 ——— *juven'ilis*. Hybrid between *L. Perinii* and *L. Pinellii*, var. *marginata*. Orch. 1890, p. 240.
 ——— *Lea*'na. Rose; lip white, purple. April. Hybrid? G. C. 1882, xvii. p. 492.
 ——— *Lind'ni*. Pale rose. June. Cuba.
 ——— *Lindleya*'na. White, purple. Brazil. 1865. Syn., *Cattleya Lindleyana*, B. M. t. 5449.
 ——— *maja'lis*. ¾. Pink, purple. Mexico. 1838. B. M. t. 5667. May Flower.
 ——— *a'iba*. White. 1880.
 ——— *Measuresia*'na. White; lip pale yellow. Brazil. Warn. Orch. Alb. t. 207.
 ——— *monophylla*. Orange-scarlet; anther purple. Jamaica. 1883. B. M. t. 6883. Syn., *Trigonidium monophyllum*.
 ——— *Mylamia*'na. Hybrid between *Lælia crispæ* and *Cattleya granulosa*.
 ——— *pachyste'le*. Pale rose; lip white, purple. G. C. 1888, iv. p. 596.
 ——— *peduncula'ris*. Violet. Mexico. 1841. B. R. 1845, t. 69.
 ——— *Perrin'i*. Lilac. September. Brazil. 1831.
 ——— *a'iba*. White; disk of lip yellow. G. C. 1888, iv. pp. 446 and 565.
 ——— *irror'ata*. Rose; lip white, light yellow, purple. 1881.
 ——— *ni'cea*. White; apex of lip purple. Brazil. 1880.
 ——— *Philbrickia*'na. Light chestnut-brown, purple, white. 1879. Garden hybrid between *L. elegans* and *Cattleya Acklandia*.
 ——— *Pilcheria*'na. Pale rose; lip pale yellow, purple. 1868. Hybrid between *L. Perinii* and *L. crispæ*.
 ——— *a'iba*. White.
 ——— *ilaci'na*. Red. G. C. 1886, xxv. p. 617.
 ——— *porphyri'tis*. Purple, green, light yellow. G. C. 1886, xxv. p. 73.
 ——— *præ'stans*. Pink, purple. Brazil. 1859. B. M. t. 5498.
 ——— *pu'mila*. 1. Purple. July. S. America. 1837. Syn., *Cattleya pumila*.
 ——— *mir'abilis*. Flowers larger and darker. Brazil. 1879.
 ——— *spect'abilis*. White, purple. 1879.
 ——— *purpura'scens*. Pink. September. Brazil. 1838.
 ——— *purpura'ta*. White, purple, yellow. June. Brazil. 1852.
 ——— *a'iba*. White, rose, yellow. Brazil. 1869.
 ——— *blenheime'nsis*. Blush-rose, purple, yellow. S. Brazil. 1888. Warn. Orch. Alb. t. 346.
 ——— *Nell'i*'ni. Violet-rose, bluish-white, crimson. Brazil.
 ——— *ro'sea*. Pale rose, rich purple. Brazil. 1873.
 ——— *White*'na. Lip dark purple; throat not yellow. G. C. 1888, iii. p. 681.
 ——— *Willia'msii*. Pale rose; lip crimson. Brazil.
 ——— *rube'scens*. ¼. Cream, pink. May. Mexico. 1840.
 ——— *rupe'stris*. Violet. Brazil. 1840.
 ——— *Schilleria*'na. Otto Gartz. 1855, p. 322. See *L. elegans*, var. *Schilleriana*.
 ——— *Sede'n*'ti. Garden hybrid.
 ——— *sup'e'rbians*. 1. Pink, crimson. November. Guatemala. 1840. B. M. t. 4090.
 ——— *decor'ata*. Purple. G. C. 1888, iii. p. 200.
 ——— *Timo'ra*. Garden hybrid. G. C. 1887, ii. p. 428.
 ——— *Tresederia*'na. Garden hybrid. G. C. 1888, iii. p. 136.
 ——— *Turneri*. Purplish rose. Brazil. 1863. Syn., *L. elegans*, var. *Turneri*.
 ——— *Veitchia*'na. Lilac, amethyst, crimson-purple, Garden hybrid.
 ——— *Veitchii*. See *L. flammea*.
 ——— *vi'rens*. Greenish-yellow; lip white. 1879. There has been much confusion here, some of the plants grown under this name being *L. zanthina*, and others *Cattleya lobata* of Lindley, G. C. 1848, p. 403.
 ——— *Wall'i*'sii. Rose; lip marked with yellow. Rio Negro. 1866.
 ——— *Wyattia*'na. White, purple, light yellow. Brazil. G. C. 1883, xx. p. 426.
 ——— *zanthi'na*. Yellow; lip whitish, purple. Brazil. 1859. B. M. t. 5144.
 ——— *agra'phis*. Lip without purple markings. G. C. 1888, iv. p. 264.

Lælioca'ttleya. (A name used for hybrids between the genera *Lælia* and *Cattleya*. Nat. ord., *Orchidææ*; Tribe, *Epidendrææ-Læliææ*.)

For culture, see LÆLIA.

- L. Arnoldia*'na. Hybrid between *Lælia purpurata* and *Cattleya labiata*. 1891.
 ——— *bell'a*. Lilac, purple, white.
 ——— *Hippoly'ta*. Hybrid between *Cattleya Mossiae* and *Lælia cinnabarina*. Journ. Hort. 1890, xx. p. 302, fig. 38.
 ——— *Proserpi'ne*. Hybrid between *Lælia pumila*, var. *Dayana* and *Cattleya velutina*.

Lælio'psis. (From *Lælia* and *opsis*, resemblance. Nat. ord., *Orchidæ*; Tribe, *Epidendrea-Lælicæ*.)

Stove epiphytal orchid. See ORCHIDS.

L. domingensis. Purple. July. St. Domingo. 1851. Paxt. Fl. Gard. iii. p. 155. t. 105.

Lafœnsia. (Named in honour of the Duke of Lafoens, president of the Lisbon Academy of Science. Nat. ord., *Lythraceæ*; Tribe, *Lythreæ*. Allied to *Lagerstroemia*.)

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. microphylla. Brazil. 1847. Syn., *L. Vandeliana*.

Laga'scea. (Named after D. M. Lagasca, professor of botany at Madrid. Nat. ord., *Compositæ*; Tribe, *Helianthoidæ*.)

Stove plants. Raised in a hotbed, several times potted there, and bloomed in summer, in a greenhouse or plant stove.

L. latifolia. 10-15. White. June. Mexico. Shrub. Syn., *Nocca latifolia*. Swt. Fl. Gard. t. 215.

— *molliis.* 2. White. July. Cuba. 1815. B. M. t. 1804. Annual.

Lagenaria. Bottle Gourd. (From *lagna*, a bottle; referring to the shape of the fruit of some species. Nat. ord., *Cucurbitaceæ*; Tribe, *Cucumerinæ*. 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. idolotrica. White. June.

— *verrucosa.* Wien. Gart. Zeit. 1889, p. 459.

— *vittata.* White. June.

— *vulgaris.* 10. August. 1597. Cultivate throughout the tropics and warm temperate zones.

— *clavata.* 10. August. 1597.

— *courgourda.* 10. August. 1597.

— *depressa.* 10. August. 1597.

— *turbinata.* 10. August. 1597.

Lagenophora. (From *lagenos*, a bottle, and *phoros*, to bear; referring to the flower-heads. Nat. ord., *Compositæ*; Tribe, *Asteroidæ*. Allied to *Brachycome*.)

Greenhouse herbaceous perennial. Division in spring; light soil; a cool greenhouse, or a dry, cold pit in winter.

L. Forsteri. Yellow and purple. New Zealand. 1837.

Lagerstroemia. (Named after M. Lagerström, a German. Nat. ord., *Lythraceæ*; Tribe, *Lythreæ*.)

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. indica alb. 12. White. August. China. 1816.

— *rosea.* 12. Rose. August. China. 1825.

— *speciosa.* Rose. August. China. 1826.

STOVE EVERGREEN SHRUBS.

L. elegans. 10. Rose, yellow. August. E. Ind.

1841. Paxt. Mag. xiv. p. 269.

— *Flores-reginæ.* 12. Rose to purple. Malacca to China. 1792. Syn., *L. reginæ*.

— *grandiflora.* 12. Red. July. E. Ind. 1818.

Syn., *Duabanga sonneratioides*.

— *indica.* 6. Flesh. July. E. Ind. 1759.

B. M. t. 405.

— *parviflora.* 12. White. E. Ind. 1818.

— *reginæ.* See *L. Flores-reginæ*.

Lage'tta. Lace Bark. (Its Indian name. Nat. ord., *Thymelacææ*; Tribe, *Euthymelacææ*.)

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 fibry loam. Summer temp., 60° to 80°; winter, 45° to 55°.

L. linearia. 6. White. Jamaica 1793. B. M. t. 4502.

Lagunæ'a. See *Lagunaria*.

Laguna'ria. (From its resemblance to *Lagunæa*, an allied genus. Nat. ord., *Malvaceæ*; Tribe, *Hibisceæ*. Syn., *Lagunæa*.)

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. cuneiformis. A synonym of *Fugosia cuneiformis*.

— *ilicifolia.* Lilac. June. Swan River. 1832.

A synonym of *Fugosia hakeaefolia*, var. *coronopifolia*. Syn., *Hibiscus ilicinus*. E. R. t. 2009.

— *Patersonii.* 20. Pale red. June. Norfolk Island. 1792. Syns., *Lagunæa Patersonii*, B. M. t. 769, *L. squamea* and *Hibiscus Patersonius*, Andr. Rep. t. 236.

Laguncularia. (Derivation uncertain. Nat. ord., *Connaracææ*; Tribe, *Connaracææ*.)

Stove evergreen shrub. The bark is used for tanning in Brazil. For culture, see CONNARUS.

L. racemosa. 10. White. Brazil. 1820. Syn., *Conocarpus racemosus*.

Lagu'rus. Hare's-tail Grass. (From *lagos*, a hare, and *oura*, a tail. Nat. ord., *Graminææ*.)

Hardy annual grass.

L. ovalis. 1. June. W. Europe, Britain. Eng. Bot. ed. 3, t. 1712.

La'lage. (Named after *Lalage*, a gay, witty dame immortalized by Horace. Nat. ord., *Leguminosææ*; Tribe, *Genisteææ*. United by some authors with *Boissiaææ*. Allied to *Platylobium*.)

Greenhouse evergreen shrubs, from Australia. Cuttings of the young shoots when they are getting firm; seeds in a slight, sweet hotbed, and seedlings gradually hardened; sandy peat, with a little fibry loam, broken crocks, and charcoal, and extra draining; in summer, a very airy greenhouse. Winter temp., not below 45°.

L. hoveaefolia. 2. Yellow, orange. March. 1841.
— *ornata*. 2. Yellow, purple. April. 1830.
B. R. t. 1722. Syn., *Boissæa ornata*.

Lallema'ntia. (After *J. E. Lalle-
mant*, of St. Petersburg. Nat. ord.,
Labiata.)

Hardy biennial. For culture, see DRACO-
CEPHALUM.

L. canescens. 1½. Blue. July. Levant. 1711.
Syn., *Dracocephalum canescens*.

Lama'rkia. (In honour of *J. B.
Lamarck*, a French naturalist. Nat.
ord., *Gramineæ*.)

Hardy annual grass. Propagated by seeds in
spring.

L. aurea. S. Europe and N. Africa.
— *dentata*. A synonym of *Elaeodendron australe*.

Lambe'rtia. (Named after the late
Mr. Lambert, a distinguished patron of
botany. Nat. ord., *Proteaceæ*; Tribe,
Grevilleæ. Allied to *Hakea*.)

Greenhouse evergreen shrubs, from West Aus-
tralia. 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 fibry peat, well-drained, and
mixed with rough pieces of charcoal. Winter
temp., 38° to 45°.

L. echinata. 3. July. 1824.
— *formosa*. 4. Red. July. 1788. B. R. t. 528.
— *longifolia*. 4. Red. July. 1826.
— *multiflora*. Orange.
— *ovalifolia*. 1836.
— *propinqua*. 1830.

Lamb's Lettuce. See **Corn
Salad.**

La'mium. Dead Nettle. (A name
used by *Pliny*. Nat. ord., *Labiata*;
Tribe, *Stachydeæ*. Syn., *Galeobdolon*.)

Perennial herbs of little value. Seeds.

L. Galeobdolon. 1. Yellow. May. Europe.
Syn., *Galeobdolon luteum*. Eng. Bot.
ed. 3, t. 1085.
— *maculatum*. 1. Purple. Summer. Europe.
Eng. Bot. ed. 3, t. 1087.

Lamourou'xia. (Named after *J.
V. F. Lamouroux*, a naturalist. Nat.
ord., *Scrophulariaceæ*; Tribe, *Euphra-
sievæ*. Allied to *Bartsia*.)

Greenhouse herbaceous perennials, scarlet-
flowered, from Mexico. For culture, see ANGE-
LONIA.

L. cordata. See *L. viscosa*.
— *multifida*. 1½. 1846.
— *viscosa*. 1½. 1846. Syn., *L. cordata*.

Lamproc'cus. (From *lampros*,
brilliant, and *kokkos*, a berry; on account
of the shining fruit. Nat. ord., *Brome-*

liacæ; Tribe, *Bromeliææ*.) See **Æch-
mea.**

L. cœrulea. Gfl. t. 694. See *Æchmea
cœrulescens*.
— *Vallera'ndi*. Rev. Hort. 1877, p. 130. See
Streptocalyx Vallera'ndi.
— *Weilbachii*. B. M. t. 6435. See *Æchmea
Weilbachii*.

Lampro'nia rubic'ella. See **Rasp-
berry moth.**

Lampwick. *Phlo'mis lychni'tis*.

Lana'ria. (From *lana*, wool; the
perianth is woolly outside. Nat. ord.,
Hæmodoracææ. Syn., *Argolasia*.)

Herbaceous greenhouse perennial. Sandy
loam and peat, with plenty of moisture. In-
creased by dividing the root.

L. plumosa. 1½. White. May. South Africa.
1787. Syn., *Argolasia plumosa*.

Lance-wood. *Guatte'ria*.

Land-ditching. See **Draining.**

Landra. *Rapha'nus 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; thus forming vistas
as gratifying as those which occur natu-
rally. 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 land-
scape 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 dis-
tricts 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. (Probably from the native
name. Nat. ord., *Orchidææ*; Tribe,
Epidendræ-Stenoglosseæ.)

Stove orchid.

L. microphyllum. Dull pink or greenish.
Guiana. Ic. Pl. t. 1334.

Lankeste'ria. (Named after *Dr. E.
Lanckester*, a distinguished botanist.

Nat. ord., *Acanthaceae*; Tribe, *Ruellieae*. 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. Bartschi*. Primrose yellow, with orange eye. W. Africa. 1865. B. M. t. 5533.
 — *elegantis*, is *Eranthemum elegans*.
 — *hispida*. Yellow. April. 1844. Syns., *L. longiflora* and *L. parviflora*.
 — *parviflora*. B. R. 1846, t. 12. See *L. hispida*.

Lansbergia. (In honour of M. R. van Lansberg, who introduced the plant. Nat. ord., *Iridaceae*; Tribe, *Sisyrinchieae*.) See **Trimezia**.

- L. caracasana*. See *Trimezia lurida*.
 — *martinicensis*. See *Trimezia lurida*.

Lanta'na. (An ancient name for Viburnum. Nat. ord., *Verbenaceae*; Tribe, *Verbeneae*.)

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; fibry loam and a little peat; *Sellowia* na requires sandy peat. Summer temp., 60° to 85°; winter, 45° to 55°.

- L. aculeata*. See *L. mixta*.
 — *alba*. White, yellow. Syn., *Lippia purpurea*.
 — *braziliensis*. 3. White. June. Brazil. 1823.
 — *coccinea*. 3. Scarlet. June. S. Amer. 1824.
 — *crocea*. 4. Copper. June. Jamaica. 1818. Jacq. H. Schoenb. t. 473.
 — *delicatissima*. Rev. Hort. 1852, p. 461.
 — *fuca* ta. B. R. t. 798. See *L. lilacina*.
 — *hispida*. 3. Purple. July. Mexico. 1824.
 — *hirsuta*. 3. Red. June. Mexico. 1824.
 — *involuta* ta. 3. Pink. July. W. Ind. 1690. Syns., *L. incana* and *L. lanuginosa*.
 — *lavandula* cea. Jacq. H. Schoenb. t. 361. See *Lippia asperifolia*.
 — *lilacina* na. 1-2. Rose. St. Salvador. 1823. Syn., *L. fuca* ta. B. R. t. 798.
 — *missifolia* ta. 2. Yellow. August. W. Ind. 1732.
 — *mixta*. 10. White, changing through yellow and orange to red. June. Rio Janeiro. 1692. Syns., *L. aculeata* and *L. mutabilis*.
 — *molle* is. 4. Red, white. July. Mexico. 1828.
 — *multiflora*. 1834.
 — *mutabilis*. Rev. Hort. 1852, p. 461. See *L. mixta*.
 — *nova mutabilis*. 5. Yellow, rose. May. B. M. t. 3110.
 — *odorata* ta. 2. White. May. W. Ind. 1758. Syn., *L. recta*. Jacq. H. Schoenb. t. 360.
 — *pilosca*. 3. Purple. July. Cuba. 1823.
 — *purpurea*. 2. Purple. July. S. Amer. 1820. Syn., *L. albo-purpurea*.
 — *radula*. 3. Purple. Brazil and W. Ind. 1803.
 — *recta*. Jacq. H. Schoenb. t. 360. See *L. odorata*.
 — *salviaefolia* ta. 3. Red. June. Cape of Good Hope. 1823. Jacq. H. Schoenb. t. 285. Syn., *L. violacea*.
 — *Sellowiana* na. 1. Rose. April. Monte Video. 1828. B. M. t. 2981.
 — *lanceolata* ta. Deep rose. July. Monte Video. 1838.
 — *stricta* ta. 3. Pale purple. Jamaica. 1733. Syn., *L. angustifolia*.
 — *trifolia* ta. 3. Purple. July. W. Ind. 1733.
 — *violacea*. See *L. salviaefolia*.

Lapageria. (Named in compliment

to *Josephine Lapagerie*, first wife of Napoleon Bonaparte. Nat. ord., *Liliaceae*; Tribe, *Luzuriageae*.)

- A fine half-hardy herbaceous twiner, like a Smilax, with large, rosy flowers, like *Bomarea*.
L. rosea. Patagonia. 1847 or 1848. B. M. t. 4447.
 — *albiflora*. White. Chili. B. M. t. 4892.
 — *superba*. Bright crimson. G. C. 1878, ix. p. 139, fig. 26.

Laplacea. (Named after Laplace, the distinguished philosopher. Nat. ord., *Ternstroemiaceae*; Tribe, *Gordoniaceae*. Allied to *Bonnetia*.)

Stove evergreen twiner, attaining a height of forty feet in its native country. Cuttings of half-ripened shoots in sand, in heat, under a bell-glass; sandy peat and fibry loam, well drained. Summer temp., 60° to 85°; winter, 50° to 60°.

- L. semiserrata*. 2. White. September. Brazil. 1842. B. M. t. 4129.

Laportea. (Named after M. Laporte. Nat. ord., *Urticaceae*; Tribe, *Urticeae*. Allied to *Fleurya*.)

Stove perennials. Seeds; cuttings in sand, in bottom-heat and under a hand-glass. Rich loam and fibrous peat or leaf-mould. Summer temp., 70° to 85°; winter, 60° to 70°. Care should be taken in handling these plants, as they possess stinging hairs, which cause acute pain, and the effects last for a long period. The writer of this was on one occasion stung by a single hair of *L. gigas* upon the middle finger, which resulted in a slight form of paralysis in the whole of one side of the body for several hours, severe pain being felt under the armpit and at the elbow; in damp weather slight pain was experienced at the place stung for eighteen months afterwards.

- L. gigas*. 80. Green. New South Wales. 1874.
 — *moroides*. 2. Greenish; fruit vinous-purple. The Poison Tree of Queensland. B. M. t. 7057.
 — *Schomburgkii versicolor*. Leaves variegated. Polynesia. 1875.

Lardizabala. (In honour of M. Lardizabal y Uribe, a Spanish naturalist. Nat. ord., *Berberidaceae*; Tribe, *Lardizabaleae*.)

Hardy evergreen climber, a rapid grower, suitable for covering high walls or trellis. For cultivation, see **HOLBOLLIA**.

- L. biternata* ta. Purple. December. Chili. 1848. B. M. t. 4501.

La'rix. Larch. (A name used by Dioscorides. Nat. ord., *Coniferae*; Tribe, *Abietineae*.)

Hardy, deciduous trees. For culture, see **PINUS**.

- L. americana* na. 70-90. N. America. Syns., *Pinus microcarpa* and *P. pendula*. Black Larch.
 — *brevifolia* ta. See *L. occidentalis*.
 — *dahurica*. Siberia to Dahuria. Varying in size from a small tree to a hush.
 — *decidua*. See *L. europaea*.
 — *europaea* na. 80-100. Europe. 1629. Syns., *L. decidua*, *L. pyramidalis*, and *L. vulgaris*. Common Larch.
 — *glauca*. Leaves glaucous.
 — *pendula*. Branches drooping.
 — *sempervirens*. Leaves persisting for two or three years. 1870.

- L. Griffithii*. 30-40. Northern India. Sikkim Larch.
 — *japonica*. See *L. leptolepis*.
 — *Kämpferi*. See *Pseudolarix Kämpferi*.
 — *Ledebourii*. 80-100. Siberia. Russian or Archangel Larch.
 — *leptolepis*. 40. Japan. Syn., *Abies leptolepis* and *Larix japonica*.
 — *Lyaalii*. 40. Rocky Mountains. 1863.
 — *occidentalis*. 150. N.W. America. Syn., *L. americana*, var. *brevisfolia*, and *Pinus Nuttallii*.
 — *pyramidalis*. See *L. europaea*.
 — *vulgaris*. See *L. europaea*.

Larkspur. *Delphinium*.

Larochea. See **Rochea**.

La'rrea. (Named after a Spaniard of that name. Nat. ord., *Zygophyllaceae*. 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 fibry 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. divaricata. 2. July. 1829.

— *nitida*. 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. *Thapsia laserpitii*.

Lasia'ndra. (From *lasios*, woolly, an *aner*, an anther; and woolly stamened. Nat. ord., *Melastomaceae*; Tribe, *Osbeckieae*.) See **Pleroma**.

L. argentea. See *Pleroma holosericeum*.

— *Fontanesiana*. See *Pleroma granulosum*.

— *lepidota*. See *Pleroma barbigerum*, var. *lepidota*.

— *maerantha*. See *Pleroma semidecandrum*.

— *petiolata*. B. M. t. 3766. See *Pleroma Gau-daudinianum*.

Lasiogro'stis. (From *lasios*, woolly, and *agrostis*, grass. Nat. ord., *Gramineae*.)

Hardy grass.

L. Calamagrostis. 2-3. South Europe.

Lasiopetalum. (From *lasios*, woolly, and *petalon*, a petal, or flower-leaf. Nat. ord., *Sterculiaceae*; Tribe, *Lasiopetaleae*.)

Greenhouse evergreen shrubs, from Australia. Cuttings of half-ripened shoots in sand, under a glass, in April and May; sandy peat and fibry loam, well drained, and carefully watered; either stagnant moisture or a sour soil destroys them. Winter temp., 40° to 45°.

L. arboreascens. See *Seringia platyphylla*.

— *Baueri*. See *Gaichenotia ledifolia*.

— *bracteatum*. 3. Pink. April. 1844. Syn., *Corethrostylis bracteata*. B. R. 1844, t. 47.

— *ferrugineum*. 4. White. June. 1791.

— *macrophyllum*. 5. Pale green. May. 1825.

— *purpureum*. B. M. t. 1755. See *Thomasia purpurea*.

— *triphylum*. See *Thomasia triphylla*.

Lasiosper'mum. (From *lasios*, woolly, and *sperma*, a seed. Nat. ord., *Compositae*; Tribe, *Anthemideae*. Allied to *Santolina*.)

Half-hardy evergreen trailing plants, with yellow flowers. Divisions 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. anthemoides. 1. August. Italy. 1729.

— *crithmifolium*. 1. August. Macedonia. 1817.

— *eriosper'mum*. See *Scorzonera eriospermum*.

— *peduncularre*. 1. July. S. Africa. 1798.

— *rigidum*. 1. August. Greece. 1816.

Lasiorhi'za. (From *lasios*, woolly, and *rhiza*, root. Nat. ord., *Compositae*; Tribe, *Mutisiaceae*.) See **Leuceria**.

L. ro'sea and *runcinata*. See *Leuceria runcinata*.

Lasthe'nia. (Derivation not explained. Nat. ord., *Compositae*; Tribe, *Helenoideae*.)

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. californica. 1. May. California. 1834. B.

R. t. 1780. (*L. glaberrima*.) A small form of *L. glabrata*.

— *glabrata*. 1. May. California. 1834. B.

R. t. 1823. Syn., *Hologyne glabrata*.

— *obtusifolia*. 1. May. Chili. 1833.

Lastræ'a. (Derivation unexplained. Nat. ord., *Filices*.) By some authors regarded as a section of **Nephrodium**.

For culture, see **FERNS**. They have all yellowish spores.

HARDY.

L. aculeata. 2. June. Britain.

— *aristata variegata*. Japan. 1879.

— *cristata*. 1. July. Britain.

— *dilatata*. 2. June. Britain.

— *erythrosora*. Japan. 1863.

— *flax-ma's*. 3. Britain.

— *Goldiana*. July. N. Amer. 1822.

— *intermedia*. June. N. Amer. 1837.

— *marginata*. 2. June. N. Amer. 1772.

— *Mazimowiczii*. 1. Japan. 1880.

— *noveboracensis*. 1. July. N. Amer. 1822.

— *opaca*. Japan. 1862.

— *oreopteris*. 3. July. Britain.

— *prolifera*. Japan. 1883.

— *recurva*. July. Britain.

— *rigida*. 2. Britain.

— *spinulosa*. 1. June. Britain.

— *thelypteris*. 1. July. Britain.

GREENHOUSE.

L. œmula. 1. Madeira.

— *corvaca*. Japan. 1890.

— *decomposita*. 1. July. N. Holland. 1825.

— *decurrens*. June. China. 1840.

— *glabella*. 1. New Zealand.

— *podophylla*. 1. Japan and Hong Kong.

— *velutina*. 2. New Zealand. 1859.

STOVE.

L. acuminata. 1. Nepal.

— *appendiculata*. July. E. Ind.

— *ascendens*. August.

— *athmantica*. 2. Natal.

— *atrata*. June. E. Ind.

— *attenuata*. June. Isle of Samaria. 1839.

— *atro-virens*. 1.

— *augea*. 4. Tropical America. 1841.

- L. ca'na*. E. Indies.
 — *canarie'nsis*. 2. Canary Islands.
 — *chrysol'ba*. July. Brazil. 1840.
 — *cont'e'rmina*. W. Ind. 1835.
 — *deparioi'des*. Ceylon.
 — *ebu'nea*. July. Nepal. 1841.
 — *e'legans*. 2. Ceylon. 1845.
 — *elonga'ta*. 2. July. Madeira. 1799.
 — *ericoa'rupa*. June. E. Ind.
 — *exi'gua*. July. Isle of Luzon.
 — *fascicula'ta*. July. S. Amer.
 — *fa'laax*. Brazil.
 — *florida'num*. Florida.
 — *fu'scipes*. 2. Ceylon. 1858.
 — *hirsu'ta*. Cape de Verd Islands. 1858.
 — *hi'rita*. 3. Jamaica.
 — *Hopea'na*. Polynesia. 1883.
 — *imne'rsa*. Malay Archipelago. 1840.
 — *in'divi'sa*. July. W. Ind. 1840.
 — *invi'sa*. 2. July. Jamaica. 1830.
 — *Kauifu'sii*. 1½. Brazil.
 — *la'ta*. June. Isle of Luzon. 1834.
 — *ligula'ta*. June. Isle of Luzon. 1839.
 — *macroca'rupa*. August. E. Ind. 1827.
 — *membran'folia*. June. Isle of Luzon. 1844.
 — *mexica'na*. Mexico.
 — *multi'ga*. July. E. Ind. 1839.
 — *pa'tens*. 2. July. W. Ind. 1734.
 — *patenti'ssima*. August. E. Ind. 1825.
 — *polyphy'lla*. August. India.
 — *Preslia'na*. June. India.
 — *prop'n'gua*. July. Isle of Luzon.
 — *prate'nsa*. Sierra Leone. 1858.
 — *pube'scens*. July. Jamaica.
 — *quinguangula're*. W. Africa.
 — *rece'dens*. 1½. Ceylon. 1845.
 — *remi'ssa*.
 — *semicorda'ta*. June. W. Ind. 1822.
 — *se'rra*. 2. July. W. Ind. 1819.
 — *si'milis*. July. Malacca.
 — *specta'bilis*. June. Isle of Luzon.
 — *spine'scens*. 1. Sierra Leone.
 — *Spreng'e'lii*. August. India.
 — *Standl'ishii*. See *Polystichum concavum*.
 — *strig'o'sa*. 2. Mauritius.
 — *venu'sta*. August. India. 1825.
 — *verruco'sa*. June. E. Ind. 1840.
 — *vesti'ta*. July. Brazil. 1844.
 — *villo'sa*. 3. July. Jamaica. 1844.
 — *visco'sa*. July. Malacca. 1839.

Lata'nia. Bourbon Palm. (The Bourbon name is *Latanier*. Nat. ord., *Palmææ*.)

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*. Lee L. *Verschaffeltii*.
 — *borbo'nica*. See *Livistona chinensis*.
 — *Commerso'nii*. 7. Mauritius and Bourbon. 1773. Syn., *L. rubra*.
 — *glaucophy'lla*. See *L. Loddigesii*.
 — *Loddige'sii*. 10. Round Island. 1823. Syn., *L. glaucophy'lla*.
 — *ru'bra*. See *L. Commersonii*.
 — *Verschaffe'tii*. 7. Rodriguez Island. Syn., *L. aurea*.

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*, hidden; the species grow concealed beneath trees and shrubs. Nat. ord., *Orobanchææ*.)

Half-hardy, herbaceous, root-parasites. For culture, see OROBANCHE.

L. claud'e'stina. ½. Violet-purple. April. Europe. 1890. B. M. t. 7106.

— *squama'ria*. 1. Flesh-coloured, sometimes tinged with blue. 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., *Leguminosæ*; Tribe, *Viciææ*.)

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'rupus. 1½. Pink. June. Levant. 1680. Swt. Fl. Gard. t. 236.

— *angula'tus*. 1. Red. June. South Europe. 1683.

— *leptophy'lus*. 1. Purple. June. Caucasus. 1818.

— *setifo'vus*. 1. Red. June. South Europe. 1739.

— *spha'ricus*. 1. Crimson. June. South Europe. 1801.

HARDY CLIMBING ANNUALS.

L. ala'tus. 3. Purple. July. Italy. 1823.

— *annuus*. 4. Yellow. July. South Europe. 1621.

— *auricula'tus*. 4. Purple. July. South Europe. 1800.

— *ci'cera*. 2. Red. South Europe. 1633.

— *cornu'tus*. 3. Purple. July. 1818.

— *hirsu'tus*. 4. Purple. July. England. Eng. Bot. ed. 3, t. 399.

— *italicus*. 3. Pink. August. Italy. (

— *lusita'nicus*. 3. July. Spain. 1827.

— *odora'tus*. 4. Variegated. July. Sicily. 1700. Sweet Pea.

— *purpu'reus*. 3. Purple. July. Crete B. M. t. 60.

— *sati'vus*. 3. White. South Europe. 1640. Chickling Vetch.

— *tenuifo'vus*. 3. Blue. July. N. Africa. 1820.

— *tingula'nus*. 4. Dark purple. July. Barbary. 1680. B. E. t. 1383.

— *tu'midus*. 1. Red. July. Piedmont. 1817.

HARDY DECIDUOUS CLIMBERS, ETC.

L. alta'icus. Altai. 1832. Herbaceous perennial.

— *Armitagea'nus*. 10. Purple, blue. May. Brazil. 1824. Shrub.

— *californicus*. 4. Purple. June. California. 1826. B. E. t. 1144.

— *cirrho'sus*. Rosy-pink. Pyrenees. 1870.

— *Davi'dii*. 4. Yellow. Japan and N. China. Gf. t. 1127.

— *decaphy'lus*. 4. Red, lilac. June. N. Amer. 1827. B. M. t. 3123.

- L. Drummondii*. 4-5. Bright red.
 — *grandiflorus*. 4. Rose. July. South Europe. 1814. B. M. t. 1938.
 — *heterophyllus*. 4. Flesh. August. Europe. 1781.
 — *incursus*. 2. Blue. July. Russia. 1808.
 — *intermedium*. 4. Red. August. North Europe. 1820.
 — *latifolius*. Pink. August. England. Everlasting Sweet Pea.
 — *luteus*. Orange. 1882.
 — *Macraei*. 3. Purple, white. October. Chili. 1824.
 — *magellanicus*. 3. Purple, blue. May. Cape Horn. 1744. Swt. Fl. Gard. ser. 2, t. 344.
 — *mutabilis*. 4. Purple, red. July. Siberia. 1825. Swt. Fl. Gard. ser. 2, t. 194.
 — *myrtifolius*. 3. Red. May. Philadelphia. 1822.
 — *nervosus*. 3. Blue. June. Monte Video. 1843. Greenhouse evergreen shrub.
 — *palustris*. 4. Pale purple. June. Britain and N. America.
 — *pisiformis*. 3. Purple. July. Siberia. 1795.
 — *polymorphus*. 3. Pale purple. July. Missouri, 1824.
 — *pratensis*. 3. Yellow. Britain.
 — *pubescens*. 3. Purple, blue. May. Buenos Ayres. 1843. Greenhouse evergreen shrub.
 — *purpureo-cerulea*. 10. Purple, blue. August. Brazil. 1836. Twiner.
 — *roseus*. 2. Red. July. Iberia. 1822.
 — *rotundifolius*. 1½. Rose. July. Tauria. 1822. B. M. t. 6522.
 — — *ellipticus*. Swt. Fl. Gard. ser. 2, t. 333.
 — *splendens*. Scarlet purple. Mts. of Lower California. 1881.
 — *stipulaceus*. 3. Purple. July. New York. 1816.
 — *sylvestris*. 3. Purple. July. Britain. Everlasting Pea.
 — *tomentosus*. 3. Lilac. June. Buenos Ayres. 1839. Maund Bot. t. 206.
 — *tuberosus*. 2. Red. July. Holland. 1596.
 — *venosus*. 4. White. Red. June. Pennsylvania. Swt. Fl. Gard. t. 37.

Lattice-leaf Plant. *Ouviraandra fenestralis*.

La'tua. (From *Latue*, the native name. Nat. ord., *Solanaceæ*; Tribe, *Solanaceæ*.)

Half-bardy shrub. For culture, see LYCIUM.

L. venosus. 4. Deep purple. February. S. Chili. 1863. Syn., *Lycioplestium pubiflorum*. B. M. t. 5373.

Lauge'ria. A synonym of *Guettarda*.

Laurel. *Laurus*.

Laurel Cherry. *Cerasus lauro-cerasus*.

Laure'lia. (From *Laurus*, the bay-tree; the leaves have a similar odour. Nat. ord., *Monimiaceæ*.)

Greenhouse tree, propagated by cuttings. Loam and peat equal parts.

L. novæ-zelandiæ. 150. New Zealand.

Laurentia. (After *M. A. Laurenti*, an Italian botanist. Nat. ord., *Campanulaceæ*.)

Greenhouse stemless herbs.

- L. erinoides*. Purple, white. August. South Africa. 1759. Syn., *Lobelia erinoides*. B. M. t. 3609.
 — *minuta*. Pale purple. Summer. South Africa. Syn., *Lobelia minuta*. B. M. t. 2590.

Lauresti'nus. *Viburnum laurustinus*.

Lau'rus. Laurel. (From the Celtic *blaur* or *laur*, green. Nat. ord., *Lauraceæ*; Tribe, *Litseaecæ*.)

The Bay (*Laurus nobilis*) 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 *nobilis*, the Sweet Bay, will flourish in the north of this Island without protection. It and its allies, the Sassafras, Benzoin, etc., 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 fibry 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. aestivalis*. See *Nectandra Willdenoviana*.
 — *albida*. 10. Yellow. Carolina. 1824.
 — *Benzoin*. See *Lindera Benzoin*.
 — *carolinensis* with its varieties, *glabra*, *obtusata* and *pubescens*, see *Persea carolinensis*.
 — *Catesbiana*. See *Nectandra Willdenoviana*.
 — *diospyrifolia*. See *Lindera melissæfolia*.
 — *geniculata*. B. M. t. 1471. See *Litsea geniculata*.

GREENHOUSE EVERGREENS.

- L. aggregata*. 3. Green, yellow. China. 1821.
 — *bullata*. See *Oreodaphne bullata*.
 — *canariensis*. 10. Yellow, green. Canaries. 1815.
 — *fœtens*. See *Oreodaphne fœtens*.
 — *indica*. See *Persea indica*.

STOVE EVERGREENS.

- L. cassia*. See *Cinnamomum zeylanicum*.
 — *chloroxylon*. 60. Green, white. W. Ind. 1778. Logwood Tree.
 — *coriacea*. See *Nectandra coriacea*.
 — *crassifolia*. See *Strychnodaphne puberula*.
 — *exulta* ta. See *Strychnodaphne floribunda*.
 — *floribunda*. See *Strychnodaphne floribunda*.
 — *nivea*. White. 1820.
 — *pa'tens*. See *Phœbe antillana*.
 — *salicifolia*. See *L. nobilis*, var. *angustifolia*.
 — *splendens*. See *Nectandra sanguinea*.
 — *thyrsiflora*. 30. Yellow, green. Madagascar. 1810.

HARDY EVERGREENS.

- L. nobilis*. 15. Yellow, white. April. South Europe. 1561. Sibth. Fl. Gr. t. 365.
 — — *angustifolia*. 20. Yellow, white. April. 1826. Syns., *L. salicifolia* and *L. nobilis*, var. *salicifolia*.
 — — *crispa*. 20. Yellow, white. May.
 — — *florople'no*. 20. Yellow, white. May.
 — — *latifolia*. Yellow, white. May. Asia. Half-hardy.
 — — *salicifolia*. See *L. nobilis*, var. *angustifolia*.
 — — *undulata*. 4. Yellow, white. April.
 — — *variegata*. 20. Yellow, white. May.
 — *regalis*. California. 1847.

Lava'ndula. Lavender. (From *lavo*,

to wash; referring to lavender-water. Nat. ord., *Labiateæ*; Tribe, *Ocimoideæ*.)

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. spica*) are ready for drying or distilling at the end of June.

HARDY EVERGREENS.

- L. latifolia*. 2. Lilac. August. South Europe. 1568. A form of *L. spica*.
— *spica*. 2. Lilac. August. South Europe. 1568. Common Lavender.
— *stœchas*. 1½. Lilac. June. South Europe. 1568.
— *vera*. Blue. July. South Europe. 1568. Bent. and Tr. t. 199.

GREENHOUSE EVERGREENS.

- L. abrotanoides*. 1½. Lilac. July. Canaries. 1699. Ref. Bot. t. 159. Syn., *L. canariensis*.
— *carnea*. A synonym of *Anisochilus carnosus*.
— *denta*. 1½. Lilac. August. South Europe. 1597. B. M. t. 400.
— *lana*. Violet. Spain. 1872. Ref. Bot. t. 301.
— *multifida*. 1½. Lilac. August. South Europe. 1597. Biennial.
— *pinna*. 1½. Lilac. June. Madeira. 1777. B. M. t. 401.
— *pubescens*. Lilac. June. 1816.
— *viridis*. 1½. Purple. June. Madeira. 1777.

Lavatera. (Named after the two *Lavaters*, Swiss naturalists. Nat. ord., *Malvaceæ*; Tribe, *Malvææ*.)

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. acerifolia*. 5. Pink. July. Teneriffe. 1820.
— *afriaca*. 5. Pink. June. Spain. 1820.
— *hispidula*. 6. Pink. June. Algiers. 1804. B. M. t. 2541.
— *lusitanica*. 3. Purple. August. Portugal. 1748.
— *maritima*. 2. White. May. South Europe. 1597.
— *micans*. 3. Purple. June. Spain. 1796.
— *olbia*. 3. Red, purple. August. Provence. 1570.
— *phœnicea*. 5. Pink. June. Canaries. 1816.
— *pseud-olbia*. 5. Red. June. 1817. Syn., *L. undulata*.
— *triloba*. 3. Light purple. June. Spain. 1759.
— *unguicula*. 6. Lilac. August. Samos. 1807.

HERBACEOUS PERENNIALS.

- L. neapolitana*. 6. Purple. June. Naples. 1818. Hardy.
— *plebeia*. 2. Pale. September. South Australia and Tasmania. 1820. Greenhouse. B. M. t. 2269.
— *thuringiaca*. 4. Light blue. August. Germany. 1731. Hardy.

HARDY ANNUALS AND BIENNIALS.

- L. ambergua*. 2. Purple. August. Naples. 1824.

- L. arboresca*. 6. Purple. August. Britain. Biennial. Eng. Bot. ed. 3, t. 279.
— *variegata*. Leaves variegated. 1882.
— *australis*. 2. Purple. August. South Europe. 1820.
— *biennis*. 4. Red. August. Caucasus. 1819. Biennial.
— *cretica*. 4. Light blue. July. Candia. 1728.
— *flava*. 4. Yellow. July. Sicily. 1818. Syn., *L. empedoclis*.
— *lanceolata*. 2. Purple. August. Europe. 1817.
— *punctata*. 2. Pale. August. Italy. 1800.
— *Salviettensis*. 6. Pink. July. 1831. Biennial.
— *sylvestris*. 2. Purple. August. Portugal. 1817.
— *trimestris*. 2. Flesh. June. Spain. 1633.

Lavender. *Lava'ndula*.

Lavender Cotton. *Santoli'na*.

Lavra'dia. (Named after the *Marquis of Lavradio*. Nat. ord., *Violaceæ*; Tribe, *Sauvagesieæ*.)

Sauvagesia, *Lavra'dia*, and *Luze'mburgia* compose this small tribe, which is intermediate between *Violaceæ* and *Frankeniaceæ*. Stove evergreen. Cuttings of ripened shoots in sand, under a bell-glass, and in heat; sandy peat and fibry loam, well drained. Summer temp., 60° to 80°; winter, 48° to 55°.

- L. glandulosa*. 1. Purple. Brazil. 1826. Syn., *L. montana*.

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 seed is employed, the best is that of the common meadow grass, *Poa annua*.

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.

Lawsonia. (Named after *Isaac Lawson, M.D.*, author of "A Voyage to Carolina." Nat. ord., *Lythraceæ*. Allied to *Grislea*.)

Stove trees, from the East Indies. 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. alba*. White. 1752. Syns., *L. inermis* and *L. spinosa*.
— *purpurea*. 12. Purple. 1820.

Laxma'nnia. (Named after *E. Laxmann*, a Siberian traveller. Nat. ord., *Liliaceæ*; Tribe, *Johnsoniææ*. Allied to *Aphyllanthes*.)

Greenhouse herbaceous perennials, from Australia. Divisions; loam and peat; require a cold pit or cool greenhouse during winter.

L. graecilis. $\frac{1}{2}$. Purple, white. June. Queensland. 1824.
— *grandiflora*. White, brown. West Australia.

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 farther 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 check the flow of the returning sap, and so assist in the production of adventitious roots at the bend, which is beneath the surface of the ground. 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 further 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. See figure.

Layia. (After *Thomas Lay*, naturalist during Captain Beechey's voyage, 1825-8. Nat. ord., *Compositæ*; Tribe, *Helianthoidæ*. Syns., *Callichroa*, *Calliglossa* and *Eriopappus*.)

Hardy annual herbs. Ordinary garden-soil. Seeds.

L. Calliglossa. 1 $\frac{1}{2}$. Yellow. N. America. Syn., *Oxyura chrysanthemoides*. B. R. t. 1850.
— *chrysanthemoides*. 1 $\frac{1}{2}$. Yellow. August. California. 1834.
— *elegans*. Yellow. May to August. 1838.
— *glandulosa*. White, yellow. N. W. America. B. M. t. 6856.
— *heterotricha*. White. California.
— *platyglossa*. 1. Yellow. October. California. 1835. Syn., *Callichroa platyglossa*. B. M. t. 3719.

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.

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. *Plumbago*.

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. *D'urca*.

Leavenworthia. (Named after *M. C. Leavenworth*. Nat. ord., *Cruciferae*; Tribe, *Arabideæ*. Allied to *Cardamine*.)

Hardy annual. Seeds in the open border in autumn. Common garden-soil.

L. aurea. $\frac{1}{2}$. Rosy, with yellow eye. June. S. United States. 1868.

Leaves are the organs, in which some of the most important functions of a plant are performed. They are very general, but not absolutely necessary organs, since branches sometimes perform their offices, as in many Cacti.

Such plants, however, as naturally possess them, are destroyed, or greatly injured, by being deprived of them. Leaves are divided into two classes, viz;—1. *Simple*, which may be either entire, or more or less divided, but with the segments not articulated with the main axis. 2. *Compound*, in which the leaflets are articulated. The simplest form of compound leaf, consisting of a single leaflet, is to be found in the Orange.

The duration of a leaf is, in general, for a year only, though in some plants 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-oxygenizing 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 Sennebler 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. This, 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 from the upper surface of the leaves. 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 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 is, in a certain measure, reversed, a small quantity of oxygen being absorbed from the atmosphere, and a yet smaller proportion of carbonic acid emitted.

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 hotheds, 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 consequently effects that change of colour which also occurs in autumn.

Lebe'ckia. (Probably derived from the native name. Nat. ord., *Leguminosæ*; Tribe, *Genistææ*.)

Greenhouse shrubs. For culture, see ASPALATHUS.

L. cytisioides. 2-4. Yellow. May. South Africa. Syn., *Crotalaria pulchella*. B. M. t. 1699.

- L. m'ida*. B. M. t. 2214. A synonym of *Indigofera filifolia*.
 — *sericea*. Yellow. South Africa. Syn., *Crotalaria angustifolia*. Jacq. H. Schoenb. t. 219.
 — *Simsiana*. Yellow. March. South Africa. 1820. Syn., *Sarcophyllum carnosum*. B. M. t. 2502.

Lebretonia. See **Pavonia**.

Lecanopteris. (From *lekane*, a basin, and *pterus*, a fern. Nat. ord., *Filices*—*Polypodiaceae*.) Now referred to **Polypodium**.

A fine stove fern. See **FERNs**.

L. carnosae. Yellow. May. Java.

Lechenaultia. See **Leschenaultia**.

Lecythea mixta. A fungus, allied to *Uredo*, producing pustules on the lower side of the leaves of Willows (*Salix*). When ripe these pustules burst and emit numerous rusty orange coloured spores.

Ledebouria. (Named after *M. Ledebour*, a botanical writer. Nat. ord., *Liliaceae*; Tribe, *Scilleae*.) See **Scilla**.
L. hyacinthina. B. M. t. 3226. See *Scilla indica*.

Ledenbergia. (Commemorative. Nat. ord., *Phytolaccaceae*; Tribe, *Rivineae*.)

Stove climbing shrub. Cuttings in sandy loam, in bottom-heat and under a hand-glass. Rich loam and leaf-mould; good drainage and plenty of pot-room. Summer temp., 60° to 85°; winter, 60° to 70°.

L. roseo-ænea. Leaves coppery-green above, violet beneath. Upper Amazons. 1869. Ill. Hort. t. 591. Syn., *Phytolacca purpurascens*.

Ledocarpum. (From *ledon*, the *Cistus*, and *karpos*, a fruit; fruit like that of the *Cistus*. Nat. ord., *Geraniaceae*; Tribe, *Oxalideae*.) Now referred to **Balbisia**.

L. pedunculataris. B. R. t. 1392. A synonym of *Balbisia pedunculataris*.

— *verticillatum*. B. R. t. 6170. See *Balbisia verticillata*.

Ledon Gum. *Cistus le'don*.

Le'dum. Labrador Tea. (From *ledon*, the Greek name of *Cistus*. Nat. ord., *Ericaceae*; Tribe, *Rhodoreae*. Allied to the *Rhododendron*.)

Hardy, evergreen, white-flowered shrubs. Layers; peat, with a little sand. Very pretty for bordering *Rhododendrons*.

L. buxifolium. See *Leptophyllum buxifolium*.
 — *canadense*. See *L. latifolium*, var. *canadense*.
 — *glandulosum*. 2-6. N. Amer.
 — *latifolium*. 3. April. N. Amer. 1763. Syn.,
L. groenlandicum.

— — *canadense*. 1½. April. Canada. Syn.,
L. canadense, B. C. t. 1049.

— — *globosum*. Garden form. G. C. 1878, ix.
 p. 698.

— *patu'stre*. 2. April. Europe. 1762. B. C. t. 560.

L. patu'stre decumbens. ½. April. Hudson's Bay. 1762.

Lee'a. (In memory of *James Lee*, a Hammersmith nurseryman, 1715-1795. Nat. ord., *Ampelideae*.)

Stove shrubs, requiring a rich loam and moist atmosphere.

L. ama'bilis. Leaves bronzy-green, with a white central stripe above; claret-red beneath. Borneo. 1880. G. C. 1882, xvii. p. 493, fig. 77.

— *coccinea*. Flowers scarlet outside, pink inside. Java? 1862. B. M. t. 5299. Syn.,
Aralia excelsa.

Lee-chee. *Nephe'lium Li'tchi*.

Leek. (*Allium porrum*.) 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, etc., 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 harder; and the *Flanders*.

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.

Legume. The seed-pod of the order *Leguminosæ*, e.g., Pea pod.

Leia'nthus. (From *leios*, smooth, and *anthos*, a flower. Nat. ord., *Gentianaceæ*; Tribe, *Chironiææ*. 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 fibry loam; a good heat when growing, cool and airy when blooming. General temperature, from 55° to 80°.

L. longifolius. 2. Yellow. August. Jamaica. 1844. Evergreen shrub. Syn., *Lisianthus longifolius*. B. R. t. 880.

— *nigrescens*. 1½. Blackish. August. Guatemala. 1842. Biennial. Syn., *Petalostylis nigrescens*.

— *umbellatus*. 20. Green, yellow. May. Jamaica. 1843. Evergreen tree.

Leiochilus. (From *leios*, smooth, and *cheilos*, a lip. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidiææ*. By some writers erroneously spelt *Leochilus*. Allied to *Oncidium*.)

Stove orchids. Division in spring; fibry 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. carinatus. Orange. Xalapa. 1842.

— *cochlearis*. Yellow. Dominica. 1842.

— *oncidioides*. ½. Green, purple. March. Mexico. 1840. Syns., *Oncidium macrantherum*, B. M. t. 3845, and *Rodriguezia maculata*.

— *sanguinolentus*. Crimson. La Guayra. 1842.

Leiophyllum. (From *leios*, smooth, and *phyllon*, a leaf. Nat. ord., *Ericaceææ*. Allied to *Ledum*. Syn., *Ammyrsine*.)

Hardy evergreen shrubs. Cuttings and layers; peaty soil.

L. buxifolium. 1. White. May. New Jersey. 1736. B. M. t. 6752. Syns., *L. thymifolia*, *Ammyrsine buxifolia*, B. R. t. 531, and *Ledum buxifolium*.

— *Lycnii*. White. April. Carolina. 1812.

Lemon. See **Citrus**.

Lemon-grass. *Andropogon schœnanthus*.

Lemo'nia. (Named after Sir C. Lemon, M.P. Nat. ord., *Rutaceææ*; Tribe, *Cuspariææ*.) See **Ravenia**.

L. spectabilis. B. R. 840, t. 59. See *Ravenia spectabilis*.

Lenne'a. (Named after M. Lenné, a foreign landscape-gardener. Nat. ord., *Leguminosææ*; Tribe, *Galegæææ*. Allied to *Wistaria*.)

Greenhouse deciduous shrub. Young shoots in spring, or ripened shoots towards autumn, under a hand-light. Must have similar protection and treatment to the *Genista canariensis*

L. robinoides. Crimson. April. Mexico. 1843. Paxt. Fl. Gard. iii. p. 27, fig. 246.

Lenticula palustris. A synonym of *Pistia stratiotes*.

Leo'chilus. See **Leiochilus**.

Leo'nis. Lion's Ear. (From *leon*, a lion, and *ous*, an ear; some resemblance in the flower. Nat. ord., *Labiataææ*; Tribe, *Stachydeæææ*. 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 fibry loam. Common greenhouse and plant-stove treatment. Herbaceous species, by seeds, and division of the plant.

L. intermedia. 3. Orange. September. Cape of Good Hope. 1822. B. R. t. 850.

— *la-cerus*. See *Leonurus cardiacus*, var. *villosus*.

— *Leonurus*. 3. Scarlet. November. Cape of Good Hope. 1812. G. C. 1883, xix. p. 186, fig. 28. Syn., *Phlomis Leonurus*.

— *nepetifolia*. 3. Orange. September. E. Ind. 1778. B. R. t. 281.

— *ovata*. 1½. Orange. June. Cape of Good Hope. 1813.

Leo'ntice. (From *leon*, a lion; from a supposed resemblance of the leaf to the point of a lion's foot. Nat. ord., *Berberidæææ*.)

For culture, see CAULOPHYLLUM.

L. Albe'rti. Brownish-yellow. Turkestan.

— *altaica*. ½. Yellow. April. Altai Mts., Siberia. B. M. t. 3245.

— *chryso'gonum*. Maund Bot. t. 50. See *Bongardia Ranzolfii*.

— *thalictroides*. B. C. t. 1473. See *Caulophyllum thalictroides*.

Leo'ntodon. (From *leon*, a lion, and *odus*, a tooth; in reference to the edge of the leaves. Nat. ord., *Compositæææ*. Syn., *Apargia*.)

The following hardy herbaceous perennial is the only one worth cultivating, though there are many other species.

L. croceum aurantiacum. 1. Orange. June. Hungary. 1816. Syn., *Apargia aurantiaca*.

Leontopo'dium. Lion's Foot. (From *leon*, a lion, and *pous*, a foot; resemblance of the flower-heads. Nat. ord., *Compositæææ*; Tribe, *Inuloideæææ*. Allied to *Antennaria*.)

Hardy herbaceous perennial. Seeds, and division of the roots in spring; common soil.

L. alpinum. Yellow. June. Alps of Europe. 1776. G. C. 1881, xvi. p. 529. Syns., *L. helveticum*, *L. sibiricum*, *L. vulgare*, and *Gnaphalium Leontopodium*. B. R. t. 1958.

— The Edelweiss.

Leonu'rus. (From *leon*, a lion, and *oura*, a tail. Nat. ord., *Labiataæææ*; Tribe, *Stachydeææææ*.)

Annual herbs. For culture, see LEONOTIS.

L. cardiaca. 3. Red. June. Britain.

— *crispus*. 2. Red. July. Siberia. 1658.

— *villosus*. 3. Purple. July. Tauria. 1820. Syn., *Leonotis tacerus*.

L. lana'tus. 2. Yellow. July. Siberia. 1752.
— *sibi'ricus*. 2. Red. July. Siberia. 1759.

Leopard Moth. This moth occasionally infests the interior of the stems of Apple, Pear and Plum trees, feeding on their wood, but its attack appears to do but little damage. The ground colour of the moth is white, which is thickly covered with bluish-black spots, whence its name.

Leopard's Bane. *Doro'nicum*.

Leopoldi'nia. (Named after the late Empress of Brazil. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

L. pu'ichra. See *Cocos Weddelliana*.

Lepa'chys. (From *lepis*, a scale, and *achyron*, chaff; referring to the scales of the involucre. Nat. ord., *Compositæ*.)

Hardy herbaceous plant.

L. prima'ta. 4. Yellow. September. North America.

Lepa'nthes. (From *lepis*, a scale, and *anthos*, a flower; scales flower-shaped inclosing the stem. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Pleurothalleæ*.)

Stove orchids. See ORCHIDS.

L. calodi'ctyon. †. Leaves pale green, with rich brown veins; flowers inconspicuous. Andes. B. M. t. 5259.

— *sangui'nea*. Red-rose. Jamaica. 1844. B. M. t. 4112.

— *tridenta'ta*. Purple, yellow. Jamaica. 1835. B. R. t. 1762.

Lepechi'nia. (Named after *Lepechin*, a Russian botanist. Nat. ord., *Labiata*; Tribe, *Satureineæ*. Allied to *Sphacele*.)

Hardy herbaceous perennials. 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. clinopodi'folia. See *Mentha dahurica*.

— *spica'ta*. 1. Pale yellow. July. Mexico. 1800. B. R. t. 1292.

Leperi'za. (From *lepis*, a scale, and *rhiza*, a root; in reference to the imbricating scales of the bulb. Nat. ord., *Amaryllidæ*; Tribe, *Pancreaticeæ*.) See **Stricklandia**.

L. eucrosioi'des. See *Stricklandia eucrosioides*.
— *latifo'lia*. B. M. t. 4952. See *Urceolina latifolia*.

Lepicy'stis. (From *lepis*, a scale, and *kyste*, a box; alluding to the sori being placed among scales. Nat. ord., *Filices—Polypodiaceæ*.)

L. inca'na. 1. Tropical America. 1841.

— *sepu'ita*. 1. Tropical America. 1841.

— *squama'ta*. 10. W. Indies.

Lepida'gathis. (From *lepis*, a scale, and *agathis*, a ball; referring to the

bracts. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*. Allied to *Geissomeria*.)

Stove evergreen. Cuttings of young shoots, getting a little firm, in May, in sandy soil, in bottom-heat; fibry, sandy loam, and a little peat and leaf-mould. Summer temp. 60° to 80°; winter, 45° to 58°.

L. crista'ta. 2. India. 1820.

Lepi'dium. (A name used by Dioscorides: Nat. ord., *Cruciferae*.)

L. sati'vum is the Garden Cress, a hardy annual, propagated by seeds.

L. sati'vum. 1-1½. White. JUNE. Persia? 1548.

Lepido'ptera. (From *lepis*, a scale, and *pteron*, a wing.) An order of insects comprising the Butterflies and Moths, the characteristics of which are:—body hairy, or scaly; mouth with a proboscis; wings covered with scales. The larvæ are known as caterpillars. Butterflies have the antennæ with a club-shaped tip, moths with a pointed or plumose one.

Lepidoste'mon *pentstemonoi'des*. See **Pentstemon Lobbianus**.

Lepidoza'mia. See **Macrozamia**.

Lepi'smium. (From *lepis*, a scale; referring to the small scales at the crenatures. Nat. ord., *Cactaceæ*; Tribe, *Opuntieæ*.) United by some with **Rhipsalis**.

Greenhouse fleshy-leaved plants. For culture, see **CEREUS**.

L. caverno'sum. Stems flat. S. Brazil and Paraguay. Gf. 1890, p. 151, fig. 38.

— *commu'ne*. Rose, white. September. 1836. B. M. t. 3763.

— *dissi'mile*. S. Brazil. Gf. 1890, p. 148, figs. 36-37.

— *myosu'rus*. 4. Yellow, white. July. Brazil. 1837. B. M. t. 3755. Syn., *Rhipsalis paradoxa*.

— *parado'xum*. 3. 1846.

Lepta'ndra. See **Veronica**.

Lepta'nthus. (From *leptos*, slender, and *anthos*, a flower. Nat. ord., *Pontederaceæ*.) A synonym of **Heteranthera**.

L. grami'neus. 1. Yellow. July. N. Amer. 1823. A synonym of *Heteranthera graminea*.

— *lim'o'sa*. See *Heteranthera limosa*. B. M. t. 6192.

— *renifo'rmis*. See *Heteranthera reniformis*.

Leptarrhe'na. (From *leptos*, slender, and *arren*, male. Nat. ord., *Saxifragaceæ*; Tribe, *Saxifragææ*.)

Hardy herbaceous perennial. For culture, see **SAXIFRAGA**.

L. pyroli'folia. †. May. N. America. 1827. Syn., *Saxifraga pyroliifolia*.

Leptine'lla. (From *leptos*, slender; the habit of these plants. Nat. ord., *Compositæ*; Tribe, *Anthemideæ*.)

Small hardy, perennial herbs, from the Southern Hemisphere.

- L. dioica*. † Yellow. Summer. New Zealand.
— *lanata*. Yellow. Lord Auckland's Islands.
— *plumosa*. Yellow. Lord Auckland's Islands.

Leptocallis. See *Ipomæa*.

Leptoceras. (From *leptos*, slender, and *keras*, a horn; referring to the form and substance of the column. Nat. ord., *Orchidææ*; Tribe, *Neottieæ*.) United to **Caladenia** under the specific names annexed.

Greenhouse terrestrial orchids, from Swan River. Division in spring; fibry peat, well drained, with a little leaf-mould and sand. Winter temp., 45° to 50°.

- L. ambriata*. Yellow. May. CALADENIA FIMBRIATA.
— *oblonga*. Yellow. May. CALADENIA MENZESII.
— *pectinata*. Yellow. May. CALADENIA FIMBRIATA.

Leptochilus. (From *leptos*, slender, and *cheilos*, a lip; alluding to the form of the indusium. Nat. ord., *Filices—Polypodiaceæ*.)

Stove fern. See FERNES.

- L. axillaris*. See *Gymnopteris nicotianifolia*.
— *decurrens*. Indian Islands.

Leptodactylon. (From *leptos*, slender, and *dactylos*, a finger; referring to the form of the leaves. Nat. ord., *Polemoniaceæ*.) See *Gilia*.

- L. californicum*. B. M. t. 4872. See *Gilia californica*.

Leptodermis. (From *leptos*, slender, and *derma*, the skin; referring to the thin bark. Nat. ord., *Rubiaceæ*; Tribe, *Pæderieæ*. 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 fibry loam. Winter temp., 45° to 48°.

- L. lanceolata*. 3. Yellow. June. Nepal. 1842.

Leptogramma. (From *leptos*, slender, and *gramma*, writing; referring to the form of the spore or seed-cases. Nat. ord., *Filices*.) Now referred to **Gymnogramme**.

Stove ferns, with brownish-yellow spores. See FERNES.

- L. asplenoides*. June. Jamaica.
— *gracilis*. June. Brazil.
— *linkiana*. Brazil.
— *polypodioides*. June. Brazil.
— *rupesstris*. Tropical America.
— *totia*. S. Africa.
— *villosa*. 2. July. Brazil. 1836.

Leptomeiria. (From *leptos*, slender, and *meris*, a part; referring to the slender and almost leafless shoots. Nat. ord., *Santalaceæ*; Tribe, *Osyrideæ*.)

Greenhouse evergreens, with white blossoms, from Australia. Cuttings of firm young shoots in sand, under a bell-glass; sandy peat and fibry

loam, with pieces of charcoal. Winter temp., 40° to 48°.

- L. aida*. 6-8. Queensland. 1823.
— *Billardieri*. 1-7. New South Wales. 1823.

Leptopteris superba. See *Todea*.

Leptosiphon. (From *leptos*, slender, and *siphon*, a tube; alluding to the tube of the flower. Nat. ord., *Polemoniaceæ*.) See *Gilia*.

- L. androsaceus*. See *Gilia androsacea*.
— *cihiatus*. See *Gilia ciliata*.
— *densiflorus*. See *Gilia densiflora*.
— *corolla alba*. See *Gilia densiflora*, var. *alba*.
— *grandiflorus*. See *Gilia grandiflora*.
— *luteus*. See *Gilia lutea*.
— *paullidus*. See *Gilia lutea*, var. *pallida*.
— *parviflorus*. See *Gilia micrantha*.
— *roseus*. See *Gilia micrantha*.

Leptospermum. (From *leptos*, slender, and *sperma*, a seed. Nat. ord., *Myrtaceæ*; Tribe, *Leptospermeæ*. Allied to *Metrosideros*.)

Australian, greenhouse, evergreen plants, with white flowers. Seeds in a hotbed, 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 *lanigerum* and *grandiflorum*, would do well on conservatory walls.

- L. ambiguum*. B. C. t. 1998. A synonym of *Kunzea corifolia*.

- *annua*. White, pink. Mindanao. Gfl. t. 1184.
— *arachnoides*. 3. June. 1795.
— *attenuatum*. 5. June. 1795.
— *baccatum*. 3. June. 1790.
— *emarginatum*. 5. June. 1818.
— *flavescens*. 5. June. 1787.
— *flezuosum*. A synonym of *Agonis flezuosa*.
— *grandiflorum*. 5. June. 1810. B. C. t. 514.
— *juniperinum*. 2. June. 1790.
— *lanigerum*. 5. June. 1774.
— *multicaule*. 4. June. 1824.
— *myrtifolium*. 8-10. June. 1824.
— *obitum*. June. 1800.
— *pedunculatum*. 4. July.
— *seoparium*. White. New Zealand. 1876.
The leaves are used as tea. B. M. t. 3419.

- *sericeum*. 5. June. N. S. Wales. 1818.
— *squarrosum*. 4. July.
— *thymifolium*. 5. June. 1824.
— *triloculare*. 2. June. 1800. B. C. t. 791.

Leptostelma maxima. See *Eriogon maximum*.

Leptosyne. See *Coreopsis*.

Leptosites. (From *leptos*, slender; referring to the leaves. Nat. ord., *Orchidææ*; Tribe, *Epidendree-Lælicæ*. Allied to *Brassavola*.) See *Tetramicra*.

- L. bicolor*. B. R. t. 1625. B. M. t. 3734. See *Tetramicra bicolor*.

Leschenaultia. (Named after M. Leschenault, a French botanist. Nat. ord., *Goodeniaceæ*.)

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, fibry

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. arcuata*. B. M. t. 4265. See *L. linarioides*.
 — *Baxteri*. See *L. formosa*.
 — *ma'jor*. Australia. Rev. Hort., 1886, p. 468.
 — *bicolor ma'jor*. Blus. Australia. Garden, Oct. 4, 1884.
 — *bilo'ba*. 1. Blue. June. 1840.
 — *formosa*. 1. Scarlet. Juns. 1824. B. M. t. 2800. Syns., *L. Baxteri*, *L. multiflora*, B. C. t. 1579, and *L. oblata*.
 — *lari'cina*. 1½. Scarlet. June. 1844. Syn., *L. splendens*, B. M. t. 4255.
 — *multiflora*. } See *L. formosa*.
 — *oblata*. }
 — *splendens*. See *L. larcicina*.

Lespedeza. (Named after *Lespedez*, once governor of Florida. Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*. Allied to *Halim.*)

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, fibry peat. *Eriocarpia* requires the greenhouse, and *glomerata* must be grown as a tender annual.

- L. angustifolia*. 2. Pale purple. June. 1800. Perennial.
 — *bicolor*. 3. Rose-purple. October. N. China and Japan. 1858. B. M. t. 6602.
 — *capillipes*. 3. Purple. China.
 — *Dela'vayi*. 3-6. Violet to black-purple. Yunnan. Rev. Hort. 1890, p. 225, fig. 70.
 — *divergens*. 2. Violet. July. 1800. Syn., *L. violacea*, var. *divergens*.
 — *eriocarpa*. 1. Violet. July. Nepaul. 1819. Greenhouse evergreen.
 — *frutescens*. 4. Purple. July. 1793. Deciduous shrub.
 — *glomerata*. 3. Purple. July. E. Indies. 1819. Stove annual.
 — *hirtella*. 3. Violet. August. China.
 — *macrocarpa*. 3. Rosy-violet. N. China. 1833.
 — *polyantha*. Purple. China.
 — *polystachya*. 3. White. July. 1789. Perennial.
 — *prostrata*. ½. Purple. July. 1810. Trailer.
 — *reticulata*. 2. Purple. 1816. Syn., *L. violacea*, var. *reticulata*.
 — *sessiliflora*. 3. Purple. 1800. Syn., *L. violacea*, var. *sessiliflora*.
 — *Sieboldii*. Japan. Syn., *Desmodium penduliflorum*.
 — *Stru'vei*. 1½. Purple. July. 1824. Hardy annual.
 — *trigono'clada*. Pale yellow or whitish. Heeh-an-men, China. 1890.
 — *villo'sa*. White. July. 1819. Perennial.
 — *violacea*. 2. Violet. July. 1799. Perennial.
 — *divergens*. See *L. divergens*.
 — *reticulata*. See *L. reticulata*.
 — *sessiliflora*. See *L. sessiliflora*.
 — *yunnanensis*. Pale violet. China.

Lesser'tia. (Named after the French botanist, *Baron Delessert*. Nat. ord., *Leguminosæ*; Tribe, *Galegeææ*. 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. argentea*. ½. Purple. June. 1822. Syn., *L. tomentosa*.
 — *diffusa*. ½. Rosy-purple. Syn., *Galega dubia*. Jacq. Ic. t. 576.
 — *vesicaria*. Purple. June. 1825.
 — *virgata*. Purple. June. 1823.

GREENHOUSE HERBACEOUS PERENNIALS.

- L. exaltata*. 1. Red. August. 1776.
 — *perennans*. Reddish-lilac. Natal. 1873. B. M. t. 6106.
 — *procumbens*. Purple. June. 1753. Syn., *Colutea procumbens*.
 GREENHOUSE EVERGREENS.
L. brachystachya. 1. Purple. July. 1826.
 — *falciflora*. 1. Purple. July. 1826. Syn., *Vicia pellicuda*. Jacq. H. Schoenb. t. 222.
 — *frutescens*. 1. Purple. July. 1826. B. R. t. 970.
 — *pubescentis*. 1½. Red. May. 1817. B. M. t. 2064.

Lettsomia. (Named after *J. C. Lettsom*, a British physician and naturalist. Nat. ord., *Ternstroemiaceæ*; Tribe, *Ternstroemiææ*. Allied to *Freziera*.)

Stove evergreen shrub. Cuttings of young shoots, getting firm, in April or May, in sand, under a bell-glass, and a sweet bottom-heat; sandy, fibry loam, and sandy, turfy peat. Summer temp., 60° to 85°; winter, 55° to 60°.

- L. tomentosa*. 4. White. Peru. 1823.

Lettuce. *Lactuca*.

Lettuce Fungus. *Peronospora ganglioniflora*.

Leucadendron. (From *leukos*, white, and *dendron*, a tree; the white-leaved Silver-trees of the Cape colonists. Nat. ord., *Proteaceæ*; Tribe, *Proteææ*.)

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; fibry loam and sandy peat, with a few rough pieces of charcoal, to keep the compost open. Winter temp., 38° to 45°.

- L. abietinum*. Yellow. Syn., *Protea teretifolia*. Andr. Rep. t. 461.
 — *æmulum*. 3. July. 1789. Syn., *Protea incurva*. Andr. Rep. t. 429.
 — *angustatum*. 3. Juns. 1820.
 — *argenteum*. 15. August. 1693. B. R. t. 979.
 — *caudatum*. 3. May. 1800.
 — *cinereum*. 3. July. 1774.
 — *comosum*. 3. May. 1818. Syn., *Protea globosa*. B. M. t. 878.
 — *concinnum*. 3. 1800.
 — *coloratum*. 3. May. 1774.
 — *confertum*. Pale yellow. 1803. Syn., *Protea confertifera*. Andr. Rep. t. 541.
 — *corymbosum*. 3. April. 1790. B. R. t. 402. Syn., *Protea corymbosa*. Andr. Rep. t. 495.
 — *deciduum*. 3. 1790.
 — *floridum*. 3. April. 1795.
 — *fusiformum*. Purplish. June. Syn., *Protea fusciflora*. Jacq. H. Schoenb. t. 27.
 — *glaberrimum*. 3. May. 1810.
 — *grandiflorum*. 3. April. 1789.
 — *imbricatum*. 4. 1790.
 — *inflatum*. 3. April. 1800.

- L. Levisa* num. 4. April. 1774.
 — *linifolium*. 4. May. Syn., *Protea linifolia*. Jacq. H. Schoenb. t. 26.
 — *marginalis* tum. 3. May. 1800.
 — *ovale*. 3. May. 1818.
 — *plumsum*. 4. July. 1774.
 — *retusum*. 3. May. 1810.
 — *salignum*. 3. May. 1774.
 — *sericeum*. 3. May. 1817.
 — *spathulatum*. 3. May. 1818.
 — *squarrosum*. 3. 1824.
 — *stellata* re. Bluish. June. Syn., *Protea stellaris*. B. M. t. 881.
 — *strictum*. 3. June. 1795.
 — *tortum*. B. R. t. 826. Syn., *Protea torta*. Jacq. H. Schoenb. t. 401.
 — *venosum*. 3. May. 1816.

Leuca'na (from *leukos*, shining. Nat. ord., *Leguminosæ*; Tribe, *Mimosæ*), is a genus formed of *Acacia glauca* and *A. trichodes*.

Leu'cas. (From *leukos*, white; the colour of the flowers. Nat. ord., *Labiatae*; Tribe, *Stachydeæ*.)

For culture, see PHLOMIS.

- L. tinifolia*. 1. White. Tropics of E. Hemisphere. Syn., *Phlomis zeylanica*. Jacq. Ic. t. 111.
 — *martineznsis*. White. Throughout the Tropics. Syn., *Phlomis caribæa*. Jacq. Ic. t. 110.

Leuce'ria. (From *leukeres*, white; the leaves of some of the species have a white felt beneath. Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*.)

Greenhouse herb.

- L. runcinata*. 1½. White. June. Chili. 1844. Syns., *Chabrea runcinata*. B. M. t. 4116, *Lasiorrhiza rosea* and *L. runcinata*.

Leuchtenbe'rgia. (Named after Prince Leuchtenburg. Nat. ord., *Cactaceæ*; Tribe, *Echinocactæ*.)

Greenhouse evergreen. For culture, see CACTUS—*Echinocactus*.

- L. principis*. 1. Yellow. June. Mexico. 1847. B. M. t. 4393.

Leucocarpus. (From *leukos*, white, and *carpos*, a fruit. Nat. ord., *Scrophulariaceæ*; Tribe, *Cheloneæ*.)

Half-hardy perennial. Seed in autumn; division and cuttings in spring; requires a little protection in winter; loam, leaf-mould, peat, and a little sand.

- L. alatus*. 2. Yellow. Vera Cruz. 1830. Swt. Fl. Gard. ser. 2, t. 124. Syn., *Mimulus perforiatus*. B. M. t. 3067.

Leucocoryne. (From *leukos*, white, and *koryne*, a club; referring to the sterile anthers. Nat. ord., *Liliaceæ*; Tribe, *Alliæ*. Allied to *Brodiaea*.)

Beautiful little half-hardy bulbs, from Chili, requiring the same treatment as *Ixias*.

- L. alliciaea*. 1. White. 1825. Paxt. Mag. xi. p. 101.
 — *ixioides*. Lilac. October. 1821. Ref. Bot. t. 348. Syn., *Brodiaea ixioides*. B. M. t. 2382.
 — — *odora* ta. 1. White. August. 1826. B. R. t. 1293.

Leuco'jum. Snowflake. (From *leukos*, white, and *ion*, a violet; referring to the colour and fragrance of the flowers. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllidææ*. Allied to *Galanthus*. Syns., *Acis* and *Erinosma*.)

- Hardy bulbs. Offsets in spring; sandy loam.
L. aestivum. ½. White. May. Central and South Europe. B. M. t. 1210.
 — *autumnale*. ½. Pink, white. August. Portugal and Morocco. B. M. t. 960. Syn., *Acis autumnalis*.
 — *Hernandezii*. See *L. pulchellum*.
 — *hyemale*. ½. White, green. April. South France. B. M. t. 6711.
 — *longifolium*. ½-1. White. April. Mountains of Corsica.
 — *pulchellum*. ½. White. April. Sardinia. Syn., *L. Hernandezii*.
 — *roseum*. Rose-red. September. Mountains of Corsica. 1820. Syn., *Acis rosea*. Swt. Fl. Gard. t. 297.
 — — *longifolium*. A synonym of *L. longifolium*.
 — *strumosum*. See *Hesaea filifolia*.
 — *trichophyllum*. ½-1. White. April. S.W. Europe. B. R. t. 554. Syn., *Acis trichophylla*.
 — — *grandiflorum*. ½. White. April. Spain. Red. Lil. t. 217. Syn., *Acis grandiflora*.
 — *vernum*. ½-1. White, green. March. Central Europe. B. M. t. 46. Syn., *Erinosma vernum*.
 — — *carpathicum*. White, yellow. Syn., *Erinosma carpathicum*. B. M. t. 1993.

Leucophyllum. (From *leukos*, white, and *phyllon*, leaf; the leaves are silvery. Nat. ord., *Scrophulariaceæ*.)

Greenhouse shrub.

- L. texanum*. Violet-purple. Mexico. 1839. G. and F. iii. p. 483, fig. 63.

Leuco'pogon. (From *leukos*, white, and *pogon*, a beard; referring to the hairs on the flowers. Nat. ord., *Epicridaceæ*; Tribe, *Stypheliææ*. 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 fibry, 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. amplexicaulis*. 3. 1815.
 — *collinus*. 8. May. 1824.
 — *Cunninghamii*. 4. May.
 — *ericoides*. 6. 1815.
 — *juniperoides*. 3. May. 1804.
 — *lancoletus*. 12. May. 1790. B. M. t. 3162.
 — *obovatus*. 1. June. 1824.
 — *parviflorus*. B. R. t. 1560. See *L. Richei*.
 — *polystachys*. B. C. t. 1433. See *L. Richei*.
 — *Richei*. 5. June. 1822. Syns., *L. parviflorus*, *L. polystachys* and *Styphelia parviflora*. Andr. Rep. t. 287.
 — *se'tiger*. 2. 1824.
 — *striatus*. 3. June. 1823.
 — *verticillatus*. 1837. B. M. t. 6366.
 — *virgatus*. 2. June. 1824.

Leucorha'phis. (From *leukos*, white, and *rhaphis*, a needle. Nat.

ord., *Acanthaceae*.) A synonym of **Brilliantaisia**.

L. La'mium. See *Brillantaisia Owariensis*.
— *Vogelia'na*. See *Brillantaisia Vogelianana*.

Leucosce'ptrum. (From *leukos*, white, and *skeptron*, staff. Nat. ord., *Labiatae*.) See **Teucrium**.

L. ca'num. See *Teucrium macrostachyum*.

Leucospe'rmum. (From *leukos*, white, and *sperma*, a seed. Nat. ord., *Proteaceae*; Tribe, *Protea*. 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, fibry loam, with a little peat, nodules of charcoal, freestone, and brick. Winter temp., 35° to 45°.

L. attenuat'um. 3. June. 1820.
— *ca'ndicans*. See *L. tomentosum*, var. *candicans*.
— *formosum*. 4. July. 1784. Syn., *Protea formosa*. Andr. Rep. t. 17.
— *grandiflorum*. 4. June. 1800.
— *linea're*. 4. July. 1774.
— *me'dium*. 3. July. 1794.
— *pa'rile*. 2. August. 1789.
— *patulum*. 2. August. 1823.
— *spathulatum*. 2. June. 1825.
— *tomentosum*. 2. June. 1789.
— *ca'ndicans*. 2. August. 1790. Andr. Rep. t. 294. Syn., *L. candicans*.

Leucoste'gia. (From *leukos*, white, and *stegnos*, a covering; alluding to the white indusium. Nat. ord., *Filices*—*Polypodiaceae*.)

Stove ferns. See FERNS.

L. affinis. 3. Borneo.
— *chærophylla*. E. Indies.
— *impressa*. 2. E. Indies.

Leucoste'mma. (From *leukos*, white, and *stemma*, crown. Nat. ord., *Compositae*; Tribe, *Inuloideae*.) A synonym of **Helichrysum**.

Leuco'thoë. (A sea-goddess of Greek mythology. Nat. ord., *Ericaceae*.)

Hardy shrubs requiring same culture as **ANDROMEDA**.

L. acuminata. 2-3. White. June. N. America. Syn., *Andromeda acuminata*.
— *axillaris*. 2-3. White. May. N. America. 1765. Syn., *Andromeda axillaris*.
— *Catesbaei*. 2-4. White. May. N. America.
— *coriacea*. 3. Pink or white. June. N. America. 1763. Syn., *Andromeda coriacea* and *A. mariana*. B. M. t. 1579.
— *Daviesii*. 3-5. White. California. 1853. B. M. t. 6247.
— *nerifolia*. Brazil. B. M. t. 4593. Syn., *Andromeda nerifolia*. Now known as *Agarista nerifolia*.
— *pulchra*. B. M. t. 4314. Now known as *Agarista pulchra*.
— *racemosa*. 4-10. White. May. N. America. Syn., *Andromeda spicata*.
— *recurva*. 2. White. June. N. America. *Andromeda recurva*.
— *spinulosa*. 2. White. May. N. America. Syn., *Andromeda Catesbaei*.

Leu'zea. (Named after *De Leuze*. Nat. ord., *Compositae*; Tribe, *Cynaroideae*. Allied to *Serratula*.)

Hardy herbaceous perennials, with purple flowers. Seeds, and divisions of the plant in spring; common garden-soil.

L. altaica. 3. August. Siberia. 1822.
— *australis*. See *Centaurea australis*.
— *carthamoïdes*. See *Centaurea carthamoïdes*.
— *conifera*. 3. July. South Europe. 1683.
— *sibirica*. 1. June. Siberia. 1817.

Levi'ticum. (From *levo*, to assuage; said to relieve flatulency. Nat. ord., *Umbelliferae*; Tribe, *Seselineae*. Allied to *Angelica*.)

Hardy herbaceous perennial. Seeds, and divisions of the plant in spring; common soil.

L. officinale. 6. Pale yellow. June. Italy. 1596. Echb. Fl. Ger. t. 1941.

Lewi'sia. (Named after *Captain Lewis*, the traveller. Nat. ord., *Portulacaceae*.)

Hardy herbaceous perennial. Seeds, and dividing the roots in spring; light, sandy loam, with brick-rubbish.

L. rediviva. 3. Rose. N. Amer. 1826. Fl. Mag. new ser. t. 82.

Leyceste'ria. (Named after *W. Leysser*, once chief justice at Bengal. Nat. ord., *Caprifoliaceae*; Tribe, *Lonicereae*. Allied to *Symphoricarpus*.)

Hardy evergreen shrub. Seeds in spring; cuttings of young, short shoots in spring, under a bell-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. formosa. 4. White, purple. August. Temperate Himalayas. 1824. B. M. t. 3699.

Leysse'ra. (Named after *T. W. Leysser*, a German botanist. Nat. ord., *Compositae*; Tribe, *Inuloideae*.)

Greenhouse evergreens, orange-flowered, and from South Africa, except *capillifolia*. Cuttings of half-ripened shoots in sand, over sandy peat, in summer; peat and loam, both rough and sandy.

L. capillifolia. 1. Yellow. June. Barbary. 1822.

— *ciliata*. 1. August. 1816.
— *gnaphaloides*. 2. August. 1774.
— *polifolia*. 1. August. 1820.
— *squarrosa*. A synonym of *Helipterum gnaphaloides*.

Lho'tskya. (Named after *Dr. John Lhotsky*, a German botanist. Nat. ord., *Myrtaceae*; Tribe, *Chamelaucieae*. 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. acutifolia. Pale yellow. June.
— *ericoides*. 2-4. White. W. Australia.
— *hirta*. A synonym of *L. ericoides*.
— *violacea*. Violet. June. 1843.

Li'abum. (Derivation not explained. Nat. ord., *Compositae*; Tribe, *Senecionideae*. Allied to *Andromachia*.)

Stove herbaceous perennial. Division in spring; sandy loam, leaf mould, and a little peat. Summer temp., 60° to 80°; winter, 48° to 55°.

- L. Bro'nsii*. Yellow. June. Jamaica. 1768.
— *uniflorum*. Yellow, orange. Peruvian Andes. 1870. Half-hardy alpine. Syn., *Paranephelius uniflorus*. B. M. t. 5826.

Lia'tris. (Derivation not known. Nat. ord., *Compositæ*; Tribe, *Eupatoriaceæ*.)

Hardy herbaceous perennials, from North America. Division in spring; sandy loam and peat; those from Carolina require protection in winter.

- L. bellidifolia*. 2. Pink. August. Syn., *Carpophorus bellidiflorus*.
— *borealis*. 1½. Pink. August. Paxt. Mag. v. t. 27.
— *corymbosa*. 3. Purple. September. Carolina. 1825. Syn., *Carpophorus corymbosus*.
— *cyllinaria*. 4. Pink. September. 1811.
— *elegans*. 4. Purple. September. 1787.
— *gracilis*. 1½. Purple. September. Carolina. 1818.
— *graminifolia*. 3. Pink. August.
— *heterophylla*. 3. Purple. July. 1790.
— *intermedia*. 2. Purple. September. 1823. B. R. t. 948.
— *odoratissima*. Andr. Rep. t. 633. See *Trilisia odoratissima*.
— *paniculata*. See *Trilisia paniculata*.
— *pilosula*. 1½. Purple. September. 1783.
— *propinqua*. 2. Purple. August. 1838. B. M. t. 3829.
— *purpurea*. 1. Purple. September.
— *pycnostachya*. 3. Purple. September. 1732.
— *scariosa*. 4. Purple. July. 1739. B. M. t. 1709.
— *sphaerocarpa*. 3. Purple. September. 1817. Swt. Fl. Gard. t. 87.
— *spicata*. 6. Purple. September. 1732. B. M. t. 1411. Syns., *Cirsium tuberosum* and *Serratula spicata*. Andr. Rep. t. 401.
— *montana*. 1-1½. Leaves broader. Syn., *L. spicata* of Swt. Fl. Gard. t. 49.
— *squarrosa*. 3. Purple. July. 1732.
— *tenuifolia*. 1½. Purple. September. Carolina. 1820.
— *turbidata*. 2. Purple. September. 1823.

Libertia. (Named after M. A. Libert, a Belgian lady and botanist. Nat. ord., *Iridææ*; Tribe, *Sisyrinchieæ*. Allied to the Peacock Iris.)

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. cærulea*. Pale blue. Chili. 1873. Gff. 759.
— *formosa*. 1½. May. Chili. 1831. B. R. t. 1630.
— *grandiflora*. 1½. April. New Zealand. 1822.
— *major*. 3. Flowers larger. New Zealand. 1870.
— *izoides*. 1. White. New Zealand. 1865. Hardy. Ref. Bot. t. 165.
— *paniculata*. 1½. April. S. Australia. 1823. B. M. t. 6263.
— *pulchella*. 1. April. S.E. Australia and New Zealand. 1823.
— *tricolor*. White; leaves coloured yellow and red. New Zealand. Syn., *Sisyrinchium versicolor*.

Libocedrus. (From *libanos*, incense, and *cedrus*, the cedar; the wood

being fragrant and like the cedar. Nat. ord., *Coniferae*; Tribe, *Cupressineæ*.)

Large evergreen trees. Tolerably hardy planted in a sheltered situation, but must be protected whilst young. Light, well-drained soil.

- L. chilensis*. 60. Chili. Paxt. Gard. i. p. 47, fig. 32. Syn., *Thuja chilensis*.
— *viridis*.
— *decurrens*. 40-140. N. California and Oregon. 1853. Syn., *Thuja gigantea*.
— *Doniana*. 60. New Zealand. 1847. Syn., *Thuja Doniana*.
— *tetragona*. 100. Patagonia. G. C. 1850, p. 439. Syn., *Thuja tetragona*.

Libonia. (In honour of M. Libon. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*.) United with *Jacobinia* in the Genera Plantarum.

Stove shrub. For cultivation, see THUNBERGIA. SERICOBONIA (Ill. Hort. t. 198) is a hybrid between this genus and *Jacobinia Ghiesbreghtiana*. *L. floribunda*. Scarlet, yellow. Brazil. 1864.
— *penrhosiensis*. Crimson. 1870. Garden hybrid.

Lichtensteiniæ of Chamisso, not of Willdenow. (Named after Von Lichtenstein, a German botanist. Nat. ord., *Liliaceæ*; Tribe, *Anaguillariæ*.) See **Ornithoglossum**.

- L. lævigata*. See *Ornithoglossum glaucum*.
— *undulatum*. See *Ornithoglossum glaucum*, var. *undulatum*.

Licuala. (From the native name. Nat. ord., *Palmeæ*; Tribe, *Corypheæ*. Allied to *Corypha*.)

Stove palms, from the East Indies. Seeds in strong hotbed; rich, sandy loam. Summer temp., 60° to 80°; winter, 60°.

- L. gra'ndis*. Yellowish-green. February. New Britain. 1873. B. M. t. 6704. Syn., *Pritchardia grandis*.
— *pelata*. 6. White. Yellow. India. 1825.
— *spino'sa*. 6. White, green. Java. 1802. Mart. Palm. t. 135.
— *Veitchii*. Green, brown. December. Borneo. 1883. Syn., *Pritchardia grandis* of Veitch's Catalogue, 1886, p. 54.

Lidbeckia. (Named after E. G. Lidbeck, a Swedish botanist. Nat. ord., *Compositæ*; Tribe, *Anthemideæ*. Allied to *Chrysanthemum*.)

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 fibry loam, and a few pieces of charcoal and silver-sand. Winter temp., 40° to 45°.

- L. lobata*. 2. May. 1800. Syn., *Cotula quinqueloba*.
— *pectinata*. 2. May. 1744.

Liebigia. (Named after Liebig, the celebrated German chemist. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*. Allied to *Æschynanthus*.) See **Chirita**.

- L. speciosa*. B. M. t. 4315. See *Chirita Horsfieldii*.

Lietzia. (Named after A. Lietze, a nurseryman at Rio Janeiro. Nat. ord., *Gesneraceæ*. Allied to *Gesnera*.)

Stove perennial with a tuberous rhizome. The flowers are remarkable for their curious form and colour. Seeds, tubers, and cuttings. The latter should be put in sand, in bottom-heat, under a frame or hand-glass; the atmosphere must be kept moist and warm. Light fibrous loam, leaf-mould and sand, well mixed and well drained. Summer temp., 80° to 80°; winter, 50° to 60°.

L. braziliensis. Green, spotted with purple-brown. Brazil. 1880. G. C. 1880, xiv. p. 752.

Lieve'na. (Named in honour of *Prince Lieven*, chief of the Imperial Botanic Gardens of Russia. Nat. ord., *Bromeliaceæ*; Tribe, *Bromeliacæ*.) See **Quesnelia**.

L. princeps. Gf. t. 1024. 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.

An instrument has been invented by which small trees can be easily lifted for either transplanting, root-pruning, or the addition of fresh soil or manure. It consists of three parts, viz.—1. A massive fork with two curved tines, weighing from forty to sixty pounds. 2. A tubular lever, seven or eight feet long, fitting on the fork. 3. A combination of wood and iron to act as a fulcrum to the lever. The fork, being driven into the ground a short distance from the tree to be lifted, is worked by means of the lever and fulcrum, when the tree is raised with a compact ball of earth around its roots, while the longer rootlets are drawn from the surrounding soil, but not severed from the tree as in the ordinary operation of digging around. With this instrument trees twelve feet high can speedily be lifted.

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, unless iron be present in the soil, in which case they retain their verdure. 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 absorb oxygen, and perfect those elaborations on which their green colour depends; and the light of the moon has a like influence. 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 mucilaginous 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 glasses in his hothouses, and by having their interior whitened; for white surfaces reflect nearly all the rays of light back upon the object those surfaces inclose.

Lightfootia. (Named after the *Rev. J. Lightfoot*, a Scotch botanist. Nat. ord., *Campanulacæ*; Tribe, *Campanulacæ*. Allied to *Wahlenbergia*.)

Greenhouse blue-flowered evergreens, from the Cape of Good Hope. Cuttings of young shoots in sand, containing a little peat, under a glass; fibry loam and sandy peat; pots well drained. Winter temp., 38° to 48°.

L. Loddigesii. ♀. July, 1822. Syn., *L. tenella*.
— *oxycoctoides*. ♀. July, 1787.
— *subulata*. ♀. August, 1787.
— *tene'lla*. B. C. t. 1038. See *L. Loddigesii*.

Ligularia. (From *ligula*, a strap; referring to the florets. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*.) United with **Senecio** in the Genera Plantarum.

Hardy herbaceous perennials, with yellow flowers, and blooming in June. Seeds, divisions, and cuttings of the young shoots under a hand-light, in a shady corner; sandy loam, with a little leaf-mould.

L. altaica. Altaia. 1837.
— *caucasicola*. Caucasus. 1820.
— *Hodgsonii*. S. Yezo, N. Japan. 1863. B. M. t. 5417.
— *macrophylla*. 4. Siberia.

- L. sibirica*. Siberia. 1784.
 — *speciosa*. Siberia. 1818.
 — *thyrsoides*. Altaia. 1837.

Ligusticum. (From *Liguria*, the native country of *L. Levisticum*. Nat. ord., *Umbelliferae*.) See **Levisticum**.
L. Levisticum. See *Levisticum officinale*.

Ligustri'na. A synonym of **Syring'a**.

Ligu'strum. Privet. (From *ligulare*, to tie; referring to the use made of the flexible shoots. Nat. ord., *Oleaceae*; Tribe, *Oleinae*.)

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; *lucidum* and its variety, and *vestitum*, require a little protection in exposed places.

- L. amurense*. See *L. Ibo'ta*.
 — *angustifolium*. See *L. Massalonganum*.
 — *californicum*. See *L. ovalifolium*.
 — *compactum*. White. Himalayas. 1874. Syn., *L. longifolium*, *L. lanceifolium*, *L. oblongifolium*, and *L. Simonii*.
 — *coriaceum*. 3. White. Japan.
 — *Hookeri*. 3. White; calyx violet. Nepal. 1877.
 — *Ibo'ta*. 3. White. Japan. 1861. Syn., *L. amurense* of some gardens.
 — *insule'ense*. 3. White. 1877. Syn., *L. Stantonii* of some gardens.
 — *japonicum*. June. Japan. 1845. Paxt. Fl. Gard. ii. p. 117, fig. 196.
 — — *Aktivni*. Leaves variegated with pale yellow. Garden variety. 1886.
 — — *auréo-variegatum*. Leaves variegated with pale yellow. Japan. 1862.
 L. glabrum, *L. Kellermannii*, *L. macrophyllum*, and *L. Sieboldii* are slight varieties of this.
 — *lucidum*. 8. June. China. 1794. B. M. t. 2565. Syn., *L. magnoliaefolium* and *L. myrtifolium*.
 — — *floribundum*. 8. July. China. 1794.
 — — *magnoliaefolium*. See *L. lucidum*.
 — *Massalonganum*. 3. White. Himalayas. 1877. Syn., *L. angustifolium*.
 — *me'dium*. White. Japan. 1891.
 — *myrtifolium*. See *L. lucidum*.
 — *nepalense*. 6. White. Nepaul. 1860. Syn., *L. vestitum*.
 — — *glabrum*. 3-4. Leaves glabrous. B. M. t. 2921.
 — *ovalifolium*. 12. White. Japan. 1877. Syn., *L. californicum*.
 — — *variegatum*. Leaves golden marked. Japan. 1865.
 — *Quihou'i*. White. China. 1869. G. C. 1882, xviii. p. 277.
 — *robu'stum*. White. Himalayas. 1877.
 — *rosarinifolium*. Garden variety. 1887.
 — *sine'ense*. 18. White. China. 1858. G. C. 1858, p. 621. Syn., *L. villosum* and *L. Ibo'ta villosum*.
 — *spica'tum*. 8. June. Nepaul. 1823.
 — *Staurontii*. White. China. 1863. Syn., *L. chinense*.
 — *syringæto'rum* and *syringæfo'lium* of gardens are the same as *L. japonicum*.
 — *vesti'tum*. See *L. nepalense*.
 — *vulga're*. 10. June. Britain. Evergreen. Common Privet.
 — — *angustifolium*. 8. June. Britain.

- L. vulga're buxifo'lium*. Leaves broad.
 — — *chlorocarpum*. 8. June. Britain.
 — — *leucocarpum*. 8. June. Britain.
 — — *pendulum*. Branches weeping.
 — — *sempervirens*. 8. June. Italy.
 — — *variegatum*. 8. June. Britain.
 — — *xanthocarpum*. 8. August. Italy.

Lilac. *Syringa*.

Liliorhi'za. See **Fritillaria**.

Lil'ium. The Lily. (From the Celtic, *li*, white. Nat. ord., *Liliaceae*; Tribe, *Tulipeae*.)

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 fibry peat, and the latter are generally the better for a little loose fern or other covering in winter. They require shelter more than anything else, and should, where possible, be planted among Azaleas, Rhododendrons, etc.

GREENHOUSE BULBS.

- L. atro-sanguineum*. 2. Dark red. July. Japan. 1835.
 — — *maculatum*. Orange, red. August. Japan.
 — *coruscans*. 2. Scarlet. August.
 — *eastmum*. 4. White. July. Japan. 1834. Fl. Ser. t. 283-4.
 — *gigantum*. 10. White. July. Himalaya. 1852. B. M. t. 4673.
 — *lanceifolium*. White. June. Nepaul. 1824.
 — — *roseum*. White, pink. June. Nepaul. Paxt. Mag. v. p. 267.
 — *Lo'wii*. White with purple blotches. N. India. 1891. Stove.
 — *neilgherrense*. White. India. 1862. Wight Ic. t. 2031-2.
 — *nepalense*. 2-3. Yellowish, purplish. Nepaul. 1853.
 — *philippinense*. 1-3. White. August. Philippine Isles. 1873.
 — *roseum*. B. M. t. 4725. See *Fritillaria macrophylla*.
 — *speciosum*. 2. Orange. August. Japan. 1833. B. R. t. 2000. Andr. Rep. t. 586.
 — — *album*. 3. White. July. Japan. 1833. B. M. t. 3785.
 — — *Kampferi*. 3. Rose, purple. July. Japan. 1833.
 — *punctatum*. 3. White-spotted. July. Japan. 1835.
 — — *rubrum*. 3. Rose. July. Japan. 1833.
 — *testaceum*. 3. Pale orange, red-spotted. June. Japan. 1841. B. R. 1843, t. 11.
 — *Thompsonianum*. B. R. 1845, t. 1. See *Fritillaria macrophylla*.
 — *Thunbergianum*. 1½. Orange, scarlet. July. Japan. 1835. B. R. 1839, t. 38.
 — *vohlbile*. Crimson. July. 1830.
 — *Wallichianum*. 5. Greenish-white. October. Nepaul. 1850. B. M. t. 4561.
 — — *superbum*. Pale yellow, rose-purple. Himalayas. 1839.

HARDY BULBS.

- L. alpinum*. See *L. parvum*.
 — *andinum*. 4. Scarlet. July. N. Amer. 1819.
 — *aurantiacum*. Orange. July. Japan. 1835. Paxt. Mag. vi. p. 127.
 — *aurantium*. 3. Dark orange. June. Italy. 1835.
 — — *florople'no*. 3. Dark orange. June.
 — — *minus*. 2. Orange. June.
 — — *variegatum*. 2. Dark orange. June.
 — *auratum*. White, purple, yellow. Japan. 1862. A truly grand flower. B. M. t. 5338. Slight varieties are:—*macranthum*, *pictum* and *rubro-vittatum*.

- L. auratum cruentum*. White, crimson. Japan. 1870.
- *platyphyllum*. Leaves broader, flowers larger. August. Japan. 1880.
- *rubrum*. Flowers with a red band down the centre of each petal. Japan. 1867.
- *speciosum*. White, red, yellow. Japan. 1875.
- *tricolor*. 1½. White, yellow-dotted. Japan. 1880.
- *virginale*. Flowers unspotted. August. Japan. 1880.
- *Wittei*. White, yellow, unspotted. Japan. 1887. Syn., *L. Wittei*.
- *avenculum*. 3. Orange, black-spotted. Japan. 1865. There are two forms of this, one with scented orange flowers, the other with scentless scarlet flowers. Gf. t. 485.
- *Batemanii*. 3. Apricot colour. 1879.
- *Botanidieri*. Purple-red, with blood-red spots inside. California. 1889.
- *Brownii*. 1-3. White, dull purple outside. China. 1804. Fl. Ser. t. 47. Syns., *L. odorum* and *L. japonicum*, var. *Colchesteri*.
- *bulbiferum*. 2-4. Orange-red. July. Europe. 1820. B. M. t. 36 and t. 1018. Syn., *L. latifolium*.
- *Buschianaum*. 1. Orange. June. Siberia. 1829. B. C. t. 1628.
- *callosum*. 2-3. Red. July. Japan. 1859. Fl. Ser. t. 230.
- *kamtschateense*. See *Fritillaria kamtschakensis*.
- *canadense*. 4. Light orange. July. N. Amer. 1829. B. M. t. 800.
- *rubro-flavum*. Orange, red. N. Amer. 1875.
- *rubrum*. 4. Orange. July. N. Amer. 1829.
- *canadense*. 3. White. June. Levant. 1596. B. M. t. 278.
- *punctatum*. 4. White, purple. June. Nepal. 1835.
- *spicataum*. 4. White. June.
- *striatum*. 4. White. June.
- *variegatum*. 4. White. June.
- *carniaticum*. 2-3. Orange-red. Carniola.
- *carolinianaum*. 2. Orange. July. N. Amer. 1819. B. M. t. 2280.
- *Catesbaei*. 1. Scarlet. July. China. 1805. B. M. t. 259.
- *chalcidonicum*. 4. Scarlet. July. Levant. 1796. B. M. t. 30.
- *colchicum*. 2. White, brown. 1880. Fl. Ser. t. 507-9.
- *columbiaum*. 2-3. Orange-yellow, spotted with black-red. Oregon, British Columbia. 1872.
- *concolor*. 2. Red. July. China. 1806. B. M. t. 1165.
- *luteum*. Yellow, spotted with purple-red. China, Japan. 1877.
- *cordifolium*. 3-5. White, yellow, purple. Japan. 1853. Fl. Ser. t. 215.
- *croceum*. 3. Yellow. July. 1595. B. C. t. 784.
- *dalmaticum*. Garden. 1883. Jan. 13. See *L. Martagon*, var. *dalmaticum*.
- *davuricum*. 2-3. Scarlet-red. Siberia. 1745. Syn., *L. spectabile*.
- *elegans*. 3-2½. Flowers varying from pale orange to dark reddish-crimson, spotted. Japan. 1835. Syn., *L. Thunbergianum*.
- *Batemanii*. Dark yellow. 1889.
- *bicolor*. 1. Orange-red, spots purplish-black. Japan. 1870.
- *citriinum*. 2. Orange-yellow, unspotted. Japan. 1868.
- *fo're-pleno* is a double-flowered variety. Japan. 1870.
- L. elegans Walla'cei*. Spotted with brown. 1889.
- *Elisabethae*. See *L. japonicum*.
- *excelsum*. Striped. July. Japan.
- *eximium*. Fl. Ser. t. 283-4. See *L. longiflorum*, var. *eximium*.
- *formosum*. Orange-red. Japan. 1866.
- *Fortunei*. Orange, purple. Japan. 1862.
- *fulgens staminosum*. Crimson. Japan. 1864. Ill. Hort. 1864, p. 422.
- *glabrum*. 4. Orange. June. 1596.
- *Gra'yi*. Reddish-orange. Alleghany Mountains. 1888. G. and F. 1888, i. p. 19, fig. 4.
- *haematochro'mum*. Dark blood-red. Japan. 1867.
- *Hanso'ni*. 3-4. Orange, black-spotted. Japan. 1865. Syn., *L. maculatum*.
- *Harri'sii*. See *L. longiflorum*, var. *eximium*.
- *Henryi*. 2-3. Yellow, dotted with reddish-brown. Ichang, China. 1888.
- *Hookeri*. See *Fritillaria Hookeri*.
- *Humboldtii*. 4. Orange, claret-spotted. California. 1872. Syn., *L. Bloomerianum*.
- *ocellatum*. Orange, with crimson, black-centred spots. 1876. Syn., *L. Bloomerianum*, var. *ocellatum*.
- *japonicum*. 1-3. White or pink. Japan. 1873. Very fine. B. M. t. 1591. Syns., *L. Elisabethae* and *L. Krameri*.
- *latifolium*. See *L. bulbiferum*.
- *Leichli'ni*. Yellow, purple-black spotted. Japan. 1867.
- *ma'jus*. Yellow, purple-brown spotted. Japan. 1872.
- *Loddigesianaum*. 4. Yellow. Caucasus. 1842. Fl. Ser. t. 507-9.
- *longiflorum*. 1-3. White. Japan, China. 1819. B. R. t. 560.
- *albo-marginatum*. Leaves bordered with white. Japan. 1870.
- *chloraster*. Pollen reddish-brown. July. Central China. 1891.
- *eximium*. A larger and finer variety, Japan. 1834. Syns., *L. eximium* and *L. Harrisii*.
- *formosanaum*. 2-3. White, red-keeled outside. Formosa. 1880.
- *longifolium*. White. May. China. 1820.
- *lucidum*. 2-3. Translucent orange, spotted dark purple. Oregon. 1878.
- *Mangle'sii*. Garden hybrid.
- *martianum*. Orange-red, black-spotted. California. 1878.
- *Martagon*. 3. Purple. July. Germany. 1596. B. M. t. 893 and t. 1634. This species has been hybridized with *L. Hansoni*.
- *albo-pleno*. 3. White. July. Germany.
- *album*. White. 1889.
- *atrosanguineum*. Dark purple. Europe. 1889.
- *dalmaticum*. Blood-purple. Dalmatia. 1872.
- *dorsipunctatum*. 3. Purple. June.
- *elatium*. 3. Purple. June.
- *ocella're*. 3. Lilac. June.
- *palidum*. 3. Lilac. June.
- *perpurpureum*. 3. Dark purple. June.
- *petiolaris*. 3. Purple. June.
- *pubescens*. 3. Orange. June. Germany. 1596.
- *purpureum*. 3. Purple. June.
- *sepalis-albis*. 2½. White. July. Germany.
- *sepalis-plurimis*. 3. Purple. July. Gardens.
- *Maximowiczii*. 2 to 3. Orange-scarlet, black-spotted. Japan. 1869.
- *pseudotigrinum*. Orange-red, spots dark brown. China. 1857. Syns., *L. pseudotigrinum*, *L. tigrinum*, var. *Lishmanni*, and *L. jucundum*.

- L. Maximowiczii tigrinum*. Orange-red, spots blackish-purple. China or Japan. 1871.
- *medeoloides*. 1 to 2. Red, black-spotted. Like *L. avenaceum*, but with erect flowers. Japan. 1878.
- *monadelphum*. 2. Yellow. June. Caucasus. 1820. B. M. t. 1405.
- *nepalense*. 3. White. July. Nepal. 1825.
- *nitidum*. Dark purple, Kamtschatka. 1865.
- *nitidum*. 2. Yellow, spots red-brown. June. California. 1880.
- *oxypetalum*. 1 to 1½. Mauve-purple, with dark purple spots. N.W. Himalayas. 1852. Syn., *Fritillaria oxypetalata*.
- *pardalinum*. Orange-yellow, crimson. California. 1875.
- *californicum*. Tawny, blood-red. California. 1875.
- *lutium*. Yellow with brown spots. 1889.
- *parvulum*. A hybrid between *L. pardalinum* and *L. parvum*.
- *Wa'rei*. Lemon to orange-yellow, without brown spots. Lower California. 1886.
- *Parkmanii*, is a very fine hybrid between *L. spectosum* and *L. auratum*, having the colours of the former, united with the form and grandeur of the flower of the latter.
- *Pa'ryi*. 2½. Yellow. California. 1879.
- *parviflorum*. Orange, brown-spotted. British Columbia. 1874.
- *parvum*. Orange, red-brown spotted. June. California. 1872. Syn., *L. alpinum* and *canadense*, var. *parvum*.
- *penduliflorum*. 1. Copper-coloured. June. N. Amer. 1820. Red. Lil. t. 105 and t. 301.
- *peregrinum*. 4. White. June. Cape of Good Hope. 1824. Swt. Fl. Gard. ser. 2, t. 367.
- *philadelphicum*. 5. Scarlet. July. N. Amer. 1757. B. M. t. 519.
- *polyphyllum*. 2 to 4. Whitish-yellow, purple-spotted. Himalaya. 1873.
- *pompomum*. 2. Red. May. Siberia. 1659. B. M. t. 798.
- *fo're-ple'no*. 3. Red. June.
- *pulchellum*. Scarlet. Dahuria. 1829. Gf. t. 284.
- *pu'milum*. 1. Scarlet. July. Dahuria. 1816. Red. Lil. t. 378.
- *pyrenaicum*. 2. Dark orange. July. Pyrenees. 1596. Red. Lil. t. 145.
- *fo're-ple'no*. 2. Yellow. July.
- *Rae'zlii*. Orange-red, spots blackish-purple. Rocky Mountains, 1871.
- *rubescens*. See *L. Washingtonianum*, var. *purpureum*.
- *sanguineum*. Orange, red. July. B. R. 1847, t. 50.
- *sibiricum*. 2. Yellow. July. Siberia.
- *si'nicum*. 1. Scarlet. July. China. 1824.
- *speciosum*. 1 to 3. White. Summer. Japan. 1832.
- *gloriosoides*. White, brownish-crimson. August. Japan. 1880.
- *Kampferi*. Rosy, purple. Japan. 1868.
- *spectabile*. 2. Light orange. June. Dahuria. 1754. Swt. Fl. Gard. t. 75.
- *superbum*. 3 to 6. Yellow, orange-red, with blood-red spots, and green basal star. E. United States. Requires a wet swampy soil.
- *tenuiflorum*. 2. Scarlet. June. Siberia. 1820. B. M. t. 3140.
- *tigrinum*. 6. Orange. July. China. 1804. B. M. t. 1287.
- *fo're-ple'no*. Japan. 1869.
- *splendens*. The plant and flowers larger. Japan. 1870.
- L. Washingtonianum*. 3 to 6. White, lilac. California. 1872.
- *purpureum*. Purplish, black-spotted. California. 1874. Syns., *L. purpureum* and *L. rubescens*.
- *Wilsoni*. 3. Orange, golden, dark-spotted. Japan. 1868. Syn., *L. Thunbergianum pardinum*.
- *Wittei*. See *L. auratum*, var. *Wittei*.

Lilium Candidum. 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. A fungus (*Ovularia elliptica*) also attacks this plant.

Lilium Martagon. Martagon, or Turk's cap Lily. The propagation of all the varieties of this species is the same as described above for *L. candidum*. The soil, however, should be liberally mixed with sand. Some species, such as *L. coloratum* and *L. superbum*, require a considerable quantity of sandy peat mixing amongst the soil.

Lilium tigrinum, Tiger Lily; and **L. bulbiferum** or **aurantium**, 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. candidum*, 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.

Lilium speciosum and its varieties. This is the finest of all the genus. The petals turn back, like those of the *L. martagon*. It throws out roots above the bulbs like *L. tigrinum*, but does not produce incipient bulbs in the axils of the leaves, like the latter species, and must, therefore, be propagated like *L. candidum*, by offsets. This fine species, although quite hardy, is well 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 supply 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. candidum*, with the addition of a covering of dry fern fronds over the bulbs in winter.

Lily. *Lilium.*

Lily-hyacinth. *Scilla lilio-hyacinthus.*

Lily-of-the-valley. (*Convallaria majalis.*) We know gardens 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' Journ.*

Lily-pink. *Aphyllanthes*.

Lily-thorn. *Catesbaea*.

Limato'des. (Not explained. Nat. ord., *Orchidæ*; Tribe, *Epidendrææ*.) The majority of the species included in this genus are referred to **Phaius**; the three in cultivation, however, are included in **Calanthe**.

L. gracilis. See *Calanthe gracilis*.

— *labrosa.* Yellowish-brown, purple. Moulmein. 1879. A synonym of *Calanthe labrosa*.

— *rosea.* B. M. t. 5312. See *Calanthe rosea*.

Lime. *Citrus lime'tta*.

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 carbonic acid evolved by 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. *Tilia*.

Lime-looper Moth. *Geometra*.

Lime-water. To forty gallons of clear 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, etc., of double the length.

Limna'nthemum. (From *limne*, a marsh or pool, and *anthemon*, a blossom; from the situations in which they grow. Nat. ord., *Gentianaceæ*; Tribe, *Menyantheæ*.)

White or yellow-flowered aquatics or marsh-plants. For cultivation, see **VILLARSIA**, to which they are allied.

L. Humboldtiana. White, yellow. Summer. Tropical America. 1856. Stove.

— *nymphaeoides*. Yellow. Summer. Europe. Hardy. Eng. Bot. ed. 3, t. 921. Syn., *Menyanthes indica*. B. M. t. 658.

Limna'nthes. (From *limne*, a marsh, and *anthos*, a flower. Nat. ord., *Geraniaceæ*; Tribe, *Limnantheæ*.)

Hardy trailing annuals, from California. Seeds in April, in a moist and shady situation.

L. alba. ½. White. July. 1843.

— *Douglasii*. 1. Yellow, white. July. 1833. B. M. t. 3554.

— *rosea*. ½. Pink. July. 1833. Journ. Hort. Soc. iv. p. 78.

Limno'charis. (From *limne*, a marsh, and *chairo*, to delight in; water-plants. Nat. ord., *Alismaceæ*; Tribe, *Butomeæ*.)

Stove, perennial, yellow-flowered aquatics, from Brazil. Divisions, runners, and seeds; tube or cisterns, in a stove, or the shallow part of an aquarium. Summer temp., 60° to 90° winter, 55° to 60°.

L. flava. 1½. July. 1822. Syn., *L. Plumieri*.

— *Humboldtii*. 1½. May. 1831. B. R. t. 1640

Now known as *Hydrocoleis Commersonii* — *Plumieri*. B. M. t. 2525. See *L. flava*.

Limodo'rum. (Several derivations, more or less unsatisfactory, have been suggested for this name. Nat. ord., *Orchideæ*; Tribe, *Neottieæ*.)

- L. al'tum.* B. M. t. 930. Jacq. Ic. t. 602. See *Bletia verecunda*.
 — *callo'sum.* See *Phaius callosus*.
 — *div'rnum.* Jac. Ic. t. 603. See *Cymbidium diurnum*.
 — *ebu'rneum.* See *Angræcum eburneum*.
 — *falca'tum.* B. M. t. 2097. See *Angræcum falcatum*.
 — *macula'tum.* B. C. t. 496. See *Eulophia maculata*.
 — *planta'gi'neum.* See *Cyrtopera plantaginea*.
 — *Tankervi'liæ.* Ait. H. Kew, ed. 1. iii. t. 12. See *Phaius grandifolius*.
 — *tubero'sum.* B. M. t. 116. See *Calopogon pulchellus*.

Limo'nia. (From *limoun*, the Arabic name of the citron. Nat. ord., *Rutaceæ*; Tribe, *Aurantieæ*.)

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 cowdung, and a few pieces of charcoal. For *crenula'ta*, winter temp., 35° to 45°; summer, 60° to 75°; the others may succeed against a wall, in the south of England, protected in winter; and in other districts they require a greenhouse.

- L. acid'i'simo.* 4. E. Indies. 1800. Syn., *L. crenulata*.
 — *austra'lis.* See *Citrus australis*.
 — *citri'folia.* 4. China. 1800. Syn., *Glycosmis pentaphylla*, var. *chinensis*.
 — *crenula'ta.* See *L. acidisima*.
 — *parvifl'o'ra.* 20. White. June. E. Indies. 1790. B. M. t. 2416. Syn., *Glycosmis pentaphylla*.
 — *sca'ndens.* 6. China. 1800. Climber.

Limonia'strum. (From *leimon*, a meadow, and *astron*, a star. Nat. ord., *Plumbagineæ*.)

Half-hardy sub-shrub. For culture, see **STATICE**.

- L. monope'tala.* 3. Blue. July to September. Sicily. 1731. Syn., *Statice monopetalata*. B. R. 1841, t. 54.
 — — *denuda'ta.* Flowers smaller, pale blue. July. Sicily. 1640. Syn., *Statice monopetalata*, var. *denudata*. B. R. 1842, t. 59.

Limo'nium monophyllum. A synonym of *Atalantia monophylla*.

Limose'lla. Mudwort. (From *limus*, mud; where it grows. Nat. ord., *Scrophulariaceæ*; Tribe, *Gratiolææ*.)

Hardy annual. Seeds in a marsh, or near a pond or rivulet.

- L. aqua'tica.* 1. Fleah. August. Britain. Eng. Bot. ed. 3, t. 968.

Lina'nthus. (From *linon*, flax, and *anthos*, a flower. Nat. ord., *Polemoniacææ*.) Now referred to **Gilia**.

Hardy annual. Seeds in the open border, in spring.

- L. dichotomus.* 1½. Pink. California. 1838. A synonym of *Gilia dichotoma*.

Lina'ria. Toadflax. (From *linon*, flax; referring to the resemblance of the leaves. Nat. ord., *Scrophulariaceæ*; Tribe, *Antirrhineæ*. 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 rock-work plants.

- HALF-HARDY HERBACEOUS, ETC.**
L. circina'ta. 1. Yellow. June. N. Africa. 1833. Evergreen.
 — *fruticans.* 1. Yellow. June. Cape of Good Hope. 1822. Evergreen.
 — *sagitta'ta.* Yellow. Morocco. 1874.
 — *scopa'ria.* 1. Yellow. June. Teneriffe. 1816. Evergreen.
 — *tricornitho'phora.* 1. Purple. August. Portugal. 1710. B. C. 1010.
 — *villo'sa.* 1. Blue. July. Spain. 1786.

- HARDY EVERGREENS.**
L. alpi'na. 1. Blue. July. Austria. 1750. B. C. t. 415.
 — *acuti'loba.* 1. Purple. August. Siberia. 1825.
 — *aquiri'toba.* 1. Purple. June. Sardinia. 1829. B. M. t. 2941.
 — *cymbala'ria.* 1. Violet. May. England. Eng. Bot. ed. 3, t. 955.
 — — *a'lba.* 1. White. June. Gardens.
 — — *ma'jor.* Violet. Larger than the type.
 — — *variega'ta.* 1. Violet. June. Gardens.
 — *hepatica'folia.* 1. Lilac-purple. Summer. Corsica.
 — *origani'folia.* 1. Blue. August. South Europe. 1785.
 — *pa'llida.* Yellow.
 — *pil'osa.* 1. Purple. August. Pyrenees. 1800.
 — *pube'scens.* 1. Pale. August. Naples. 1820.
 — *saxa'tilis.* 1. Yellow. August. Spain. 1819.

- HARDY HERBACEOUS.**
L. biparti'ta. 1. Purple. August. Barbary. 1815. Swt. Fl. Gard. t. 30.
 — *dalma'tica.* 1½. Yellow. June. Levant. 1731. Evergreen. B. R. t. 1683.
 — *galio'des.* 2. Blue. July. South Europe.
 — *genista'folia.* 2. Yellow. July. Austria. 1704. B. M. t. 2183.
 — *heterophy'lla.* 1½. Yellow, brown. July. N. Africa. 1825.
 — *hi'ans.* 1. Yellow. July. South Europe. 1818.
 — *linifl'o'ria.* 1. Yellow. July. Caucasus. 1820.
 — *macrou'ra.* 1. Yellow. August. Crimea. 1822.
 — *margin'a'ta.* Yellowish. August. Barbary. 1820.
 — *monspessula'na.* 3. Blue. July. France.
 — — *a'lba.* 3. White. July.
 — *pro'cera.* 4. Pale blue. July.
 — *purpu'rea.* 1. Purple. August. South Europe. 1648.
 — *silenifl'o'ria.* 3. Yellow. July. Armenia. 1819.
 — *vulgaris peto'ria.* 1. Yellow. August. Britain.

- HARDY ANNUALS.**
L. ægyptia'ca. 1½. Yellow, purple. July. Egypt. 1771.
 — *alsinifl'o'ria.* 1. Blue. June. Corsica. 1824.
 — *amethy'stina.* 1. Blue, yellow. July. Spain. 1728.
 — *arena'ria.* 1. Yellow. July. South Europe. 1823.
 — *arve'nsis.* 1. Purple, blue. July. South Europe.
 — *bipuncta'ta.* 1. Yellow. July. Spain. 1749.
 — *canade'nsis.* 1. Violet. July. N. Amer. 1812. B. M. t. 3473.

- L. caucasica*. $\frac{1}{2}$. Yellow. July. Caucasus. 1818.
- chalepe'nsis. 1. White. June. Levant. 1680.
- cirrho'sa. $\frac{1}{2}$. Pale blue. July. Egypt. 1771.
- creta'cea. 1. July. Siberia. 1827.
- dealba'ta. $\frac{1}{2}$. Yellow. August. Portugal. 1820.
- delphinioi'des. $1\frac{1}{2}$. Blue. August. Russia. 1838. Kn. and West. t. 115.
- diffu'sa. $\frac{1}{2}$. July. Spain. 1826.
- elatinoi'des. $\frac{1}{2}$. Yellow. August. South Europe. 1821.
- fa'va. $\frac{1}{2}$. Yellow. July. N. Africa. 1820.
- glanduli'fera. Purple. May. 1839.
- hi'rt'a. 1. Purple. August. Spain. 1750.
- iani'gera. $\frac{1}{2}$. Yellow. July. Portugal. 1818.
- linori'sea purpura'ea. Purple, yellow. Morocco? 1877.
- Lose'lii. 1. Blue. July. Tauria. 1823.
- marocca'na. $\frac{3}{4}$. Violet-purple. Morocco. 1872.
- multicaus'lis. $1\frac{1}{2}$. White. June. Levant. 1728.
- origani'folia. Blue-violet. Summer. S.W. Europe. 1785.
- — crassifo'lia. $\frac{1}{2}$. Purple, yellow. May. S. Europe. 1868.
- Pelissieri'na. 1. Violet. August. South Europe. 1640.
- purpura'scens. $1\frac{1}{2}$. Purple. June. South Europe. 1829. Biennial.
- pyrena'ica. 1. Yellow. June. Pyrenees. 1821.
- reticula'ta. $1\frac{1}{2}$. Purple. June. Algiers. 1788. Lem. Jard. Fl. t. 260.
- rubri'folia. 1. Blue. June. South France. 1826.
- si'mplex. 1. Purple. July. South Europe. 1816.
- spa'rtea. 1. Yellow. August. Spain. 1772.
- stri'cta. 1. Yellow. May. Catania, Sicily. 1884.
- thymi'folia. $\frac{1}{2}$. Blue. June. South Europe. 1818.
- triphy'lla. 1. Yellow, purple. August. Sicily. 1596.
- tri'stis. 1. Brown. July. Spain. 1727.
- lu'tea. 1. Yellow. August. Gardens.
- veno'sa. Yellow, brown. May. India. 1839.
- versicolor. 1. Purple, yellow. August. France. 1777.
- virga'ta. $\frac{1}{2}$. Blue. June. N. Africa. 1817.
- visco'sa. 1. Brown. July. Spain. 1786.

Linco'nia. (A commemorative name. Nat. ord., *Bruniaceæ*. Allied to *Brunia*.)

Greenhouse evergreen shrubs, with white flowers, from Cape of Good Hope. For culture, see DIOSMA.

- L. alopecuroi'dea*. 2. May. 1816.
- cuspid'a'ta. 2. May. 1825.
- thymi'folia. 2. May. 1825.

Lindelofia. (After *Frideric von Lindelof*, of Darmstadt. Nat. ord., *Boraginææ*.)

Hardy perennial herbs. Seeds, or division of roots. Ordinary garden-soil.

- L. longifo'lia*. 2. Bright blue. 1888.
- specta'bilis. $1-1\frac{1}{2}$. Purple. Summer. Kashmir. 1840. Syn., *Cynoglossum longistromum*, B. R. 1840, t. 50.

Linden. *Tilia europæa*.

Linde'nia. (In honour of *M. Linden*, the eminent Belgian horticulturist. Nat. ord., *Rubiaceæ*; Tribe, *Rondeletieæ*.)

Stove evergreen shrubs. Cuttings of ripeshoots in sand under a bell-glass, in bottom-heat. Loam, sand, and peat. Summer temp., 60° to 85°; winter, 50° to 60°.

- L. riva'lis*. 3. White. August. Guatemala. 1856. B. M. t. 5258.
- vitt'e'nsis. New Caledonia.

Lindle'ya. (Named after *Professor Lindley*. Nat. ord., *Rosaceæ*; Tribe, *Quillajææ*. 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 *Ternstro'miaceæ* and *Samydaceæ*.

- L. mespiloi'des*. 12. White. July. Oaxaca. 1843. B. R. 1844, t. 27.

Lindne'ria. (After *F. Wilhelm Lindner*, once Professor of Philosophy at Leipzig. Nat. ord., *Liliaceæ*.) See **Pseudogaltonia**.

- L. fibrillo'sa*. See *Pseudogaltonia Pechnelii*.

Lindsa'ya. (Named after *M. Lindsay*, an English botanist. Nat. ord., *Filices*.) Sometimes spelt **Lindsæa**. Closely allied to *Adiantum*.

Ferns, with brown spores. For culture, see FERNs.

STOVE.

- L. adiantoi'des*. July. Isle of Luzon. 1840. Hook. Sp. Fil. t. 61.
- concinna. July. Isle of Luzon. 1842. Hook. Sp. Fil. t. 61.
- crenata. British Guiana. 1863. Stove.
- cultra'tra. July. Isle of Luzon. 1840.
- decomposita. July. Malacca.
- elegans. July. E. Ind. 1840. Ic. Pl. t. 98.
- falca'ta. $\frac{3}{4}$. May. Trinidad. 1819.
- guianensis. May. Guiana. 1845.
- Lo'vii. See *Polybotrya Lovii*.
- oblongifo'lia. July. E. Ind. Hook. Sp. Fil. t. 61.
- renifo'rmis. July. Trinidad. 1826. Linn. Trans. iii. t. 7.
- ri'gida. 1. July. Malacca. 1839.
- stri'cta. July. W. Indies. 1839.
- te'nera. Malacca. Linn. Trans. iii. t. 10.
- trapezifo'rmis. 1. May. S. Amer. 1819. Linn. Trans. iii. t. 9.

GREENHOUSE.

- L. lineari's*. $\frac{3}{4}$. May. N. Holland. 1820.
- me'dia. 1. May. N. Holland. 1823.
- microphy'lla. $\frac{3}{4}$. May. N. Holland. 1820. Hook. Ic. Fil. t. 194.

Ling, or Ling-heather. *Calluna vulgaris*.

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., *Caprifoliaceæ*; Tribe, *Lonicereæ*. 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 in shade.
L. borea'lis. $\frac{1}{2}$. Flesh. June. Scotland. Eng. Bot. ed. 3. t. 644.

Linosyris. (Derivation not stated. Nat. ord., *Compositæ*; Tribe, *Asteroidæ*.) A synonym of **Aster**.

L. villosa. See *Felicia villosa*.

— *vulgaris.* See *Aster Linosyris*.

Linum. Flax. (From *linon*, flax. Nat. ord., *Linaceæ*.)

Annals 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 *arborescens*, *salsoloides*, *tauricum*, etc., will thrive in the border, in the South of England, with but little protection.

GREENHOUSE EVERGREENS.

- L. æthiopicum.* Yellow. June. Cape of Good Hope. 1771.
— *africanum.* 1. Yellow. June. Cape of Good Hope. 1771. Jacq. Ic. t. 353.
— *Chamissoi.* Flor. Mag. t. 214. See *L. Macraei*.
— *Cumingii.* 3. White. July. Chili. 1830. B. C. t. 1996. Perhaps synonymous with *L. Macraei*.
— *Macraei.* Orange. Chili. 1864. Syn., *L. Chamissonis*.
— *quadrifolium.* 2. Yellow. May. Cape of Good Hope. 1787.
— *Simsii.* 1. Yellow. Crete. 1788. Syn., *L. arboreum* of B. M. t. 234.
— *suffruticosum.* 1. Pink. August. Spain. 1759.
— *trigynum.* B. M. t. 1100. See *Reinwardtia trigyna*.

HARDY ANNUALS AND BIENNIALS.

- L. arborescens.* See *L. gallicum*.
— *Berendieri.* See *L. Berlandieri*.
— *Berlandieri.* Yellow, orange. September. Bijar. 1835. B. M. t. 8480. Half-hardy. Syn., *L. Berendieri*.
— *bicolor.* See *L. setaceum*, var. *bicolor*.
— *grandiflorum.* 1. Crimson. June. North Africa. 1820. Paxt. Fl. Gard. i, p. 72, fig. 13. Annual.
— *rigidum.* 1. Pale yellow. July. Missouri. 1807.
— *setaceum bicolor.* 14. Yellow, blue. June. Morocco. 1820. Syn., *L. bicolor*.
— *strictum.* 1. Yellow. June. South Europe. 1759. Biennial.
— *usitatissimum.* 14. Blue. June. Britain.

HARDY EVERGREENS.

- L. arboreum.* 2. Yellow. May. Candia. 1738. *L. arboreum* of B. M. t. 234 is *L. Simsii*.
— *salsoloides.* 1. Pink. June. South Europe. 1810.
— *tauricum.* 14. Yellow. June. Tauria. 1818.

HARDY HERBACEOUS.

- L. agreste.* See *L. angustifolium*.
— *alpinum.* Jacq. Vind. t. 229. See *L. perenne*, var. *alpinum*.
— — *album.* White. July. Gardens.
— *alticum.* 1. Blue. July. Altai. 1829.
— *anglicum.* See *L. perenne*, var. *anglicum*.
— *album.* 2. White. June. Gardens.
— *angustifolium.* 1. Purple. July. England. Eng. Bot. ed. 3, t. 291. Syn., *L. agreste*, *L. diffusum* and *L. marginatum*.
— *ascryfiolum.* 1. White. June. Portugal. 1800.
— *austriacum.* See *L. perenne*, var. *austriacum*.
— *Babingtonii.* 4. Purple. July. New South Wales? 1837. Syn., *Chiocecca tenuifolia*.

- L. campanulatum.* 4. Yellow. July. Europe. 1795.
— *capitatum.* 1. Yellow. June. Austria. 1816.
— *dahuricum.* 1. Yellow. June. Dahuria. 1816.
— *decumbens.* 14. Red. June. N. Africa. 1817.
— *diffusum.* See *L. angustifolium*.
— *flavum.* 3. Yellow. July. Austria. 1793.
— *hirsutum.* 14. Blue. July. Austria. 1759.
— *hypericifolium.* 14. Purple. June. Caucasus. 1807.
— *Lewisia.* See *L. perenne*, var. *Lewisia*.
— *marginatum.* See *L. angustifolium*.
— *maritimum.* 2. Yellow. July. South Europe. 1596.
— *mexicanum.* June. Mexico. 1838. Half-hardy. B. R. t. 1326.
— *monogynum.* 2. White. July. New Zealand. 1822. B. M. t. 3574.
— *montanum.* 1. Blue. June. Switzerland. 1817. See *L. perenne*, var. *montanum*.
— *narbonense.* 2. Blue. May. South France. 1759.
— — *reflexum.* 14. Blue. July. South Europe. 1777. Syn., *L. reflexum*.
— *nerosum.* 14. Blue. June. Hungary. 1822.
— *nodiflorum.* 4. White. May. Italy. 1759.
— *pallidum.* See *L. perenne*, var. *pallidum*.
— *perenne.* 1-14. Pale blue. June. Britain. Eng. Bot. ed. 3, t. 290.
— — *alpinum.* 4. Blue. July. Austria. 1739. Syn., *L. alpinum*.
— — *anglicum.* 2. Blue. June. England. Syn., *L. anglicum*.
— — *austriacum.* 1. Blue. June. Austria. 1775. Syn., *L. austriacum* and *L. squamulosum*.
— — *Lewisia.* 3. Blue. June. N. America. 1820. Syn., *L. Lewisia*.
— — *montanum.* 1. Blue. June. Switzerland. 1817. Syn., *L. montanum*.
— — *pallidum.* 1. Lilac. January. Siberia. 1831. Syn., *L. pallidum*.
— — *sibiricum.* 2. Blue. June. Siberia. 1775. Syn., *L. sibiricum*.
— *pubescens Sibthorpii.* 1. Pink, blue, yellow. Cilicia. 1877.
— *reflexum.* See *L. narbonense*, var. *reflexum*.
— *sibiricum.* See *L. perenne*, var. *sibiricum*.
— *squamulosum.* See *L. perenne*, var. *austriacum*.
— *tenuiflorum.* 14. Pink. June. Europe. 1759.
— *viscosum.* 2. Purple. July. 1818.
— *virginicum.* 1. Yellow. July. N. Amer. 1807.

Lion's Ear. *Leontotis*.

Lion's Foot. *Leontopodium*.

Lion's Tail. *Leontotis leonurus*.

Liparia. (From *liparos*, unctuous; referring to the shining leaves. Nat. ord., *Leguminosæ*; Tribe, *Genistee*. Allied to *Priestleya*.)

Greenhouse evergreens, with orange flowers, from the Cape of Good Hope. Cuttings of young shoots in sand, under a bell-glass, but care taken to prevent damping; fibry loam and turfy peat, with sand and a little charcoal; watering and draining carefully attended to. Winter temp., 40° to 45°.

- L. parva.* 2. March. 1843. B. M. t. 4034.
— *sphaerica.* 4. July. 1794. Andr. Rep. t. 568.
— *villosa.* Andr. Rep. t. 382. See *Priestleya vestita*.

Li'paris. (From *liparos*, unctuous; referring to the leaves. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Lipariæ*. Syn., *Empusa*.)

Stove orchids with small, greenish flowers. Fibry 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 hardly worth cultivating.

- L. abbreviata*. Green, white, yellow. Java. 1844. Syn., *Dendrochilum abbreviatum* and *Gastroglottis abbreviatus*.
- *ala'ta*. Mexico. 1843.
- *a'niceps*. Yellowish-green. China. 1837.
- *atropurpu'rea*. June. Ceylon. 1865.
- *cytindroscuta*. India.
- *vitindroscuta*. See *L. longipes*.
- *decur'sa*. Green, whitish. India. 1884.
- *di'scolor*. Green, brown. May. Demerara. 1826.
- *ela'ta*. W. Indies and Tropical America. B. R. t. 1175.
- *e'legans*. See *L. longipes*.
- *elegantis'sima*. 1881.
- *elli'ptica*. W. Indies and Tropical America. 1879. Syn., *L. Galeotiana* and *L. Lindeniana*.
- *ferrugi'nea*. Green. January. Borneo and Malacca. 1848.
- *folio'sa*. B. R. t. 882. See *L. reflexa*.
- *formosa'na*. Purple, green, brown. March. Formosa. 1880.
- *ful'gens*. Bright red. Philippines? 1839.
- *gro'ssa*. Burmah. G. C. 1833, xix. p. 27.
- *guinee'nsis*. W. Tropical Africa. B. R. t. 671.
- *latifo'lia*. Java. G. C. 1885, xxiii. p. 532.
- *lilifo'lia*. Brownish-purple. June. N. America. Syn., *Malaxis lilifolia*, B. R. t. 2004, and *Ophrys lilifolia*, Andr. Rep. t. 65.
- *Laese'li*. Pale yellow. July. N. America and East England. Eng. Bot. ed. 3, t. 1488.
- *longipes*. 1. Greenish, orange-red. Penang. 1838. Syn., *L. elegans*.
- *minutiflo'ra*. See *L. spathulata*.
- *parado'xa*. Greenish. Nepaul. Syn., *Empusa paradoxa*, B. R. t. 825, and *Malaxis lancifolia*.
- *pe'ndula*. 1. Pale green. India.
- *plantagi'nea*. India. Syn., *L. orbicularis*.
- *prio'chilus*. Orange. July. China. 1830.
- *purpura'scens*. Purple. Bourbon.
- *refle'xa*. 2. Green. September. Mauritius. 1823. Syn., *L. foliosa*. B. R. t. 882.
- *Saundersia'na*. Greenish, violet. Jamaica. 1872.
- *spathula'ta*. Pale green. India. 1842. Syn., *L. minutiflora*.
- *Stricklandia'na*. Greenish. 1880.
- *tricallo'sa*. 1. Yellow, purple. Borneo. 1879.
- *tri'stis*. Ceylon.
- *zeyla'nica*. Greenish. Ceylon.

Li'paris. A genus of moths, the best known species of which is *L. di'spar*, the Gipsy Moth, which often greatly damages hawthorns, plums, apples, and other Rosaceae trees. The males are dark brown, with transverse zigzag lines and a central spot on the front wings. The females are much larger, with thicker bodies, and whitish wings with zigzag lines. On account of their large size they can be destroyed by hand-picking.

Lipo'stoma. (From *leipo*, to fall off, and *stoma*, mouth; referring to the lid of the capsule. Nat. ord., *Rubiaceæ*; Tribe, *Mussendeæ*. Allied to *Pentas*.) See **Coccocypselum**.

L. campanuliflo'ra. See *Coccocypselum campanuliflorum*.

Li'ppia. (After *Augustus Lippi*, a French traveller in Abyssinia. Nat. ord., *Verbenaceæ*. Syn., *Aloysia* and *Zapania*.)

Greenhouse deciduous shrubs. Rich mould; cuttings in sandy soil of the old stem, or young shoots; if the latter, shade is required; August and March best times.

- L. asperifolia*. 2. Red. July. S. America. 1820. Syn., *Lantana lavandulacea*. Jacq. H. Schoenb. t. 361.
- *citriodo'ra*. 3. Pale purple. August. Chili. 1784. Syn., *Aloysia citriodora*, B. M. t. 367, and *Verbena triphylla*.
- *nodiflo'ra*. 1. White or purple. Summer. N. America. Half-hardy. Syn., *Zapania nodiflora*.
- *re'ptans*. 1. White, red. June. S. America. 1847.

Liquida'mbar. (From *liquidus*, liquid, and *ambar*, amber; referring to the gum called liquid storax produced by some species. Nat. ord., *Hamamelidææ*. Allied to *Altingia*.)

Hardy deciduous trees. Cuttings, but chiefly layers; 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. imbe'rbe*. 6. March. Levant. 1759. Syn., *L. orientalis*.
- *orienta'lis*. See *L. imberbe*.
- *styraci'flua*. 60. March. N. Amer. 1633.

Liquid-Manure is the most advantageous form in which fertilizers 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 they 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 hogshhead 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 Fertilizers.*

Guano Liquid-Manure.—Ten gallons of water will readily dissolve, or keep suspended in a state of minute division, about 50lbs. 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. A synonym of **Glycyrrhiza glabra.**

Liquorice. *Glycyrrhiza.*

Liriode'ndron. Tulip-tree. (From *lirion*, a lily, and *dendron*, a tree. Nat. ord., *Magnoliaceæ*; Tribe, *Magnoliææ.*)

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. tulipifera. 60. June. 1663.

— *obtusifolia.* 60. June. 1663.

Liri'ope. (After the nymph *Liriope*. Nat. ord., *Hæmodoraceæ.*)

Hardy or half-hardy, ornamental foliage plant. Same treatment as *OPHIOPOGON.*

L. graminifolia. $\frac{1}{2}$ -1. Violet. October. China and Japan. 1821. Syn., *Ophiopogon spicatus.* B. M. t. 5348.

Lisia'nthus. (From *lysis*, dissolution, and *anthos*, flower; a powerful cathartic is obtained from this genus. Nat. ord., *Gentianææ*; Tribe, *Chironiææ.* Syn., *Lisyanthus.*)

Seeds in spring, in a hothed, 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.* 6. Yellow. July. Peru. 1820. Biennial.
— *ala'trus.* 1 $\frac{1}{2}$. White. July. Mexico. 1824.
— *grandiflorus.* 3. Yellow. June. Trinidad. 1818. Biennial.
— *Ku'nthii.* Green. May. S. Amer.

STOVE EVERGREENS.

- L. Ærste'dii.* Yellowish, white. Nicaragua. 1871.
— *princeps.* Crimson. New Grenada.
— *pu'licher.* 5. Scarlet. September. New Grenada. 1846. B. M. t. 4424.
— *splendens.* Red. June. New Grenada. 1846. Trailer.

EXCLUDED SPECIES.

- L. cordifolius.* See *Leianthus cordifolius.*
— *glancifolius.* See *Eustoma exaltatum.*
— *latifolius.* See *Leianthus latifolius.*
— *longifolius.* B. R. t. 880. See *Leianthus longifolius.*
— *ophiorhiza.* See *Metternichia principis.*
— *Russellianus.* B. M. t. 3626. See *Eustoma Russellianum.*
— *umbellatus.* See *Leianthus umbellatus.*

Lissanthe. (From *lissos*, smooth, and *anthos*, a flower. Nat. ord., *Epicridaceæ*; Tribe, *Stypheliææ.* Allied to *Leucopogon.*)

Greenhouse evergreen shrubs, with white flowers, except *verticillata*, and all from Australia. Cuttings of the points of shoots in April and May, in sand, under a bell-glass; chiefly sandy, fibry 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. ciliata.* 3. June. 1825. A synonym of *Brachyoloma ciliatum.*
— *daphnoides.* 3. June. 1818. B. C. t. 466. A synonym of *Brachyoloma daphnoides.*
— *sapida.* 4. June. 1824. B. M. t. 3147.
— *stellata.* April. 1836. A synonym of *Brachyoloma daphnoides.*
— *strigosa.* 3. June. 1824.
— *subulata.* 2. May. 1823.
— *verticillata.* See *Leucopogon verticillatus.*

Lisso'chilus. (From *lissos*, smooth, and *cheilos*, a lip. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Eulophiææ.* Allied to *Cyrtopera.*)

Stove orchids. Division in spring, when fresh growth commences and potting takes place; fibry peat, a little fibry loam, dried leaf-mould, and plenty of drainage. Summer temp., 60° to 90°; winter, 55° to 60°.

- L. dilectus.* 2-3. Rosy; lip purple. Congo. 1886.
— *giganteus.* G. C. 1888, iii. p. 617, fig. 83. See *Eulophia gigantea.*
— *Horsfallii.* Purplish brown, white. Old Calabar. 1865. B. M. t. 5486.
— *Krebsii.* 2. Green, purple, yellow. Natal. 1867. B. M. t. 6861.
— *lutens.* 1 $\frac{1}{2}$. Yellow. May. Cape of Good Hope. 1822.
— *parviflorus.* 1. Pale red. December. Algoa Bay. 1822. Maund Bot. t. 172. A synonym of *Eulophia parviflora.*
— *roseus.* Rose. February. Sierra Leone. 1841. B. R. 1844, t. 12.
— *Sandersoni.* 6-7. White; lip green with brownish veins, violet. June. Natal. 1879. B. M. t. 6858.
— *speciosus.* 2. Yellow. June. Cape of Good Hope. 1818. B. R. t. 573.

L. streptopetalus. Yellow. December. Cape of Good Hope. 1826. Syn., *Eulophia streptopetala*, B. M. t. 2931.
— *stylites*. Rose. Comoro Islands. 1885.

Listrosta'chys. This does not appear to differ from **Angræcum**, under which we include the species.

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, harmonizing with that of the leaves. If old lists are re-employed, they should be previously boiled, to destroy the larvæ of insects.

Litanthus. (From *litos*, small, and *anthos*, a flower; from the small size of the plant. Nat. ord., *Liliaceæ*; Tribe, *Scilleæ*. Allied to *Drimia*.)

A minute greenhouse bulb; probably the smallest known Liliaceous plant, which, despite its small size is very pretty when a number of bulbs are grown in one pot. It should be grown in light sandy loam, and treated like *Scilla* and other Cape bulbs.

L. pusillus. $\frac{1}{2}$. White. August. S. Africa. 1870. B. M. t. 5995.

Lithospermum. Gromwell. (From *lithos*, a stone, and *sperma*, a seed. Nat. ord., *Boraginææ*; Tribe, *Borageæ*. 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; *scabrum* and *distichum* will require protection in winter, and a little peat added to the loam.

HARDY ANNUALS, ETC.

L. dispermum. See *Rochelia stellulata*.
— *lineatum*. 1. Purple. July. Greece. 1826. Biennial.
— *tenuiflorum*. $\frac{1}{2}$. Blue. May. Egypt. 1796. Syn., *L. ægyptiacum*.

HARDY EVERGREENS.

L. graminifolium. $\frac{3}{4}$. Blue. May. Italy. 1825.
— *petraeum*. B. M. t. 5922. See *Moltkia*.
— *prostratum*. 1. Blue. June. France. 1825. Trailing.
— *rosmarinifolium*. $\frac{1}{2}$. Blue. September. Italy. 1833. B. R. t. 1736.

HARDY HERBACEOUS.

L. canescens. $\frac{3}{4}$. Orange. May. Canada. 1847. B. M. t. 4389. Syn., *Batschia canescens*.
— *distichum*. $\frac{1}{2}$. Yellow, white. May. Cuba. 1806. Half-hardy.
— *fruticosum*. 2. Blue. May. South Europe. 1683. Belg. Hort. 1866, t. 2.
— *gastroli*. $\frac{1}{2}$. Blue, white, purple. Pyrenees. 1871. B. M. t. 5926.
— *hirtum*. 1-2. Orange. N. United States and Canada. 1812. Syns., *Batschia Gmelini* and *B. carolinensis*.

L. latifolium. 2. Yellow. June. N. Amer. 1825. Syn., *L. officinale*, var. *latifolium*.
— *officinale*. 2. Yellow. June. Britain. Eng. Bot. ed. 3, t. 1101.
— *latifolium*. See *L. latifolium*.
— *orientale*. 2. Yellow. June. Levant. 1713. B. M. t. 615. A synonym of *Alkanna orientalis*.
— *purpureo-cæruleum*. 1. Purple. May. England. Eng. Bot. ed. 3, t. 1100.
— *scabrum*. $\frac{1}{2}$. White. September. Cape of Good Hope. 1822. Half-hardy.
— *sericeum*. $\frac{1}{2}$. Yellow. July. N. Amer. 1825. Syn., *Batschia sericea*.
— *strigosum*. 1. Blue. July. Tauria. 1820.
— *tinctorium*. $\frac{1}{2}$. Blue. July. South Europe. 1596. Andr. Rep. t. 576. A synonym of *Alkanna tinctoria*.
— *villosum*. 1. Blue. July. South France. 1817.

Li'threa. (From *lythron*, black blood; referring to the juice staining black. Nat. ord., *Anacardiaceæ*.) See **Rhus**.

L. castica. } See *Rhus castica*.
— *venenosa*. }

Li'tbro'chia. (A commemorative name. Nat. ord., *Filices*.) By some authors regarded as a section of **Pteris**.

Stove fern. See **FERNS**.

L. aculeata. 10. Brown. August. W. Ind. 1793.
— *alcyonisa*. Brazil. 1864.
— *ampla*. Brown, pale yellow. May. W. Ind.
— *areolata*. E. Indies. 1860.
— *aurita*. Brown, yellow. July. Isle of Luzon.
— *biarrita*. 4. W. Indies. 1842.
— *comans de nsa*. New Caledonia. 1879.
— *davallioides*. Yellow. May.
— *decurrens*. Brown, yellow. July. Brazil.
— *denticulata*. 2. Brown. July. Brazil. 1824.
— *elata*. Tropical America.
— *grandifolia*. 2. Brown. August. W. Ind. 1793.
— *Hankea'na*. Brown, yellow. June.
— *hirsuta*. 1. Brown. June. W. Ind. 1793.
— *intermedia*. Brown, yellow. June. Isle of Luzon.
— *leptophylla*. 2. Brown. July. Brazil. 1824.
— *macroptera*. Brown, yellow. June. W. Ind.
— *no'bilis*. 2. Brazil. 1862.
— *orizabæ*. Mexico. 1858.
— *pedata*. 1. Brown. June. Jamaica. 1793.
— *podophylla*. Brown, yellow. June. W. Ind.
— *poli'ta*. 6. Brown, yellow. May. Jamaica. 1841.
— *robusta*. Clear green. 1884.
— *spinulosa*. Brown, pale yellow. W. Ind.
— *splendens*. Brown, pale yellow. June. W. Ind.
— *tripartita*. India. 1865.
— *undulata*. Fiji Islands. 1867.
— *vespertilio'nis*. 3. Brown. May. N. Holland. 1823.

Litsæ'a. (From the Japanese name. Nat. ord., *Laurinææ*; Tribe, *Litsæeæ*. Syn., *Tetranthera* in part.)

Half-hardy trees, requiring some culture as LAURUS.

L. geniculata. 6. Yellow. May. S. United States. 1759. Syn., *Laurus geniculata*, B. M. t. 1471, and *Tetranthera geniculata*.
— *glauca*. Whitish. Summer. Japan. Leaves silvery beneath.
— *japonica*. 3. White. Japan. 1813.

L. Tetra'nthera. 8. Green, yellow. April. N. Holland. 1824. Syns., *L. citrifolia*, *Tetranthera apctata* and *I. laurifolia*. Jacq. H. Schoenb. t. 113.

Littæ'a. (Named after the Duke of Litta, near Milan. Nat. ord., *Amaryllidææ*; Tribe, *Agaveæ*.) Now united with **Agave**.

Greenhouse evergreen. Suckers; sandy loam and leaf-mould, and a little dried cow-dung. Winter temp., 40° to 45°.

L. geminiflora. A synonym of *Agave geminiflora*.

Litto'nia. (In honour of Dr. S. Litton, professor of botany, Dublin. Nat. ord., *Liliacææ*; Tribe, *Uvulariææ*.)

A stove bulb. Offsets. Light rich soil.

L. mode'sta. 2½. Orange. April. S. Africa. 1853. B. M. t. 4723.

— — *Keitii*. Orange. More robust than the type. Gf. t. 1237.

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., *Palmeææ*; Tribe, *Coryphææ*. Allied to *Corypha*.)

Greenhouse palms. Seeds in a hotbed; rich, sandy loam. Summer temp., 60° to 80°; winter, 50° to 60°.

L. alti'ssima. Sunda Islands. 1868. Fl. Ser. t. 1740.

— *australis*. 80. Whitish. E. Australia. Gf. 1872, p. 50.

— *borbo'nica*. Isle of Bourbon. 1818.

— *en'er'mis*. 1891. Perhaps the same as *L. inermis*.

— *Hoogend'rpiti*. Sara. 1874. III. Hort. 1874, t. 174.

— *humi'lis*. 6. Australia. 1824. Mart. Palm. tt. 109 and 111.

— *in'er'mis*. 10. Australia. 1824. Mart. Palm. tt. 145-6.

— *Jenki'nsii*. Assam. 1845.

Lla'vea. (In honour of M. la Llave, the discoverer of the only known species. Nat. ord., *Filices—Polypodiæææ*.)

Stove ferns. See FERNS.

L. cordifolia. 2. Mexico. 1858.

Lloydia. (Named after Mr. Lloyd, an English botanist. Nat. ord., *Liliacææ*; Tribe, *Tulipeææ*. Allied to *Calochortus*.)

Hardy perennial bulb. Offsets in epring; a dry, sandy loam suits it best.

L. sero'tina. White striped with red. May. Alpine Europe. 1789. Eng. Bot. ed. 3, t. 1520. Syn., *L. striata*.

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, 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., *Loasacææ*. Very closely allied to *Blumenbachia*.)

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 hothed 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. acanthifolia. See *L. Placæi*.

— *a'ba*. 1. White. July. Chili. 1831. Swt. Fl. Gard. ser. 2, t. 192.

— *bi'color*. White, red. July. Central America. 1852.

— *grandiflora*. 2. Yellow. Peru. 1825.

— *hi'spida*. 2. Yellow. July. Lima. 1830. B. M. t. 3057.

— *ni'tida*. 2. Yellow. July. Chili. 1822. Swt. Fl. Gard. ser. 2, t. 195. Syn., *L. tricolor*, B. R. t. 667.

— *pa'tula*. 1. Yellow. July. Chili. 1827.

— *pi'cta*. White, yellow. July. Peru. 1848. B. M. t. 4423.

— *Pla'cei*. 4. Yellow. July. Chili. 1822. B. M. t. 3218. Syn., *L. acanthifolia*. B. R. t. 785.

— *prostrata*. Yellow, red. Chilian Andes. 1879. B. M. t. 6442.

— *Schlimi'na*. 2. Yellow of two shades. Sierra Nevada. Fl. Ser. t. 1001.

— *tri'color* of B. R. t. 667 is *L. ni'tida*.

— *volu'bilis*. B. M. t. 5028. See *Grammatocearpus volubilis*.

— *vulca'nica*. 2. White, red, yellow. Summer. Ecuador. 1877. B. M. t. 6410.

— *Wall'i'sii*. 1½. White, red. Andes of Columbia. 1879. Gf. t. 958.

GREENHOUSE BIENNIALS.

L. lateri'tia. B. M. t. 3632. See *Blumenbachia lateritia*.

L. Pentlandii. 4. Orange. August. Peru. 1840. Syn., *Catophora lateritia*. B. M. t. 3632.

GREENHOUSE EVERGREENS.

L. inca'na. 2½. White. October. Peru. 1820. B. M. t. 3048.

— *lu'cida*. White. June.

Loaving. See Heading.

Lobe'lia. (Named after *M. Lobel*, a botanist, physician to James I. Nat. ord., *Campanulaceæ*; Tribe, *Lobelieæ*. Syns., *Rhynchopetalum* and *Tupa*.)

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 *spl'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; *lacu'stris* has been grown in peat and gravel, in a pot, plunged in a cistern or slowly-running stream.

HARDY ANNUALS.

L. a'niceps. ½. Blue. June. Cape of Good Hope. 1818.

— *campanula'ta*. ½. Blue. June. Cape of Good Hope. 1821.

— *Cliffortia'na*. 1½. Pink. July. N. Amer.

— *fenestra'lis*. ½. Blue. July. Mexico. 1824. B. R. t. 1838, t. 47.

— *serrula'ta*. ½. Blue. June. Spain. 1820.

GREENHOUSE ANNUALS.

L. bi'color. ¾. Pale blue. July. Cape of Good Hope. 1795. B. M. t. 514.

— *gra'cilis*. 1. Dark blue. July. N. S. Wales. 1801. Andr. Rep. t. 340.

— *Laure'ntia*. ¾. Blue. July. Italy. 1778.

— *si'mplex*. ½. Blue. July. Cape of Good Hope. 1794. Biennial.

GREENHOUSE HERBACEOUS.

L. ala'ta. 1½. Blue. June. N. Holland. 1804.

— *argu'ta*. 2. Blue. September. Chili. 1824. B. R. t. 978.

— *bellidifo'lia*. ½. Blue. September. Cape of Good Hope. 1790.

— *Bridge'sii*. 4. Pink. June. Chili. 1836. B. M. t. 3671.

— *cæru'lea*. 1½. Blue. June. Cape of Good Hope. 1824. B. M. t. 2701.

— *campanulo'ides*. ½. White. June. China. 1820. B. R. t. 733.

— *cardina'lis*. 3. Scarlet. July. Virginia. 1629. B. M. t. 320.

— *Cavanillesia'na*. 3. Red. June. Spain. 1825. B. M. t. 3600.

— *coronopifo'lia*. ¾. Blue. July. Cape of Good Hope. 1752. B. M. t. 644.

— *crena'ta*. ½. Blue. April. Cape of Good Hope. 1794.

— *decu'mbens*. ½. Blue. October. Cape of Good Hope. 1820. B. M. t. 2277.

— *denta'ta*. 1. Blue. June. N. Holland. 1824.

— *di'scolor*. Blue. August. Swan River. 1818.

— *erino'ides*. B. M. t. 3069. See *Laurentia erinoides*.

— *eri'nus*. ½. Blue. July. Cape of Good Hope. 1752. B. M. t. 901.

— *compa'cta*. ½. Blue. June. Gardens.

— *compa'cta d'iba*. ½. White. June. Gardens. 1847.

L. eri'nus grandifo'ra. ¾. Blue. June. Gardens. 1841.

— *lu'cida*. Blue, white. June. Gardens.

— *fulgens*. 3. Scarlet. July. Mexico. 1809. B. R. t. 165.

— *Marryat'tæ*. 3. Crimson, purple. May. 1847.

— *multifo'ra*. 4. Scarlet. May. 1847.

— *pyramida'lis*. 4. Scarlet. May. 1847.

— *heterophylla*. 2. Blue. September. Van Diemen's Land. 1837. B. R. t. 3784.

— *ma'jor*. 3. Blue. June. Swan River. 1840.

— *hirsu'ta*. ½. Blue. July. Cape of Good Hope. 1759. Andr. Rep. t. 444.

— *hypocraterifo'rnis*. B. M. t. 3075. See *Isotoma Brownii*.

— *igne'a*. 4. Flame. June. Chili. 1838. Paxt. Mag. vi. p. 247.

— *ilicifo'lia*. ½. Pink. June. Cape of Good Hope. 1815. B. M. t. 1896.

— *Kerne'ri*. Violet-purple. Costa Rica. 1889.

— *Krau'ssii*. 1½. Blue. January. Dominica. 1828. B. M. t. 3012.

— *longifo'ra*. B. R. t. 1200. See *Isotoma longiflora*.

— *lu'tea*. ½. Yellow. June. South Africa. 1774. Syn., *Parastranthus simplex*.

— *mi'nima*. 1-12th. White. July. Cape of Good Hope. 1800.

— *minu'ta*. B. M. t. 2590. See *Laurentia minutata*.

— *mo'lis*. Purple. June. Dominica. 1828.

— *mucrona'ta*. 3. Bright crimson. August. Chili. 1831. B. M. t. 3207.

— *multifo'ra*. Purple. June. Swan River. 1838.

— *nicotianefo'lia*. White. Neilberries. 1866.

— *peduncula'ta*. 1. Blue. October. N. S. Wales. 1819. B. M. t. 2251.

— *persicifo'lia*. 1. Purple. June. W. Ind. 1824. Stove.

— *physalo'ides*. Ic. Pl. t. 555. See *Colemsoa physaloides*.

— *pube'scens*. ¾. Blue. September. Cape of Good Hope. 1780. Jacq. H. Schoenb. t. 178.

— *purpura'scens*. 1. Blue. July. N. S. Wales. 1809.

— *pyramida'lis*. 4. Blue. September. Nepal. 1822. B. M. t. 2387.

— *rugulo'sa*. 2. Blue. June. New Zealand. 1826.

— *seneccio'ides*. B. M. t. 2702. See *Isotoma senecioides*.

— *seta'cea*. ½. Blue. June. Cape of Good Hope. 1816. Sbth. Fl. Gr. t. 221.

— *Si'msii*. 1. Blue. October. Cape of Good Hope. 1819.

— *spl'ndens*. 3. Scarlet. June. Mexico. 1814.

— *teae'nsis*. Scarlet. June. Mexico. 1845.

— *thapsoi'dea*. 6. Rosy-purple. Organ Mountains. 1843. B. M. f. 4150.

— *Thunbe'rgii*. 1. Blue. August. Cape of Good Hope. 1822.

— *trigonococ'lis*. 1. Blue, white. July. Moreton Bay. 1858.

— *trique'tra*. 1. Blue. July. Cape of Good Hope. 1774.

— *Tu'pa*. 6-8. Reddish-scarlet. Autumn. Chili. 1824. B. M. t. 2550. Syns., *L. Feuillet* and *Tupa Feuillet*.

— *umbello'ta*. 1. Blue. June. 1878.

— *varifo'lia*. 1. Yellow. June. South Africa. 1812. Syn., *Parastranthus varifolius*.

— *zeyla'nica*. 1. Blue. June. E. Ind. 1821.

GREENHOUSE EVERGREENS.

L. assu'rgens. 3. Scarlet. August. W. Ind. 1787. Andr. Rep. t. 553.

— *begoniaefo'lia*. ½. Pale blue. June. Nepal. 1827.

— *decu'rrens*. 3. Purple. July. Chili. 1826. B. R. t. 1842.

- L. gigantea*. 14. Orange. August. S. Amer. 1828. B. M. t. 1325.
 — *heteromalla*. Blue. 1829.
 — *linearis*. †. Blue. Cape of Good Hope. 1791.
 — *maculata*. †. White. May. New Zealand. 1829.
 — *odora*. †. White. September. Buenos Ayres. 1832.
 — *pinifolia*. 1‡. Blue. June. Cape of Good Hope. 1782. Andr. Rep. t. 273.
 — *purpurea*. 1. Purple. June. Valparaiso. 1825. Stove. B. R. t. 1325.
 — *robusta*. 3. Blue. August. Hayti. 1830. Stove. B. M. t. 3138.

HARDY HERBACEOUS.

- L. amœna*. 3. Blue. July. N. Amer. 1812.
 — *Claytoniana*. 2. Blue. June. N. Amer. 1824.
 — *caelestis*. 2. Blue. July. N. Amer. 1831. Paxt. Mag. xv. p. 103.
 — *colorata*. 5. Orange. August. N. Amer. 1832. Swt. Fl. Gard. ser. 2, t. 180.
 — *crispata*. 2. Blue. June. N. Amer. 1825.
 — *glandulosa*. 2‡. Blue. September. New Carolina. 1840. B. R. 1846, t. 6.
 — *Kalmii*. 1. Blue. July. Carolina. 1820. B. M. t. 2238.
 — *lacustris*. Pale blue. July. Britain.
 — *littoralis*. See *Pratia angulata*.
 — *Nuttallii*. 1. Blue. July. N. Amer. 1824.
 — *paludosa*. Pale blue. July. N. Amer.
 — *polyphylla*. 4‡. Purple. August. Valparaiso. 1829. B. M. t. 3550.
 — *puberula*. 1. Pale blue. June. N. Amer. 1800.
 — *glabella*. †. Purple, blue. July. Louisiana. 1832. B. M. t. 3292.
 — *ramosa*. 2. Dark blue. August. Swan River. 1838. Maund Bot. ii. t. 93.
 — *sessilifolia*. 3. Violet-blue. 1832.
 — *syphyllifolia*. 2. Light blue. September. Virginia. 1665. B. C. t. 955.
 — *alba*. 3. White. August.
 — *hybrida*. B. M. t. 3604.
 — *tenebra*. †. Purple, violet. May. South Africa. 1821. Syn., *Parastranthus undentatus*.

Loblolly-bay. *Gordonia lasianthus*.

Loche'ria. See *Achimenes*.

Lockhartia. (In honour of Mr. David Lockhart, a traveller and the introducer of *L. elegans*. Nat. ord., *Orchideæ*; Tribe, *Vandee-Sarcantheæ*.)

Stove epiphytes; should be grown on blocks. For cultivation, see ORCHIDS.

- L. acuta*. †. Yellow. June. Trinidad. 1834. Syn., *Fernandezia acuta*. B. R. t. 1806.
 — *amœna*. Yellow, purple. Costa Rica.
 — *elegans*. †. Yellow, purple. Trinidad. 1827. B. M. t. 2715. Syn., *Fernandezia elegans*. B. C. t. 1214.
 — *humifera*. Yellow. July. Brazil. 1839.
 — *paludosa*. †. Yellowish-orange. 1854.
 — *verrucosa*. 1. Yellow, red. Guatemala. 1841. Ref. Bot. t. 76. Syn., *Fernandezia robusta*. B. M. t. 5592.

Locust-tree. *Hymenoclea*.

Loddigesia. (Named after Conrad Loddiges, the founder of the well-known nursery at Hackney. Nat. ord., *Leguminosæ*; Tribe, *Genisteæ*. 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. ovalifolia. 1‡. Pale purple. June. Cape of Good Hope. 1802. B. M. t. 965.

Lodoicea. Double Cocoa-nut or Coco de Mer. (Named after *Laodice*, the daughter of Priam and Hecuba. Nat. ord., *Palmecæ*.)

Stove palm. Seeds in a strong, moist heat; loam and peat. Summer temp., 60° to 90°, with plenty of moisture in the atmosphere; winter, 58° to 60°.

L. seychellarum. 60. Seychelles Islands. B. M. t. 2734.

Loese'lia. (After John Loesel, a Prussian botanist. Nat. ord., *Polemoniaceæ*. Syn., *Hoitzia*.)

Greenhouse shrubs, or undershrubs. Fibry peat and sandy loam. Cuttings in sand, under a bell-glass.

L. coccinea. 3-4. Scarlet. June. Mexico. 1824. Gff. t. 643. Syns., *Hoitzia coccinea*. Kn. and West. t. 99, and *H. mexicana*.

— *cœrulea*. 1. Blue. June. Mexico. 1824. Syn., *Hoitzia cœrulea*.

— *glandulosa*. 2. Red. June. Mexico. 1825. Syn., *Hoitzia glandulosa*.

Loga'nia. (Named after J. Logan, a distinguished botanist. Nat. ord., *Loganiaceæ*; Tribe, *Euloganiææ*. Allied to *Fagraea*.)

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 fibry peat, kept more open still by pieces of charcoal. Winter temp., 38° to 45°. In summer the pots must be plunged in ashes.

L. floribunda. 2. April. 1797. B. C. t. 1118. Syn., *Euosma albiflora*. Andr. Rep. t. 520.

— *latifolia*. 3. 1816.

— *revoluta*. 2. 1826.

Logwood. *Haematoxylon*.

Loiseleu'rea. (Named after *Loiseleur Deslongchamps*, a celebrated French botanist, who died in 1849. Nat. ord., *Ericaceæ*; Tribe, *Rhodoreæ*. Syns., *Chamæcistus* and *Chamaedon*.)

A hardy, prostrate shrub cultivated like the hardy species of *AZALEA*.

L. procumbens. †. Pink. Late summer. Mountains of N. Europe (Scotland). Eng. Bot. ed. 3, t. 882. Syns., *Azalea procumbens* and *Chamaedon procumbens*.

Lomag'ramma. (From *loma*, an edge, and *gramma*, writing; referring to the appearance and position of the spore or seed-cases on the leaves. Nat. ord., *Filices*.)

Stove fern. See FERNS.

L. pteroides. Brown. May. Isle of Luzon. 1840. An abnormal form of *Acrostichum Blumeanum*.

Loma'ria. (From *loma*, an edge; referring to the position of the spore or

seed-cases on the leaves. Nat. ord., *Filices*.)

All brown-spored. See FERNS.

GREENHOUSE.

- L. alpina*. Falkland Isles. 1843.
- *antarctica*. Magellan. 1843.
- *attenuata*. 1. August. 1838.
- *australis*. 1½. S. Africa. 1839.
- *Banksii*. New Zealand.
- *Belii*. New Caledonia. 1865.
- *blechnoides*. 1. Chili.
- *Boryana*. 6. Terra del Fuego. 1843. Syn., *L. magellanica*. Hook. Gard. Ferns, t. 52.
- — *cycadioides*. S. E. Africa. 1875.
- — *Dalgairnsiae*. S. Africa. 1877.
- *capensis*. 2½. S. Africa. A form of *L. procerca*.
- *ciliata*. New Caledonia. 1866.
- *crenolata*. Chili. 1862.
- *cycadifolia*. Juan Fernandez.
- *d'scolor*.
- — *bipinnatifida*. Australia. 1878.
- *dobroydensis*. New South Wales. 1875.
- — Chatham Islands. 1866.
- *elongata*. New Zealand.
- *falca*. 2. July. Van Diemen's Land. 1823.
- *fluvialtilis multifida*. New Zealand. 1879.
- *Fraseri*. New Zealand. 1843. Ic. Pl. t. 185.
- *gl'ba*. 2. New Caledonia. 1862.
- *Gilliesii*. 1½. Chili. 1841. Hook. Ic. Fil. t. 207.
- *lancoleta*. ½. September. N. Holland. 1830. Ic. Pl. t. 429.
- *Lechleri*. Chili. 1866.
- *magellanica*. See *L. Boryana*.
- *nu'da*. 2. June. Van Diemen's Land. 1822.
- *Patersoni*. ½. September. N. Holland. 1830.
- *procerca*. 3. July. New Zealand. 1822.

STOVE.

- L. campylo'tis*. Tropical America.
- *chilensis*. Chili.
- *d'scolor*. Brazil.
- *fluvialtilis*. ½-1. Australia and New Zealand.
- *gig'nea*. S. Africa and Polynesia. 1876.
- *L'Herminieri*. ½. Tropical America.
- *longifolia*. 2. June. W. Ind. 1810.
- *onocleoides*. July. Jamaica. 1824.
- *punctata*. 1½. S. Africa.
- *sorbifolia*. August. W. Ind. 1793.
- *strata*. Tropical America.
- *vestita*. Isle of Luzon.

HARDY.

- L. Spi'cant*. 1. Britain. Syn., *Blechnum Spicant*.
- — *an'mala*. ¾. Wales.
- — *concinna*. 1. Margins crenulate.
- — *contra'cta*. 1. N. Wales.
- — *cri'spa*. Lobes of frond curled; apices crested.
- — *cristata*. Crested and forked.
- — *flabella'ta*. Fan-shaped.
- — *imbricata*. ½. Lobes imbricated.
- — *imbricata-to-ere'cta*. Pinnae turned back.
- — *lanco'folia*. ¾. Terminal pinna much elongated.
- — *multifurcata*. ¾. Apex much divided.
- — *polyda'ctyla*. Much crested.
- — *serrato-ri'gida*. ¾. Serrate on both margins and crested at the apex.
- — *serrulata*. ½. Beautifully serrate.
- — *stri'cta*. 1. Fertile fronds narrower than the barren ones.
- — *trinervis*. Fronds three-lobed at the base.
- — — *coronans*. Apices crested.
- — *varia'bilis*. ½. Suddenly contracting at about a third of the length from the base.

Lomario'psis. (From *Lomaria*, and *opsis*, like. Nat. ord., *Filices*—*Polypodiaceae*.)

Stove fern. See FERNS.

L. heteromorpha. New Zealand. Trailing, good for rock-work.

Loma'tia. (From *loma*, an edge; referring to the winged edge of the seeds. Nat. ord., *Proteaceae*; Tribe, *Embothriaceae*. 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. Bidw'illii*. 10. New South Wales.
- *dentata*. 3. Chili. 1824.
- *elegantissima*. New Zealand. 1862.
- *ferruginea*. 10. Green, crimson. Chili. 1851.
- *ilicifolia*. 3. July. New South Wales. 1824. B. M. t. 4023.
- *longifolia*. 8-10. Whitish. Summer. New South Wales. 1816. B. R. t. 442.
- *silaifolia*. 2. Orange. July. N.S. Wales. 1792. B. M. t. 1272.
- *tinctoria*. 2. N. Holland. 1822. B. M. t. 4110.

Lomatophyllum. (From *loma*, a border, and *phyllon*, a leaf; from the distinctly bordered leaves. Nat. ord., *Liliaceae*; Tribe, *Aloineae*. Allied to *Aloe*.)

These only differ from *ALOE* in having a baccate fruit. They require the same treatment as *ALOE*.

- L. borbonicum*. 3. Yellow, brownish-red. June. Bourbon. 1766. Syns., *L. aloiflorum*, *Aloe marginatis* and *Phylloa aloiflorum*. B. M. t. 1585. Bourbon *Aloe*.
- *Saundersii*. Mauritius. 1871.

Lonchi'tis. (From *lonche*, a lance, the shape of the leaves, or fronds. Nat. ord., *Filices*.)

Stove ferns, with brown spores, from the Tropics. Some species are now joined to *Litobrochia*. See FERNS.

- L. aurita*. July. S. America.
- *glabra*. July. S. Africa.
- *Lindenia'na*. Caraccas. Hook. Sp. Fil. t. 89.
- *longifolia*. Tropical America.
- *pubescens*. July. Mauritius.
- *sorbifolia*. W. Indies.

Lonchocarpus. (From *lonche*, a lance, and *carpos*, a fruit; shape of seed-pod. Nat. ord., *Leguminosae*; Tribe, *Dalbergiaceae*. 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 fibry peat, with sand and charcoal to keep it open, though pressed firmly together. Summer temp., 60° to 85°; winter, 55° to 60°.

- L. Barteri*. Rose-pink. September. West Tropical Africa. B. M. t. 6943.
- *domingensis*. See *L. sericeus*, var. *glabrescens*.
- *latifolius*. 20. W. Ind. 1868.
- *macrophyllus*. See *L. sericeus*, var. *glabrescens*.
- *pubescens*. 25. Purple. Caraccas. 1824.
- *pyxidarius*. See *L. sericeus*.

- L. ro'seus*. 16. Red. S. Amer. 1700.
se'pium. 30. S. Amer. 1820.
seri'ceus. 20. W. Ind. 1826. Syn., *L. pyxi-*
darius.
 — — *glabre'scens*. 20. Red Tropical America.
 1816. Syn., *L. domingensis* and *L.*
macrophyllus.
viol'a'ceus. 12. W. Ind. 1759.

London Pride. *Saxi'fraga um-*
bro'sa.

Loni'cera. (Named after Adam
Lonicer, a German botanist. Nat. ord.,
Caprifoliaceae; Tribe, *Caprifoliaceae*. Al-
 lied to *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. Albe'rtii*. 3. Rosy. June. E. Turkestan.
 Gfl. t. 1065.
alpi'gena. 6. Yellow. April. South Europe.
 1596.
 — — *sibi'rica*. 5. Yellow. April. Siberia.
 1810.
angusti'folia. 5. Pale yellow. April. North
 India. 1847.
be'lla. Hybrid between *L. Morrowi* and *L.*
tatarica. 1889.
brachypo'da. See *L. japonica*, var. *chinensis*.
au'ro-reticula'ta. Veins golden-yellow;
 like network on the leaves. Japan.
 1862. Climber. Belg. Hort. 1871, t. 5.
canade'nsis. Yellow. May. Canada. 1812.
cane'scens. 10. April. Europe.
Caprifo'lium. Yellowish. May to June.
 Europe. (Britain.) Syn., *Caprifolium*
hortense and *C. italicum*.
 — — *ru'brum*. Red. June. S. Europe. Syn.,
Caprifolium italicum, var. *rubrum*.
chine'nsis. See *L. japonica*, var. *chinensis*.
cilia'ta. 4. White, red. April. N. Amer.
 1824. Syn., *Caprifolium ciliosum*.
 — — *alba*. 4. White, red. April. N. Amer.
 1824.
caeru'lea. 4. Yellow. May. Switzerland.
 1629. B. M. t. 1965.
confu'sa. 15. Red. June. China. 1806.
 Evergreen. Syn., *Caprifolium japoni-*
cum.
dis'color. 4. Yellow, crimson. June. E. Ind.
 1844.
diversi'folia. 4. Yellow. May. Himalayas.
 1843.
Douglas'sii. 20. Orange. July. N. America.
 1824. Climber. Syn., *Caprifolium*
Douglasii.
etru'sca. 15. Orange. May. Italy. Syn.,
Caprifolium cetruscum.
fla'va. Pale yellow. June. N. America. 1810.
 Twiner. B. M. t. 1818. Syn., *Capri-*
folium flavum.
flave'scens. Sulphur to citron-yellow. British
 Columbia. Syn., *L. Webbiana* of some
 gardens.
fleuro'sa. B. R. t. 712. See *L. japonica*, var.
chinensis.
floribu'nda. Pale rose. N. Persia. 1889.
fragranti'ssima. White. February. China.
 1845.
gibbifo'ra. Amur. 1889.
giga'ntea. Pale yellow or white. August.
 Gart. Zeit. 1886, p. 557.
gra'ta. 20. Red. July. N. Amer. 1730.
 Evergreen. Syn., *Caprifolium gratum*.
hirsu'ta. Yellow. June. N. America. 1822.
 B. M. t. 3103. Syns., *L. pubescens* and
Caprifolium hirsutum.

- L. his'pida*. 4-6. Yellow. May. Turkestan.
 Gfl. t. 1100.
hispi'dula. Rose. July. S. America. 1833.
 Syn., *Caprifolium hispidulum*. B. R.
 t. 1761.
ibe'rica. 6. Orange. April. Iberia. 1824.
imple'ca. 8. Red, yellow. July. Minorca.
 1772. Evergreen. Syn., *Caprifolium*
implexum.
 — — *balea'rica*. 8. Cream. June. Minorca.
 Syn., *Caprifolium implexum*, var. *balea-*
ricum.
involu'crata. 3. Yellow. April. Hudson's
 Bay. 1824.
japo'nica. Red, white. July. China and
 Japan. 1806. Syn., *Nintooa japonica*.
 — — *chime'nsis*. Yellow, red. China. 1869.
 Ref. Bot. t. 224. Syns., *L. brachypoda*
 and *L. fleuro'sa* of some gardens.
Kesseli'ngii. Red, white. Kamtschatka.
 1890.
Ledebo'u'rii. 3. Yellow, red. June. Cali-
 fornia. 1833.
longifo'ra. Snow-white, changing to golden-
 yellow. July. China. 1826. Syns.,
Caprifolium longiflorum, B. R. t. 1232,
 and *Nintooa longiflora*.
Maa'ckii. White. S. Manchuria and Japan.
 1884. Gfl. t. 1162.
macra'ntha. 15. Orange. July. Nepal.
 1807. Evergreen. Syn., *Caprifolium*
nepalense.
macrophy'la ru'bra. Brick-red. 1870.
Maximowiczii. 10. Red-violet. Amur. 1869.
 Gfl. t. 597.
micra'ntha. Pink becoming yellowish. Syn.,
L. tatarica, var. *micrantha*.
microphy'la. 4. Siberia. 1818.
minuti'folia. Hybrid between *L. macrantha*
 and *L. Xylosteum*. 1889.
mi'sera. Hybrid between *L. micrantha* and
L. Xylosteum. 1889.
ni'gra. 4. Pale yellow. April. Switzerland.
 1597.
 — — *campanifo'ra*. 4. Yellow. May. N.
 Amer.
no'tha and its many varieties are hybrids
 between *L. Ruprechtiana* and *L. tatar-*
ica.
oblongifo'lia. 3. White. April. N. Amer.
 1823.
orienta'lis. 16. Yellow. June. Iberia. 1825.
 — — *puni'tea*. Crimson. May. N. Amer. 1822.
parvifo'ra. 6. Purple. June. N. America.
 1776. Syns., *Caprifolium dioicum* and
C. parviflorum.
Pericly'mum. Red, yellow. Summer. Bri-
 tain. Eng. Bot. ed. 3, t. 642. Syn.,
Caprifolium Periclymenum.
permi'ta. Hybrid between *L. micrantha* and
L. tatarica. 1889.
propin'qua. Hybrid between *L. alpigena* and
L. Ledebourii. 1889.
pube'scens. See *L. hirsuta*.
puni'tea. 2-4. Deep red. 1825. B. M. t. 246.
 Syn., *Symphoricarpos puniceus*.
pyrene'ica. 4. White. Pyrenees. 1739.
quinquelocula'ris. Yellowish. Himalayas.
 1889.
Ruprechtia'na. Pale yellow. Amur River.
 1870. Gfl. t. 645.
saticifo'lia. Hybrid between *L. micrantha*
 and *L. Ruprechtiana*.
segrezie'nsis. This is the proper name for
 many plants that have been grown as
L. diversifolia and *L. hispida*.
sple'ndida. Pale yellow to white. Spain.
 Gfl. 1890, p. 66, fig. 13. Syn., *Capri-*
folium splendidum.
sempervi'rens. Scarlet, yellow. Spring. N.
 America. 1656. B. M. t. 781. Evergreen.
 Syn., *Caprifolium sempervirens*

- L. sempervirens* major.
 — *minor*. Scarlet. B. M. t. 1753. Syn., *Caprifolium sempervirens*, var. *minor*.
 — *Standishii*. White, purple. China. 1860. G. C. 1878, ix, p. 106, fig. 20.
 — *stipulata*. White or cream. Darjeeling. G. C. 1858, p. 700.
 — *tanguitica*. Yellow. Kansu. 1891.
 — *tatarica*. 10. Pink. April. Russia. 1752. B. R. t. 31.
 — *albiflora*. 10. White. May. Pyrenees. 1739.
 — *grandibractea*ta. Seedling variety. 1891.
 — *latifolia*. 10. Pink. April.
 — *lutea*. 10. Yellow. April.
 — *rubriflora*. 10. Red. April. Russia. 1752.
 — *tomentella*. 10. Pinkish-white. July. Sikkim Himalaya. 1849. B. M. t. 6486.
 — *translucens*. Yellow. Himalayas. 1889.
 — *villosa*. 4. Yellow. April. Canada. 1820.
 — *Webbia*na. Yellowish-green, brownish-red. Himalayas. Gf. 1838, p. 7, fig. 2. *L. flavescens* has sometimes been grown under this name.
 — *Xylosteum*. 8. Yellow. June. England. Eng. Bot. ed. 3. t. 643. Syn., *Xylosteum dumetorum*.
 — *leucocarpum*. 8. Yellow. June. Britain.
 — *melanocarpum*. 8. Yellow. June. Britain.
 — *xanthocarpum*. 8. Yellow. June. Britain.

Looking-glass Plant. *Heritiera*.

Loosestrife. *Lysimachia* and *Lythrum*.

Lopezia. (Named after J. Lopez, Spanish botanist. Nat. ord., *Onagraceae*. Allied to *Fuchsia*. Syn., *Jehlia*.)

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. They may, however, be sown in the open border in April; light soil.

- L. cordata*. 1½. Purple. August. 1821.
 — *coronata*. 1½. Red. August. 1805. Andr. Rep. t. 551.
 — *Galeottii*. Red. S. Mexico.
 — *grandiflora*. 3. Bright-red. Mexico. 1879. Rev. Hort. 1879, p. 50.
 — *hirsuta*. 1½. Red. August. 1796. Rev. Hort. 1877, p. 190.
 — *lineata*. 3. Rose. February. 1839. B. R. 1840, t. 40.
 — *macrophylla*. Red. March. Mexico. B. M. t. 4724. Syn., *Jehlia fuchsoides*.
 — *mexicana*. Pink. Mexico. Jacq. Ic. t. 203.
 — *puberula*. ½. Red. August. 1824.
 — *racemosa*. 1½. Red. August. 1792.

Lophanthus. (From *lophos*, a crest, and *anthos*, a flower; referring to the middle lobe of the flower. Nat. ord., *Labiatae*; Tribe, *Nepeteae*. Allied to *Nepeta*.)

Hardy herbaceous perennials, from North America, except *L. chinensis*. 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. anisatus*. 3. Blue. July. 1826. B. R. t. 1282. Syns., *Hyssopus anisatus* and *H. discolor*.
 — *chinensis*. 1-1½. Blue-purple. Siberia and N. China. Syn., *Hyssopus Lophanthus*. Jacq. H. Vind. t. 182.

- L. nepetoides*. 5. Yellow, white. July. 1692. Syn., *Hyssopus nepetoides*, Jacq. H. Vind. t. 69.
 — *scrophulariaefolius*. 5. Pink. July. 1800. Syn., *Hyssopus scrophulariaefolius*.
 — *urticaefolius*. 2. Blue. July. 1826.

Lophi'ola. (A diminutive of *lophos*, a crest; referring to the crested sepals, or flower-leaves. Nat. ord., *Hæmodoraceae*; Tribe, *Conostyleae*. Allied to *Anigozanthus*.)

Hardy herbaceous perennial. Division of the roots in autumn or spring; peaty soil, in a damp, shady situation.

- L. aurea*. 1½. Yellow. June. N. Amer. 1811. B. M. t. 1596.

Lophi'ra. (From *lophos*, a crest; referring to two of the sepals finally expanding into crested wings. Nat. ord., *Dipterocarpeae*.)

This is the Scrubby Oak of Sierra Leone, a handsome tree, with paniced 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 fibry peat. Summer temp., 60° to 90°; winter, 50° to 60°.

- L. alata*. 10. Yellow. June. Sierra Leone. 1822. Syn., *L. africana*.

Lophole'pis. (From *lophos*, a crest, and *lépis*, a scale. Nat. ord., *Filices—Polypodiaceae*.) A section of **Polypodium**.

Stove ferns. See FERNS.

- L. piloselloides*. ½. W. Indies.

Lophos'ria. (From *lophos*, a crest, and *soros*, a heap; alluding to the sori. Nat. ord., *Filices—Polypodiaceae*.) A synonym of **Alsophila**.

Stove fern. See FERNS.

- L. pruinata*. 8. Tropical America.

Lophosp'ermum. (From *lophos*, a crest, and *sperma*, a seed; the seeds are furnished with a crested wing. Nat. ord., *Scrophulariaceae*; Tribe, *Antirrhineae*.) A synonym of **Maurandia**.

- L. atro-sanguineum*. See *Rhodochiton volubile*.
 — *erubescens*. B. R. t. 1381. See *Maurandia erubescens*.
 — *Rhodochiton*. See *Rhodochiton volubile*.
 — *scandens* of B. M. t. 3037-8 see *Maurandia erubescens*; of B. M. t. 3650 see *Maurandia scandens*.

Lophyrus. One species of this genus, *L. pinii*, causes much damage by its caterpillars feeding on the leaves of young Scotch Firs. The insects appear in the early summer, deposit their eggs in a slit they make in the leaves of the Scotch Fir and cover them with resinous matter. The caterpillars, which are green when young, and rusty brown when fully grown, appear in about three weeks, and attain a length of about an inch. After feeding for a few weeks,

they make their cocoons in the moss or decaying matter beneath the trees. The caterpillars lie doubled up in these cocoons, which are about a quarter of an inch long, and with a very firm exterior, and vary in colour, according to their surroundings. The surest way of destroying this insect is to take advantage of the fact that the cocoons are deposited in the débris beneath the trees, and to collect and burn this. In some cases two broods of flies have been observed in one year, viz., in April and July.

The caterpillars of *Lophyrus rufus* have also been known to damage Scotch Firs. They are greenish, with black heads and yellow-green beneath. The flies appear in August, the females are reddish, the males black, with red beneath.

Lopimia. (From *lopimos*, easily stripped of its bark; alluding to the bark being made into cordage. Nat. ord., *Malvaceæ*.) See **Pavonia**.
L. malacophylla. B. M. t. 4365. See *Pavonia velutina*.

Loquat, or Japan Quince. (*Photinia japonica*.) 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, systemized 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, *Rosaceæ*, in addition to which, individuals of the genera *Pyrus*, *Amelanchier*, *Mespilus*, and even the *Photinia serrulata*, 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 *loron*, a throng; referring to the knotty branches. Nat. ord., *Loranthææ*; Tribe, *Euloranthææ*.)

Evergreen shrubs. For culture, see **NUYTSIA**.
L. flavidus. Yellowish. New Zealand. 1885.
— *floribundus*. See *Nuytsia floribunda*.

Lord Anson's Pea. *Lathyrus magellanicus*.

Lord Harrington's Yew. *Cephalotaxus pedunculata*.

Lords and Ladies. *Arum maculatum*.

Lore'ya. (Named after *M. Lorey*, a botanist, author of the Flora of Burgundy. Nat. ord., *Melastomaceæ*; Tribe, *Miconiææ*. 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 fibry loam, and pieces of charcoal and broken freestone. Summer temp., 60° to 85°; winter, 50° to 55°.

L. arbore'scens. 30. White. July. Guiana. 1822.

Lorinse'ria. (In honour of *Dr. Lorinser*, a German author. Nat. ord., *Filices—Polypodiaceæ*.) A synonym of **Woodwardia**.

Greenhouse fern. See **FERNS**.
L. areolata. 1½. N. America.

Lorope'talum. (From *loron*, a thong, and *petalon*, a petal; in allusion to the long thong-like petals. Nat. ord., *Hamamelidaceæ*. Allied to *Hamamelis*.)

A very ornamental, free-flowering, hardy shrub. Seeds and cuttings. Rich light soil.
L. chinense. 4. White. Autumn. China. 1830. G. C. 1833, xix. p. 152, fig. 23.

Lote. *Zizyphus lotus*.

Lo'tus. Bird's-foot Trefoil. (From the *lotus* of Theophrastus, which is *Zizyphus lotus*. Nat. ord., *Leguminosæ*; Tribe, *Loteæ*. Allied to *Dorycnium*.)

Annuals, by seed at the beginning of April; a very few require the assistance of a gentle hot-bed, and transplanting afterwards; herbaceous and semi-shrubby, low-trailing plants, by division, and cuttings in summer under a handlight, 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 handlight or frame; light, sandy soil for all.

STOVE ANNUAL.

L. indicus. 1. July. E. Ind. 1793.

GREENHOUSE HERBACEOUS PERENNIALS.

L. argenteus. ½. June. 1827.

— *angustifolius*. ½. July. 1827.

— *australis*. Pink. July. N. Holland. 1800. Andr. Rep. t. 624. Syn., *L. albidus*. B. C. t. 1063.

— *glau'cus*. 1. June. Madeira. 1777.

— *microphyllus*. Rose. July. South Africa. B. M. t. 2808. Annual?

— *sessifolius*. 1. July. Teneriffe. 1820.

GREENHOUSE EVERGREENS.

- L. anthyllodes*. ½. Dark purple. June. Cape of Good Hope. 1812.
- *a'tro-purpureus*. 1. Dark brown. Teneriffe. 1820.
- *creticus*. 1½. June. Levant. 1880.
- *Gebé'tia*. 1. May. Aleppo. 1816.
- *jacobæus*. 2. Dark brown. July. Cape Verde Islands. 1714. B. M. t. 79.
- *lu'teus*. 2. July.
- *peliorhynchus*. Scarlet. May. Teneriffe. 1881. B. M. t. 6733.
- *spectabilis*. 2. Teneriffe.

HARDY ANNUALS.

- L. angustissimus*. 1. May. Britain.
- *arabicus*. ½. Pink. July. Arabia. 1773. Jacq. H. Vind. t. 155.
- *arenarius*. ¾. April. Teneriffe. 1831. B. R. t. 1488.
- *bistulifolius*. ½. Yellow. July. Barbary. 1818. Syn., *Tetragonolobus biflorus*.
- *ciliatus*. ½. July. Sicily. 1812.
- *coimbricensis*. ½. White, red. June. Portugal. 1800.
- *cytisoides*. 1. June. South Europe. 1752.
- *decumbens*. ¾. July. Europe. 1816.
- *Dioscorides*. 1. June. Nice. 1658.
- *edulis*. ½. July. Italy. 1759.
- *glaberrimus*. ½. White. July. South Europe. 1816.
- *gracilis*. 1. July. Hungary. 1812.
- *odora*. 1½. June. Barbary. 1804. B. M. t. 1233.
- *peregrinus*. ½. July. South Europe. 1713.
- *pustulatus*. ½. July. South Europe. 1816.
- *Tetragonolobus*. 1. Dark-purple. July. Sicily. 1769. B. M. t. 151. Syn., *Tetragonolobus purpureus*.

HARDY HERBACEOUS PERENNIALS.

- L. conjugatus*. See *L. Requienii*.
- *corniculatus*. 1½. June. Britain. Eng. Bot. ed. 3, t. 368.
- *alpinus*. ½. June. Switzerland. 1819.
- *flöre-pléno*. ½. July. Gardens.
- *crassifolius*. ¾. August. South Europe. 1812.
- *depressus*. July. Hungary. 1819.
- *flexuosus*. ¾. July. Europe. 1816.
- *Forsteri*. ½. July. Britain.
- *hirsutus*. B. M. t. 336. A synonym of *Dorycnium hirsutum*.
- *major*. 1½. June. Britain. Eng. Bot. ed. 3, t. 370.
- *villosus*. ½. June. Switzerland. 1817.
- *maritimus*. See *L. siliquosus*.
- *palmistris*. ¾. June. Crete. 1821.
- *pedunculatus*. A synonym of *L. uliginosus*.
- *pinnatus*. B. M. t. 2913. See *Hosackia bicolor*.
- *portosannetanus*. July. Porto Santo. 1739. Evergreen shrub.
- *Requienii*. Yellow. July. Sardinia. 1837. Syns., *L. conjugatus*, *Tetragonolobus conjugatus* and *T. Requienii*.
- *siliquosus*. ½. Yellow. July. South Europe. 1836. Syns., *L. maritimus*, *Tetragonolobus maritimus* and *T. siliquosus*.
- *suaveolens*. ¾. July. South France. 1816.
- *tenisifolius*. A synonym of *L. tenuis*.
- *tenuis*. 1. July. Hungary. 1816. Eng. Bot. ed. 3, t. 369.
- *uliginosus*. June. Europe. 1836. Syn., *L. pedunculatus*.

Lotus, Sacred. *Nelumbium*.

Lotus-tree. *Diospyros Lotus*.

Lou'rea. (After Prof. Loureiro, of

Lisbon. Nat. ord., *Leguminosæ*; Tribe, *Hedysaræe*.)

Stove herb. Rich sandy loam and peat. Seeds. *L. vespertilionis*. Purplish. Ceylon. Syn., *Hedysarum vespertilionis*. Jacq. Ic. t. 566.

Lourya. (After M. Loury. Nat. ord., *Liliacæ*; Tribe, *Aspidistree*.)

For culture, see ASPIDISTRA.
L. campanulata. Pale yellow. Cochinchina. 1839.
— *paniculata*. Cambodia. 1888. Rev. Hort. 1889, p. 128.

Louse. See **Aphis**.

Lousewort. *Pedicularis*.

Love-apple, or Tomato. *Lycopersicon esculentum*.

Varieties.—Of the *Red*—Conference Early Red, The Peach, Hathaway's Excelsior, Surpasse, Will's Prolific. Of the *Yellow*—Yellow King, Greengage, etc.

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 hot-house, 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; shade and water freely in every stage of their growth; for if, from the want of this, a due exposure to the light, or any other cause, they become weak, they seldom are productive. Plant out in the open air early in June; prepare them for this, until at length they can endure the temperature of the greenhouse, where they may be kept until finally moved. But, before that time arrives, another thinning will be requisite; those in the hotbed to six inches apart, and those in the stove, each plant separate into a tolerable-sized pot. They are to be finally planted five feet apart beneath a south paling or wall, to which their branches must be trained; for if allowed to trail on the ground the fruit scarcely ever ripens, and never is in perfection. 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 branches are a foot long, and continued throughout their growth. In case of a want of space of wall or paling, they may be trained with stakes as espaliers. 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. The seed must be separated from the pulp by washing, as directed for the Cucumber.

Love Grass. *Eragrostis*.

Love-in-a-mist. *Nigella Damascena*.

Love-in-idleness. *Viola tricolor*.

Love-lies-bleeding. *Amaranthus caudatus*.

Love-tree. *Cercis siliquastrum*.

Lowe'a. (Named after Rev. Mr. Lowe, travelling Bachelor of the University of Cambridge. Nat. ord., *Rosaceæ*; Tribe, *Roseæ*.) See **Rosa**.

L. berberidifolia. B. R. t. 1261. See *Rosa berberidifolia*. B. M. t. 7096.

Loxococcus. (From *loxos*, oblique, and *cokkos*, a berry; or oblique fruited. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

Stove palm. For cultivation, see ARECA.

L. rupicola. 30-40. Spadix and flowers blood-red. Ceylon. 1878. B. M. t. 6358.

Loxogramma. (From *loxos*, slanting, and *gramma*, writing; referring to the spore or seed-cases. Nat. ord., *Filices*.)

Stove fern. See FERNS.

L. lanceolata. Yellow. May. E. Ind.

Loxosma. (From *loxos*, oblique, and *soma*, a body; the sporangia are obliquely girt by an incomplete ring. Nat. ord., *Filices*—*Polypodiaceæ*.)

Greenhouse evergreen fern. See FERNS.

L. Cunninghamsi. 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., *Primulaceæ*; Tribe, *Lysimachieæ*.) See **Lysimachia**.

L. a'tro-purpurea. Swt. Fl. Gard. ser. 2, t. 34. See *Lysimachia nutans*.

— *spathulata*. See *Lysimachia lineariloba*.

Luca'nus cervvus. The Stag Beetle is easily distinguished by its highly developed jaws, which bear a certain amount of resemblance to the antlers of a stag. It is the largest of British beetles. The larvæ are found in decaying wood, rarely in healthy trees.

Lucu'lia. (From *luculi swa*, the native name. Nat. ord., *Rubiaceæ*; Tribe, *Cinchoneæ*.)

Greenhouse evergreen fragrant shrubs from India. 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 fibry, 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 conservatory wall.

L. gratissima. 9. Red. Temperate Himalayas. 1823. Swt. Fl. Gard. t. 145. B. M. t. 3946.

— *Pincana*. 5. White. Khasia Mts. 1843. B. M. t. 4132.

Lucu'ma. (The Peruvian name. Nat. ord., *Sapotaceæ*. Allied to *Sapota*.)

Stove evergreen trees, with white flowers. Cuttings of the ripe shoots in sand, under a bell-glass, and in heat; rich, fibry, sandy loam. Summer temp., 60° to 85°; winter, 50° to 55°.

L. Bonplandia. 40. Cuba. 1822.

— *deliciosa*. 30. Green. New Grenada. 1855.

— *mammosa*. 50. S. Amer. 1739. Le Jard. 1889, p. 271.

— *obovata*. 40. Pern. 1822.

— *sabicefolia*. 40. Mexico. 1823.

Lu'dia. (From *ludo*, to sport; referring to the various forms of leaf of *L. heterophylla*. Nat. ord., *Bixineæ*; Tribe, *Flacourtiææ*. 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; fibry loam, with a little peat, and dried cow-dung. Summer temp., 60° to 85°; winter, 50° to 55°.

L. heterophylla. 4. July. 1823. A synonym of *Aphioia mauritiana*.

— *sessiliflora*. 4. July. 1820. Syn., *L. tuberculata*. Jacq. H. Schoenb. t. 112.

Ludo'via. (In honour of *Louisa*, Queen of Charles IV., of Spain. Nat. ord., *Pandaneæ*.) See **Carludovica**.

L. funifera. See *Carludovica funifera*.
— lanceafolia. Fl. Ser. t. 1515-6. See *Carludovica lanceafolia*.
— latifolia. B. M. t. 2950-1. See *Carludovica latifolia*.

Lueddema'nnia. (After Herr *Lueddemann*. Nat. ord., *Orchidææ*; Tribe, *Vandææ—Cyrtopodiææ*.)

At the time of the publication of the *Genera Plantarum* this genus was imperfectly known, and in that work was referred to *CYCNOCHES*. Better material having since been obtained, its claim to rank as a distinct genus has been established.

Stove orchids. For culture, see *CYCNOCHES*.

L. Lehmanni. See *Cycnoches Lehmanni*.
— Pescatorei. 3. Yellow, reddish. July. New Grenada. 1848. B. M. t. 7123. Scent of decaying oranges. Syn., *Cycnoches Pescatorei*. Paxt. Fl. Gard. i. p. 123, and *Acineta glauca*.

Luhe'a. (Named after *Luhe*, a German botanist. Nat. ord., *Tiliacææ*. 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; fibry peat and sandy loam. Summer temp., 60° to 80°; winter, 48° to 55°.

L. caracasana. Caracas. 1847. Shrub.
— paniculata. 10. Rosy. April. Brazil. 1828. Climber.

Lui'sia. (Name not explained. Nat. ord., *Orchidææ*; Tribe, *Vandææ—Sarcantheææ*. Allied to *Vanda*.)

Stove orchid. Detaching the side-shoots. Grow on a block of wood covered with moss, or elevated above a pot, with sphagnum, peat, crocks, etc. 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. alpina. See *Vanda alpina*.
— macratia. Yellowish-green, violet. Assam. 1869.
— microptera. Straw-yellow, purple. Assam. 1870.
— platygloussa. See *L. teretifolia*.
— Psyche. Green, purple. Burmah. 1865. B. M. t. 5553.
— teretifolia. Dull purple, white. Khasia. Syn., *L. platyglossa*, *L. trichorhiza*, and *Cymbidium triste*. B. M. t. 3648.

Lu'ma. See *Myrtus*.

Lumnitzera of Jacquin. (Named after *Lumnitzer*, a botanical author. Nat. ord., *Labiataææ*.) See **Ocimum**.

This must not be confounded with a *Combretaceæ* genus (not in cultivation), which is kept up.

L. tenuiflora. See *Ocimum sanctum*.

Luna'ria. Moonwort or Honesty. (From *luna*, the moon; referring to the shape of the seed-vessels. Nat. ord., *Cruciferaææ*; Tribe, *Alyssinææ*. Allied to *Alyssum*.)

Hardy plants, natives of Europe and W. Asia, and flowering in May; seeds and divisions in spring. Common garden-soil.

L. annua. 4. Light purple. 1570. Biennial. Syn., *L. biennis*. Rev. Hort. 1867, p. 30.
— albiflora. 3. White. 1570.
— redivi'na. 3. Light purple. 1596. Herbaceous perennial.

Lungwort. *Pulmona'ria*.

Lupina'ster. See **Trifolium**.

L. oblongifolius. See *Trifolium Lupinaster*, var. *purpurascens*.
— pentaphyllus. 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., *Leguminosææ*; Tribe, *Genisteææ*.)

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 *mutabilis* and *Cruikshankii* 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. albiifrons. 3. Blue. September. California. 1833. B. R. t. 1642.
— arbo'reus. 6. Yellow. July. 1793. B. M. t. 682.
— arbutus. 1½. Pale purple. July. California. 1826. Herbaceous. B. R. t. 1230.
— arvensis. 1½. Lilac. April. Peru. 1843. Biennial. B. R. 1844, t. 1.
— bimaculatus. Blue. September. Texas. 1835. Herbaceous. Swt. Fl. Gard. ser. 2, t. 814.
— canaliculatus. 4. Blue. July. Buenos Ayres. 1823. Swt. Fl. Gard. t. 283.
— Cruikshankii. 5. Variegated. July. Peru. 1829. B. M. t. 3056.
— inca'nus. Pale lilac. July. Buenos Ayres. 1830. B. M. t. 3283.
— mexicanus. 2. Blue. February. Mexico. 1819. Biennial.
— multiflorus. 4. Blue. July. Monte Video. 1810.
— mutabilis. 5. Blue, yellow. July. Bogota. 1819. Swt. Fl. Gard. t. 130, and ser. 2, t. 203.
— pulche'llus. 3. Blue, purple. July. Mexico. 1828. Swt. Fl. Gard. ser. 2, t. 67.
— tomentosus. 6. Pink, white. July. Peru. 1825. Swt. Fl. Gard. t. 261.
— versicolor. 2. Pink, blue. July. Mexico. 1825. B. R. t. 1979.

HARDY ANNUALS.

L. affinis. 3. Deep blue. June. California. 1848.
— albus. 3. White. July. Levant. 1596.
— angustifolius. 2. Blue. July. Spain. 1686.
— Barke'ri. 3. Blue, pink. July. Mexico. 1839. B. R. 1839, t. 56.
— bicolor. 1. Pale blue. July. N. Amer. 1826. B. R. t. 1109.
— bracteolata. 1½. Blue. July. Monte Video. 1820.
— densiflorus. 3. White, pink. July. California. 1833. B. R. t. 1689.
— Ehrenbe'rgii. 3. Blue. June. Mexico. 1843. Biennial. B. R. 1847, t. 11.

- L. elegans*. 2. Violet, rose. June. Mexico. 1831. B. R. t. 1581.
 — *exaltatus*. 1832.
 — *Hartwegii*. 3. Blue, pink. July. Mexico. 1838. B. R. 1839, t. 31.
 — *hirsutissimus*. 1. Red. July. California. 1838.
 — *hirsutus*. 2. Blue. July. South Europe. 1629.
 — *leptocarpus*. 3. Purple. June. Mexico. 1839. Biennial.
 — *leptophyllus*. 2. Blue, lilac. July. California. 1833. B. R. t. 1670.
 — *linifolius*. 2. Blue. July. Monte Video. 1799.
 — *luticus*. 2. Yellow. July. Sicily. 1596. B. M. t. 140.
 — *Menziesii*. Yellow. California. 1857.
 — *micranthus*. 1. Purple, blue. May. N. Amer. 1826. B. R. t. 1251.
 — *microcarpus*. 1. Blue. April. Chili. 1821. B. M. t. 2413.
 — *nanus*. 1. Blue. July. California. 1833. B. R. t. 1705.
 — *pilosus*. 3. Flesh. July. South Europe. 1710. Sibth. Fl. Gr. t. 684.
 — *pubescens*. 2. Violet, blue. June. Quito. 1844. Biennial.
 — *pusillus*. 1. Pale blue. July. N. Amer. 1817.
 — *ramosissimus*. 3. Crimson, blue. Chimborazo. B. R. 1845, t. 25.
 — *Ternisii*. 3. White. June. Egypt. 1802.
 — *texensis*. 1. Blue. June. Texas. B. M. t. 3492.
 — *varius*. 3. Blue, white. July. South Europe. 1596.

HARDY PERENNIALS.

- L. argenteus*. White. June. N. Amer. 1826.
 — *aridus*. 1. Purple, blue. August. N. Amer. 1827. B. R. t. 1242.
 — *grandifolius*. 4. Purple. July. N. Amer. 1834. B. R. t. 1891.
 — *latifolius*. 4. Blue. July. California. 1834. B. R. t. 1891.
 — *laxiflorus*. 1. Blue, pink. Columbia. 1826. B. R. t. 1140.
 — *lepidus*. 1. Blue, pink. August. Columbia. 1826. B. R. t. 1149.
 — *leucophyllus*. 2. Pink. July. N. Amer. 1826. B. R. t. 1124.
 — *litorea*. 1. Blue, pink. July. Columbia. 1826. B. M. t. 2952.
 — *lutidus*. 2. Purple. July. N. Amer. 1834. Swt. Fl. Gard. ser. 2, t. 356.
 — *macrophyllus*. 4. Blue. July. California. 1834. Swt. Fl. Gard. ser. 2, t. 356.
 — *Marshallianus*. Blue, white. Hybrid. Swt. Fl. Gard. ser. 2, t. 139.
 — *Moritzianus*. 2. Blue. July. California. 1826. B. M. t. 1311.
 — *nootkanensis*. 2. Purple. July. Nootka Sound. 1794. B. M. t. 1311.
 — *ornatus*. 2. Blue, pink. May. Columbia. 1826. B. R. t. 1216.
 — *perennis*. 2. Blue. June. N. Amer. 1658. B. M. t. 202.
 — *plumosus*. 3. Blue. June. California. 1820. B. R. t. 1217.
 — *polyphyllus*. 4. Blue. June. Columbia. 1826. B. R. t. 1096.
 — *albiflorus*. 4. White. July. Columbia. 1826. B. R. t. 1377.
 — *rivularis*. 3. White, purple. April. California. 1831.
 — *Sabinianus*. 3. Yellow. N. Amer. 1827. B. R. t. 1435.
 — *sericeus*. 1. Purple. May. N. Amer. 1826.
 — *subcarneus*. 1. Blue, white. July. Texas. 1835. B. M. t. 3467.
 — *tristis*. 4. Pale brown. July. N. Amer. 1826.
 — *villosus*. 1. Pink. July. Carolina. 1787.

Luvunga, its Sanskrit name, is a genus founded on *Limonia scandens*, and contains no other species.

Luxemburgia. (Named after the Duke of Luxembourg. Nat. ord., *Ochnaceae*; Tribe, *Luxemburgiæ*.)

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. citiboa*. 4. June. 1841. Ic. Pl. t. 516.
 — *corymbosa*. 5. May.

Luzuriaga. (Dedicated to Ignatia Maria Ruiz de Luzuriaga, a Professor of Medicine and Botany. Nat. ord., *Liliaceae*; Tribe, *Luzuriageae*. Syn., *Callixene*.)

Ornamental evergreen climbing greenhouse shrubs, suitable for covering the walls of greenhouses, etc. For cultivation, see PHILEA.

- L. erecta*. 1-1½. Pure white. South Chili. Syn., *Callixene polyphylla*. B. M. t. 5192.

— *marginalis*. White, scented like heliotrope. Terra del Fuego. Syn., *Callixene marginalis*.

- *radicans*. 3. White. Summer. 1878. B. M. t. 6465. The stems are used for rope-making. May be planted out in the south of England.

Lycaeste. (Named after the beautiful daughter of Priam. Nat. ord., *Orchidaceae*; Tribe, *Vandee*—*Cyrtopodieae*. Allied to *Maxillaria*. Syns., *Colax* and *Paphinia*.)

Stove orchids. Division of the plant, as growth is commencing; open baskets, in sphagnum, fibry peat, and pieces of charcoal. Summer temp., 60° to 90°; winter, 50° to 60°.

- L. aromatica*. Orange. May. Mexico. 1828. Syn., *Maxillaria aromatica*. B. R. t. 1871.

- *retusa*. 1. Yellow. May. Brazil.
 — *Barringtoniae*. Yellow, brown. April. Jamaica. 1790. Syn., *Maxillaria citata*. B. R. t. 1206.

- *grandiflora*. White. W. Indies. 1868. B. M. t. 5706.

- *brevispitha*. Green. Guatemala. 1852.
 — *chrysoptera*. Orange, yellow. June. Mexico. 1850.

- *citata*. July. Brazil. 1838.
 — *cochleata*. Orange. May.

- *Colleyi*. Brown. July. Demerara. 1836.
 — *costata*. Peru. 1842. Gd. t. 1141.

- *crinita*. 1. Yellow, brown. March. Guatemala. 1840.

- *cristata*. White, purple. July. Trinidad. 1843. Syns., *Maxillaria cristata*, B. R. 1811, and *Paphinia cristata*.

- *Modigliana*. Whitish. Brazil. 1888. Syn., *Paphinia cristata*, var. *Modigliana*. Lind. t. 117.

- *cruenta*. 1. Orange, crimson. March. Guatemala. 1841. Syn., *Maxillaria cruenta*, B. R. 1842, t. 13.

- *Denningiana*. Whitish-green, reddish-brown. S. America. 1877.

- *Deppii*. 1. Yellow, brown. June. Xalapa. 1828.

- *punctatissima*. Much spotted.

- *Downiana*. Brown, yellowish-white. August. Costa Rica. 1874.

- *fulvescens*. 2. Brown, orange. Columbia. B. M. t. 4193.

- *gigantea*. 2. Greenish. August. Guayaquil. 1848. B. M. t. 5616.

- L. grandis*. 3. Reddish-purple, barred with creamy-yellow. October. Brazil. Syn., *Paphinia grandis*. Warn. Orch. Alb. t. 145.
- *Harrisonia*. 1½. Cream, purple. Brazil. 1838.
- *a'iba*. 1½. White. August. Brazil. 1840.
- *Jamesia* na. White, magenta. 1889. A form of *L. Skinneri*.
- *jugo'sus*. White, purple. Brazil. 1867. B. M. t. 5661. Syn., *Colax jugosus*. There are two varieties, *punctatus* and *rufinus*.
- *la'nipes*. Purple, green. Guayaquil. 1848. Sometimes confused with *L. Barringtonia*.
- *lasioglossa*. 1. Olive-green, yellow. Guatemala. 1872. B. M. t. 6251.
- *leuca'ntha*. White, green. Central America. 1860.
- *Lindeniana*. White, chocolate-red. S. America. Syn., *Paphinia Lindeniana*. Lind. t. 106.
- *linguella*. Greenish-white. January. Peru. 1871. B. M. t. 6303.
- *locu'sta*. Green. Peru. 1879.
- *macrobulbon*. Yellow, crimson. Santa Martha. 1846.
- *macrophylla*. Green, brown, white. December. Mexico. 1837.
- *macro-pogon*. Orange. Costa Rica. 1838.
- *mesochlæna*. Green. Brazil. 1853.
- *pla'na*. Greenish. October. Bolivia. 1841.
- *Measuresia* na. White, with rose purple spots. Bolivia. 1887. Warn. Och. Alb. t. 306.
- *Puydtii*. ½. Green, violet-brown, violet. Brazil. 1880. Syn., *Colax Puydtii*.
- *rugosa*. Yellow, purple. Columbia. Syn., *Paphinia rugosa*.
- *Kalbre'yeri*. Yellowish, brownish-purple. Columbia. 1880. Syn., *Paphinia rugosa*, var. *Kalbreyeri*.
- *Sanderiana*. Yellow, brown, white, purple. Columbia. 1879. Syn., *Paphinia rugosa*, var. *Sanderiana*.
- *Schillera* na *Lehmanni*. Petals with red dots on the outside; lip marked with rosy-carmine. Columbia. 1890. Gf. t. 1321.
- *Skinneri*. 1. White, crimson. October. Guatemala. 1842.
- *a'iba*. White. October. Guatemala. 1841.
- *armeni'aca*. Lip apricot-yellow. Rehb. ser. 2, t. 18.
- *delicati'ssima*. Very pale pink; lip white, rosy. February. Warn. Sel. Orch. t. 10.
- *glorio'sa*. Pink, rose, white. Guatemala.
- *pictura* ta. Rosy; lip white, with crimson base. Warn. Sel. Orch. t. 10.
- *purpura* ta. Whitish; lip crimson-purple. Warn. Sel. Orch. t. 10.
- *regi'nae*. Rose; lip very dark crimson. 1890. Warn. Orch. Alb. t. 283.
- *ro'sea*. Dark rose; lip white with crimson spots. Guatemala.
- *super'ba*. Whitish; lip rich crimson. Guatemala.
- *virgini'is*. Snow white; lip white, base pale lemon. Guatemala.
- *Smea* na. White; lip white purple. 1833. Probably a hybrid between *L. Deppii* and *L. Skinneri*.
- *sulphu'rea*. Sulphur, red, purple. 1832.
- *tetra'gona*. ½. Greenish. Brazil. 1842. Syn., *Maillaria tetragona*. B. M. t. 3146.
- *tricolor*. Pink. April. Guatemala. 1852.
- *tyrianthi'na*. Bright violet. July. Brazil. 1836.
- *Wittgii*. White, purple, violet, brown. Rio Janeiro. 1878.

L. xytrio'phora. Brown, yellowish, purplish. Ecuador. 1868.

Lychnis. (From *lychnos*, a lamp; referring to the brilliancy of the flowers. Nat. ord., *Caryophyllaceæ*; Tribe, *Sileneæ*. Syns., *Agrostemma*, *Eudianthe Githago*, and *Viscaria*.)

The hardy herbaceous species are chiefly cultivated; seeds, divisions, and cuttings of the young shoots under a hand-light 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. *Grandiflora* 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*. 1½. Red. July. China. 1770. Greenhouse herbaceous. B. C. t. 1433. Syn., *L. grandiflora*, Jacq. Ic. t. 84.
- *muta'bilis*. Pink. June. Andes. 1844. Stove evergreen.

HARDY ANNUALS.

- L. cœli-ro'sa*. 1. Flesh. July. Levant. 1713. Syn., *Eudianthe cœli-rosa*.
- *nicee'nsis*. 3. White, red. June. Nice. 1796.

HARDY HERBACEOUS.

- L. alpi'na*. ½. Pink. April. Scotland. Eng. Bot. ed. 3, t. 214.
- *ape'tala*. 1½. White. June. Lapland. 1810. Syn., *Wahibergella apetalata*.
- *pauciflo'ra*. White, June. Siberia. 1817. Syn., *L. brachypetalata*.
- *Bungea* na. 1. Scarlet. July. Russia. 1834. B. R. t. 1864. Syn., *Agrostemma Bungeana*.
- *chalcedo'nica*. 2. Scarlet. June. Russia. 1596.
- *a'iba*. 2. White. June. Russia.
- *fl'ore-ulo'ple'no*. 2. White. June. Gardens.
- *fl'ore-ple'no*. Scarlet. June. Russia.
- *corona'ria*. 3. Red. July. Italy. 1596.
- *a'iba*. 3. White. July.
- *ple'na*. 1½. Red. July.
- *ru'bra*. Red. July.
- *cor'sica*. ½. Red. June. Corsica. 1818. Syn., *Eudianthe corsica*.
- *div'erna*. 2. Purple. June. Britain.
- *ple'na*. 1. Purple. June. Britain.
- *fl'o's-cu'culi*. 1½. Pink. July. Britain. Eng. Bot. ed. 3, t. 212.
- *albiflo'ra*. 1½. White. July. Britain.
- *ple'na*. 1. Pink. July.
- *fl'o's-Jo'vis*. 1½. Red. July. Germany. 1726. Syn., *Agrostemma fl'o's-Jovis*.
- *fulgens*. 1½. Scarlet. June. Siberia. 1822. Syn., *L. Sieboldii*.
- *Haagea* na. Scarlet. Gf. t. 391.
- *helve'tica*. ½. Red. July. Switzerland. 1814.
- *le'ta*. ½. Flesh. Portugal. 1778.
- *Laga'sce*. ½. Rose-pink. May. Pyrenees. 1867.
- *negle'cta*. ½. White. June.
- *pyrena'ica*. ½. White. June. Pyrenees. 1819. B. M. t. 3269. Syn., *Agrostemma pyrenaica*.
- *Se'mo*. Crimson. Japan. Hardy perennial.
- *sibi'rica*. ½. White. June. Siberia. 1817.
- *Siebo'dii*. Fl. Ser. t. 980. See *L. fulgens*.
- *specio'sa*. Salmon-scarlet. Japan. 1871.
- *vesper'ti'na*. 2. White. June. Britain.
- *mu'l'tiple'x*. White. June.
- *ple'na*. Double flowered.
- *ro'sea*. White, red. June. Britain.

L. viscaria. 1. Pink. May. Britain. Eng. Bot. ed. 3, t. 213.
— *pl'na*. 1. Red. May. Britain.

Lyciople'sium. (From *Lycium*, and *plesios*, near to; resembling *Lycium*. Nat. ord., *Solanaceæ*; Tribe, *Solanecæ*.)
A synonym of **Acnistus**.

L. pubisto'rum. B. M. t. 5373. See *Latua venenosa*.

Lycium. Box Thorn. (From *Lycium*, an ancient name of a district in Asia Minor. Nat. ord., *Solanaceæ*; Tribe, *Atropceæ*. Allied to *Mandragora*.)

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 *vulga're* and its congeners are thus well-fitted for covering arbours, unsightly walls, etc.; *a'frum* does well on a conservatory wall, and its fruit is pretty, and it blooms very freely.

EVERGREENS.

L. carolinia'num. 4. Blue. July. Carolina. 1806. Hardy shrub.
— *cin'e'reum*. 5. Violet. June. Cape of Good Hope. 1818. Greenhouse shrub.
— *ho'rridum*. 3. White. July. Cape of Good Hope. 1791. Greenhouse shrub.
— *te'nu'e*. 4. Violet. June. Cape of Good Hope. 1819. Greenhouse shrub.

DECIDUOUS CLIMBERS.

L. a'frum. 10. Violet. June. Cape of Good Hope. 1712. African Tea Tree.
— *ba'rbarum*. 12. Violet. June. Barbary. 1696. Eng. Bot. ed. 3, t. 933.
— *chi'ne'se*. 6. Purple. July. China. Syns., *L. barba'rum*, var. *chinense*, and *L. Trewiana'rum*.
— *europa'e'um*. See *L. vulga're*.
— *fuchsioi'des*. B. M. t. 4149. See *Iochroma fuchsioides*.
— *gesneroi'des*. See *Iochroma gesneroides*.
— *japo'nicum*. B. M. t. 361. See *Serissa foetida*.
— *lanceola'tum*. 12. Pink. June. South Europe.
— *microphy'llum*. 4. Violet. June. Cape of Good Hope. 1795.
— *pa'llidum*. 3. Green or purplish. Berries bright red. New Mexico. 1888. G. and F. 1888, i. p. 340, fig. 54.
— *ri'gidum*. 4. Violet. April. Cape of Good Hope. 1795. Shrub.
— *ruth'e'nicum*. 6. White. Siberia. 1804.
— *ca'spicum*. July. Caspian Sea.
— *Sha'wi'i*. 8. Pink. July. Cape of Good Hope. 1700. Greenhouse climber.
— *subglobo'sum*. Pale violet.
— *tetra'ndrum*. 4. Violet. June. Cape of Good Hope. 1810.
— *Trewia'num*. See *L. chinense*.
— *turbina'tum*. 12. Violet. June. China. 1709.
— *vulga're*. 12. Pink. June. South Europe. 1730. Syn., *L. europa'eum*, Sibth. Fl. Gr. t. 236. Matrimony Vine.
— *chrysoca'rpum*. 12. May.
— *sphaeroca'rpum*. 12. May.

Lycocom'rium. (Derivation uncertain. Nat. ord., *Orchideæ*; Tribe, *Vandææ*—*Cyrtopodiææ*.)

Stove orchids. For culture, see PERISTERIA.
L. ceri'num. 1. Yellow. June. Central America. 1835. Syn., *Peristeria cerina*, B. R. t. 1953.
— *gutta'ta*. $\frac{1}{2}$. Yellow, purple. August. South

America. 1837. Syn., *Peristeria guttata*, Kn. and West. t. 70.

Lycop'e'rdon. A genus of fungi of the order *Gasteromycetes*, popularly known as Puff-balls, on account of the manner in which the spores are discharged, when ripe. *L. giga'ntium* is edible before the spores are formed, while the interior is still white and fleshy, and is much esteemed by some. It sometimes attains a diameter of two feet.

Lycop'e'sicum. Love-apple, or Tomato. (From *lykos*, a wolf, and *persicon*, a peach. Nat. ord., *Solanaceæ*.)
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; *escule'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 and stopped above the fruit. To have the fruit is the object.

L. cerasi'forme. 3. Green. July. 1800. Syn., *Solanum pseudo-lycopersicum*, Jacq. Vind. t. 11.
— *tu'teum*. 3. Green. July. 1596.
— *commuta'tum*. See *L. peruvia'num*.
— *escule'ntum*. 3. Green. July. 1596. Gfl. 1886, p. 216.
— *chrysoca'rpum*. 3. Green. July. 1596.
— *erythroca'rpum*. 3. Green. July. 1596.
— *leucoca'rpum*. 3. Green. July. 1596.
— *Humbo'ldtii*. 3. Yellow. August. 1822.
— *peruvia'num*. 3. Yellow. May. 1823. Stove herbaceous. Syns., *L. commuta'tum* and *Solanum peruvia'num*, Jacq. Ic. t. 327.
— *proci'mbens*. 1. Cream. July. 1700.
— *pyri'forme*. 3. Yellow. August. 1823.

Lycopo'dium. Club Moss. (From *lykos*, a wolf, and *pos*, a foot; the roots having a resemblance to that animal's paw. Nat. ord., *Lycopodiææ*.)

These flourish best in a greenhouse or cool fernery. They may be grown in pots, but do best as a carpet over the surface of the beds or borders. They are easily propagated by cuttings in the spring. *L. apo'dium*, *apoth'e'cium*, *circina'tum*, *corda'tum*, *ca'sium*, *denticula'tum*, *lepidophy'llum*, *stoloni'ferum*, and *umbro'sum* may be propagated by division at the same season. They require a plentiful supply of moisture, and a turfy loam for their soil, though they will grow in any light loam. *L. ca'sium* and *helveticum* turn brown if exposed to much light.

L. alois'o'lium. E. Indies. Hook. Ic. Fil. t. 223.
— *alpi'num*. $\frac{1}{2}$. Britain.
— *annoti'num*. $\frac{1}{2}$. Britain.
— *apo'dium*. $\frac{1}{2}$. N. Amer. 1819.
— *brazill'e'nae*. $\frac{1}{2}$. Brazil.
— *ca'sium*. $\frac{1}{2}$. China. 1845.
— *arbo'reum*.
— *circina'tum*. $\frac{1}{2}$. E. Ind. 1831.
— *clava'tum*. $\frac{1}{2}$. Britain.
— *corda'tum*. 1. 1838.
— *cra'ssum*. $\frac{1}{2}$. Peru.
— *denticula'tum*. $\frac{1}{2}$. Switzerland. 1779.
— *dicho'tomum*. W. Indies. Gfl. t. 1067.
— *fabula're*.
— *Galeo'tti*.
— *gnidioi'des*. 1. Cape of Good Hope.
— *inunda'tum*. $\frac{1}{2}$. Britain.

- L. lepidophyllum*. This is very small, very rare, and requires stove heat.
- *lucidulum*. ½. N. America.
 - *mandiocaenum*. Mexico. 1871.
 - *nummularifolium*. 3. Java.
 - *peruviaenum*. Peru. B. M. t. 2814.
 - *phlegmaria*. 3. E. India.
 - *plumosum*. ½.
 - *Scho'tii*.
 - *selaginoides*. ½. Britain.
 - *serratum*. 1. Japan.
 - *squarrosum*. India. 1881. Ill. Hort. t. 428.
 - *stoloniferum*. 1. Brazil. 1831.
 - *tacifolium*. 2. W. Indies.
 - *tetragoenum*. ½. Peru.
 - *tetrastichum*. Java. 1869.
 - *ulicifolium*. 2. E. Indies.
 - *varium*. 1. Tasmania.
 - *volubile*. 6. New Zealand.
 - *Willdenovii*.

Lycopsis. (Derivation uncertain. Nat. ord., *Boraginaceæ*.)

Hardy annual. For culture, see ANCHUSA.

- L. orientalis*. 2. Blue. July. South Europe. 1821. Syn., *Anchusa verrucosa*.

Lycoris. (The name of a woman in Roman history. Nat. ord., *Amaryllidaceæ*; Tribe, *Amaryllidaceæ*. Allied to *Valotta*.)

Hardy bulbs, from China. *Aurea* 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. *Radiata* is a shy bloomer. For culture, see AMARYLLIS.

- L. aurea*. 1. Yellow. August. 1777. Syn., *Amaryllis aurea*. B. M. t. 409.
- *radiata*. 1½. Pink. June. 1768. Syn., *Amaryllis radiata*. Andr. Rep. t. 25.
- *variegata*. See *L. Terracianii*.
- *sanguinea*. 1½. Carmine. Japan. 1888.
- *Sewerzowii*. Gf. t. 914. See *Ungeria trispheera*.
- *squamigera*. 3. Pale rose. China. G. and F. iii. p. 176, fig. 32. Syn., *Amaryllis Hallii*.
- *straminea*. Striped. June. 1847.
- *Terracianii*. Crimson, edged with white. 1889. Syn., *L. radiata*, var. *variegata*.

Lygodictyon. (From *Lygodium*, and *dictyon*, a net; its net-like veins distinguishing it from *Lygodium*. Nat. ord., *Filices—Polypodiaceæ*.)

Stove-climbing ferns. See FERNS.

- L. Forsteri*. South Sea Islands. G. C. 1882, xvii. p. 331. Syn., *Lygodium reticulatum*.

Lygodium. Snake's Tongue. (From *lygodes*, flexible; referring to the twining habit. Nat. ord., *Filices—Polypodiaceæ*.)

Stove-climbing ferns. See FERNS.

- L. articulatum*. Brown, yellow. May. New Zealand. 1844.
- *circinatum*. 6. Brown. August. E. Ind. 1823.
- *flexuosum*. Brown, yellow. May. E. Ind. 1834. Syn., *L. dichotomum*.
- *hastatum*. 6. Brown. August. Maranhatta. 1820.
- *japonicum*. Brown, yellow. May. Japan. 1830.
- *mezicaenum*. Brown. Mexico. 1831.
- *palmatum*. 6. Brown. August. N. Amer.
- *polymorphum*. 6. Brown. August. S. Amer. 1820.

- L. reticulatum*. See *Lygodictyon Forsteri*.
- *scaudens*. 6. Brown. May. E. Ind. 1793.
- *venustum*. Brown, yellow. May. S. Amer. 1845.
- *volubile*. 6. Brown. August. W. Ind. 1810.

Lyonia. (Named by Nuttall, after *J. Lyon*, an American collector of plants. Nat. ord., *Ericaceæ*; Tribe, *Andromedaceæ*. 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* have been moved to this genus.

- L. capreaefolia*. Wats. Dendr. t. 127. See *L. ligustrina*, var. *capreaefolia*.
- *fasciculata*. White. Jamaica. Syn., *Andromeda fasciculata*.
- *ferruginea*. 3. June. 1734. Syn., *L. rigida* and *Andromeda rigida*. B. C. t. 430.
- *frondosa*. 3. May. 1806.
- *jamaicensis*. 3. White. June. Jamaica. 1845. B. M. t. 4273. Syn., *Andromeda jamaicensis*. B. C. t. 1873.
- *ligustrina*. 3-10. White. June. N. America. 1746. Syn., *L. paniculata*, Wats. Dendr. t. 37, *Andromeda globulifera* and *A. pilifera*.
- *capreaefolia*. 3. July. 1812. Syn., *L. capreaefolia*.
- *salicifolia*. 3-4. White. June. Syn., *L. salicifolia*. Wats. Dendr. t. 83.
- *multiflora*. 2. July. Carolina. Wats. Dendr. t. 128.
- *paniculata*. See *L. ligustrina*.
- *rigida*. See *L. ferruginea*.
- *rubiginosa*. 10. White. July. W. Indies. 1736. Syn., *Andromeda rubiginosa*.
- *salicifolia*. See *L. ligustrina*, var. *salicifolia*.

Lyonisia. (Named after *J. Lyons*, who first taught botany to Sir Joseph Banks. Nat. ord., *Apocynaceæ*; Tribe, *Echitidaceæ*. 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 fibry loam. Winter temp., 40° to 48°.

- L. straminea*. 6. Striped. June. New South Wales. 1820.

Lyperia. (From *lyperos*, sad; from the dulness of some of the flowers. Nat. ord., *Scrophulariaceæ*; Tribe, *Manuleæ*. 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. argentea*. 1½. White. August. 1801. Annual.
- *fragrans*. ½. White, purple. June. 1776. Syn., *Erinus fragrans*.
- *pedunculata*. 1½. White. August. 1790. Syn., *Buchnera pedunculata*. Andr. Rep. t. 84.
- *pinnatifida*. ¾. Purple. July. 1840.
- *tristis*. 1. Purple. May. 1825. Syn., *Erinus tristis*.
- *violacea*. 2. Violet. July. 1816.

Lysimachia. Loosetrife. (From *lysis*, concluding, and *mache*, strife;

supposed to possess soothing qualities. Nat. ord., *Primulaceæ*.)

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. atro-purpurea*. 1. Dark purple. August. Levant. 1820. Herbaceous. Sibth. Fl. Gr. t. 187. Syn., *L. dubia*.
— *brachystachya*. 1½-2. White. Japan. 1878. Rev. Hort. 1881, p. 90.
— *cañadida*. 1. White. June. China. 1846. Herbaceous.
— *dubia*. See *L. atro-purpurea*.
— *linearis*. 2. White. China. 1856. Syn., *L. mauritiana* and *Lubinia spathulata*.
— *maculata*. ½. June. N. Holland. 1822. Evergreen trailer.
— *mauritia*. See *L. lineariloba*.
— *nutans*. Red. July. Cape of Good Hope. B. M. t. 4941. Syn., *Lubinia atro-purpurea*.

HARDY HERBACEOUS.

- L. affinis*. 2½. July.
— *angustifolia*. See *L. lanceolata*.
— *azorica*. B. M. t. 3273. See *L. nemorum*.
— *bubifera*. B. M. t. 104. See *L. stricta*.
— *capitata*. 1. June. N. Amer. 1813.
— *ciliata*. 2. July. N. Amer. 1732.
— *clethroides*. White. Japan. 1869.
— *ephe'nerum*. 2. White. August. Spain. 1730. B. M. t. 2346.
— *hybrida*. 1½. July. N. Amer. 1806.
— *lanceolata*. 1½. July. N. Amer. 1808. Syn., *L. angustifolia*.
— *lobeloides*. 1. White. July. North of India. 1840. B. R. 1842, t. 6.
— *longifolia*. 2. July. N. Amer. 1798. B. C. t. 1422. Syn., *L. quadrifolia* of B. M. 660, not of Linnaeus.
— *nemorum*. Yellow. Summer. Britain. Prostrate. Syn., *L. azorica*. Yellow Pimpernel.
— *nummularia*. ½. June. Britain. Eng. Bot., ed. 3, t. 1144.
— *aurca*. Leaves yellowish.
— *paridiformis*. Bright yellow. July. Central China. 1891.
— *punctata*. 1½. July. N. Holland. 1658.
— *verticillata*. 1. July. Crimea. 1820. Syn., *L. verticillata*. B. C. t. 2295.
— *quadrifolia* of B. M. t. 660. See *L. longifolia*.
— *stricta*. 1½. July. N. Amer. 1781. Syn., *L. bulbifera*. B. M. t. 104.
— *thyrsiflora*. 1½. June. England. Aquatic. B. M. t. 2012.
— *verticillata*. See *L. punctata*, var. *verticillata*.

Lysine'ma. (From *lysis*, freeing, and *nema*, a filament. The stamens not adhering to the sides of the corolla, as is usual in this. Nat. ord., *Epacridæ*; Tribe, *Epacreae*. 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. attenuatum*. See *L. pungens*.
— *ciliatum*. 2. Pink. March. 1823. Syn., *L. pentapetalum*.
— *conspicuum*. 3. March. 1824.
— *lasianthum*. 2. Pink. March. 1820.
— *pentapetalum*. See *L. ciliatum*.

- L. pungens*. 2. White. March. 1804. Syn., *L. attenuatum*, *Epacris attenuata*, B. C. t. 38 and *E. pungens* of B. M. t. 1199.
— *rubrum*. 2. Red. March. 1804. Syn., *Epacris rosea*, B. C. t. 863.

Lysionotus. (From *lysis*, freeing, and *notos*, the back; seed-vessel opening from the back. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreae*. Allied to *Agalmyla*.)

Stove herbaceous. Seeds in light, sandy soil, in a hotbed, in spring; division of the plant at the same time; peat and loam. Summer temp., 60° to 75°; winter, 45° to 50°.

- L. longiflora*. A synonym of *Echynanthus longiflorus*.
— *serrata*. 1. Pale lilac, or blue with darker veins. July to August. Temperate and Sub-tropical Himalayas. B. M. t. 6538. Syn., *L. ternifolia*.
— *ternifolia*. Gf. t. 1216. See *L. serrata*.

Lysistigma. (From *lysis*, a dissolution, and *stigma*, the stigma; stigmas separated. Nat. ord., *Araceæ*; Tribe, *Dieffenbachieæ*.) United with *Tacca-rum* in the Genera Plantarum, but retained as distinct by Engler.

Stove tuberous perennial. Allied to *Staurostigma*, which see for cultivation.

- L. peregrinum*. 3. Spathe olive-green. Java. Syn., *Endera conophalloidea* and *Conophallus Blumei*.

Lythrum. (From *lythron*, black-blood; the prevailing purple colour of the flowers. Nat. ord., *Lythraceæ*; Tribe, *Lythreae*.)

All purple-flowered, except *lineare*. Seeds of annuals, in the common border, in spring; perennials, by division at the same time. *Alatum* is an old resident of the greenhouse, but is perfectly hardy, and may be propagated by division and cuttings of the young shoots, or the points of old ones. The following are all hardy herbaceous, except *Græferi*, which is an evergreen trailer and not quite hardy.

- L. alatum*. 3. July. Georgia and Mexico. 1812. B. M. t. 1812. Syn., *L. Kennedyanum* and *L. vulneraria*.
— *diffusum*. Swt. Fl. Gard., t. 149. See *L. lanceolatum*.
— *fruticosum*. Andr. Rep. t. 467. See *Woodfordia floribunda*.
— *Græferi*. 1½. July. Italy. 1800. B. C. t. 1338.
— *lanceolatum*. July. Carolina. 1800. Syn., *L. diffusum*.
— *lineare*. 1½. White. July. N. Amer. 1812.
— *multiflorum*. 2. July. N. Amer. 1820.
— *salicaria*. 4. July. Britain. Eng. Bot. ed. 3, t. 491.
— *rosea*. Red. 1884.
— *tomentosum*. 2. July. Caucasus. 1828.
— *virgatum*. 3. July. Austria. 1776. B. M. t. 1003.
— *vulneraria*. See *L. alatum*.

M.

Maa'ckia amurensis. B. M. t. 6551. See *Cladrastris amurensis*.

Ma'ba. (From the native name.)

Nat. ord., *Ebenaceæ*. Allied to *Diospyros*.)

Stove evergreen shrubs. Cuttings of half-ripened shoots in May, under a glass in sand, over fibry peat, and a very slight bottom-heat; peat and loam.

M. buxifolia. 1½. Yellow. Tropical India, Africa and Australia. 1810. Stove.
— *laurina*. 3. July. Cumberland Island, Australia. 1824.

Macada'mia. (Named after *John Macadam*, M.D., Secretary of the Philosophical Institute of Victoria. Nat. ord., *Proteaceæ*; Tribe, *Grevilleæ*. Allied to *Roupala*.)

Greenhouse evergreen tree, yielding an edible nut of good flavour. For cultivation, see *HAKKA*.
M. ternstroemia. 30. Moreton Bay. 1869. G. C. 1870, p. 1181.

Macara'nga. (From the Malagasy name of this plant. Nat. ord., *Euphorbiaceæ*.)

Stove tree.

M. Porteana. Leaves 1½ feet long; petioles 2 feet; under surface with black dots. Philippines. 1888. Rev. Hort. 1888, p. 176, fig. 36. Syn., *Mappa Porteana*.

Macbridea. (Named after *Dr. Macbride*, of S. Carolina. Nat. ord., *Labiatae*; Tribe, *Stachydeæ*. 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. pulchra. Red-striped. July. Carolina. 1804. Syn., *M. pulchella*.

Machæra'nthera. (From *makaira*, a bent sword, and *anthera*, an anther; alluding to the shape of that part of the flower. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*.) See *Aster*.

M. tanacetifolia. B. M. t. 4624. See *Aster tanacetifolius*.

Macka'ya. (In honour of *Dr. J. F. Mackay*, once Keeper of Dublin University Botanic Garden, and author of "The Flora Hibernica." Nat. ord., *Acanthaceæ*; Tribe, *Justiceæ*.)

Greenhouse shrub, exceedingly handsome, with racemes of large, delicate, lilac-tinted flowers, transversely marked with red lines. Seeds; cuttings of half-ripened wood under hand-glass. Light sandy loam. Summer temp., 70° to 80°; winter, 50° to 60°.

M. bella. White, with red lines. May. Natal. 1869. B. M. t. 5797. Syn., *Asystasia bella*.

Maclea'nia. (Named after *John Maclean*, Esq., of Lima, a British merchant, and a distinguished patron of botany. Nat. ord., *Vacciniaceæ*; Tribe, *Thibaudieæ*. 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 fibry peat. Winter temp., 40° to 48°.

M. angulata. 3. Red, yellow. June. Peru. 1842.

— *coccinea*. 3. Scarlet, tipped with yellow. Rev. Hort. 1851, p. 301.

— *cordata*. Orange. Mexico. 1848. Syn., *Gaultheria cordata*.

— *longiflora*. 5. Red. May. Peru. 1844. B. R. 1844, t. 25. Syn., *M. tenuifolia*.

— *pulchra*. Scarlet, yellow. New Grenada. 1874. Stove shrubs.

— *punctata*. Red, yellow. November. Ecuador. 1848.

— *speciosissima*. Scarlet, yellow. Columbia. 1864. Stove shrub.

— *tenuifolia*. See *M. longiflora*.

Maclea'ya. (Named after *A. Macleay*, a British naturalist. Nat. ord., *Papaveraceæ*.) See *Bocconia*.

M. cordata. B. M. t. 1905, and *M. yedoensis*. See *Bocconia cordata*.

Maclura. (Named after *W. Maclure*, a North American geologist. Nat. ord., *Urticaceæ*; Tribe, *Moreæ*. Allied to *Broussonetia*.)

Cuttings of ripe shoots under a glass, in heat; *aurantiaca* by cuttings of the root and layers; soil, peat and loam. Although *aurantiaca* is hardy, it requires a warm situation.

M. aurantiaca. 20. N. Amer. 1818. Hardy deciduous. Osage Orange.

— *Plumieri*. See *Chlorophora tinctoria*, var. *Plumieri*.

— *tinctoria*. See *Chlorophora tinctoria*.

— *tricuspidata*. China. 1872. A good hedge plant. Rev. Hort. 1872, p. 56. This is a synonym of *Audrania tricuspidata*.

Maco'des. (Not explained. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Spirantheæ*.)

Terrestrial stove orchid. See *ORCHIDS*.

M. javanica. 1-1½. Orange-red, midrib white; lip pale yellow. Leaves deep velvety green, with light green nerves and transverse marks. May. Java. 1888. B. M. t. 7037.

— *Petola*. Java. 1859. Rchb. Xen. i. t. 96, figs. 1-5. *Marmorata* (Rchb. Xen. i. t. 96, figs. 6-10) is a slight variety.

Macrade'nia. (From *makros*, long, and *aden*, a gland; referring to the long process of the pollen-masses. Nat. ord., *Orchideæ*; Tribe, *Vandee-Notylieæ*. Allied to *Notylia*.)

Stove orchid. Division when growth is commencing; fibry 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. brassavolce. Brown, ochre, yellow, purple. Columbia. 1864.

— *lutescens*. ½. Olive. November. Trinidad. 1821. B. R. t. 612.

— *trianstrali*. Greenish outside, red inside. May. Cuba. B. R. t. 1815.

Macræ'a. (After *Mr. Macræ*. Nat. ord., *Geraniaceæ*.) A synonym of *Viviana*.

Macra'nthus. (From *makros*, long, and *anthos*, a flower. Nat. ord., *Legu-*

minosæ; Tribe, *Phaseoleæ*.) See *Mucuna*.

M. cochinchinensis. See *Mucuna cochinchinensis*.

Macrochilus. (From *makros*, long, and *cheilos*, a lip. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidiææ*.) See *Miltonia*.

M. Frya'nus. Kn. and West. t. 45. See *Miltonia spectabilis*.

Macrocne'mum. (From *makros*, long, and *kneme*, a leg; referring to the flower-stalks. Nat. ord., *Rubiaceæ*; Tribe, *Cinchonææ*. Allied to *Portlandia*.)

Stove evergreen trees. Cuttings of ripe shoots in sand, under a bell-glass, and in a brisk bottom-heat; peat and fibry loam, well drained. Winter temp., 55° to 60°; summer, 60° to 85°.

M. cocci'neum. See *Warszewiczia coccinea*: — *jamaicæ nse*. 14. White. Jamaica. 1806. — *tinctorium*. See *Condaminia tinctoria*.

Macromeria. (From *makros*, long, and *meris*, a part; referring to the unusual length of the stamens. Nat. ord., *Boraginææ*; Tribe, *Boragææ*.)

Half-hardy evergreen shrub, requiring the protection of a cold pit in winter; seeds and divisions in spring; sandy loam and fibry peat.

M. ezser'ta. 3. Yellow. September. Mexico. 1846. B. R. 1847, t. 26.

Macrochordium. See *Æchmea*.

Macropiper. See *Piper*.

Macropodia. (From *makros*, long, and *pous*, a foot. Nat. ord., *Hæmodoracææ*.)

Cool greenhouse herb. Loam one part, peat three parts. Division of roots in spring.

M. fuliginosa. 3. Yellow. June. Australia. Syn., *Anigozanthus fuliginosa*.

Macroscepis. (From *makros*, long, and *skepe*, a covering. Nat. ord., *Asclepiadææ*; Tribe, *Cynanchææ*.)

Stove twining shrub.

M. obovata. Yellow-brown. November. Tropical America from Mexico to Peru. B. M. t. 6815.

Macrosphyra. (From *makros*, long, and *sphura*, a hammer; the style is very long and bears a large terminal stigma. Nat. ord., *Rubiaceæ*; Tribe, *Gardeniææ*.)

Stove evergreen shrub. For culture, see *GARDENIA*.

M. longistyla. 6. Green, white. June. W. Africa. 1845. Syn., *Gardenia longistyla*. B. M. t. 4322.

Macrostigma tupistroides. See *Tupistra macrostigma*.

Macrostylis. (From *makros*, long, and *stylis*, a style, or female organ. Nat. ord., *Rutacææ*; Tribe, *Diosmeææ*. Allied to *Agathosma*.)

Greenhouse evergreen shrubs, from the Cape of Good Hope. 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 fibry loam, but most of the former. Winter temp., 40° to 48°.

M. barbat'a. 2. White. May. 1816.

— *barb'gera*. Lilac. April. 1826.

— *cordata*. Lilac. April. 1823.

— *obovata*. 2. Purple. May. 1774.

— — *lanco'cia'ta*. 2. Purple. May. 1774.

— — *ob'longa*. 2. Purple. May. 1774.

— — *ovata*. 2. Purple. May. 1774.

— *squarro'sa*. Lilac. April. 1821.

Macroto'mia. (Derivation uncertain. Nat. ord., *Borginææ*.)

Greenhouse or half-hardy perennial.

M. Benth'ni. 1-3. Brownish-purple. N. W. Himalayas. 1888. B. M. t. 7003.

Macrotr'pis. (From *makros*, long, and *tropis*, a keel; referring to the length and name of the lower part of a pea-flower. Nat. ord., *Leguminosææ*; Tribe, *Sophorææ*. Allied to *Sophora*.) United with *Ormosia* in the *Genera Plantarum*.

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. fo'etida. 6. Yellow. April. 1820.

— *inodo'ra*. White. April. 1821.

Macroza'mia. (From *makros*, long, and *Zamia*. Nat. ord., *Cycadacææ*; Tribe, *Encephalar'teææ*.)

Greenhouse evergreen perennials. For cultivation, see *ZAMIA*.

M. caloco'ma. See *Microcycas calocoma*.

— *cora'lip'es*. Australia. 1872. B. M. t. 5943.

— — *gyra'ta*. Australia. 1873.

— *cyll'ndrica*. Queensland. 1874.

— *Deniso'ni*. See *M. Perowskiana*.

— *elegant'issima*. Australia. 1873.

— *eriole'pis*. W. Australia? 1849.

— *exce'lsa*. S. Africa. 1869.

— *Fraser'i*. W. Australia. 1846.

— *Ho'pei*. See *M. Perowskiana*, var. *Hopei*.

— *Macke'nzii*. Australia. 1877. G. C. 1877, vii.

p. 665.

— *magn'ifica*. Australia. 1870.

— *Mique'li*. Queensland. Syn., *Encephalartos*

Mique'li.

— *Moore'i*. 20. Australia.

— *Pau'lo-Guile'imi*. Queensland. Gf. t. 875,

figs. 1-3.

— *Perowskia'na*. Australia. 1870. Syn., *M.*

Denisoni, *Catakidozamia Macleayi*, *Leptodozamia Perowskiana*, and *L. Denisoni*,

Gf. t. 854.

— — *Ho'pei*. 60. Queensland. 1865.

— *plumo'sa*. Queensland. 1874. G. C. 1875,

iii. p. 659.

— *spira'lis*. Australia.

— — *ebu'rnea*. Australia. 1873.

— *tridentata*. Gf. t. 875, fig. 4. Syn., *Encephalartos* and *Zamia tridentata*,

— — *oblongifo'lia*. Gf. t. 875, figs. 5-7.

Madagascar Nutmeg. *Agathophyllum*.

Madagascar Potato. *Solanum anguivi*.

Mad-apple. *Sola'num insa'num.*
Mada'ria. (Said to be derived from the Chilian name of *M. sativa*. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.) A synonym of **Madia**.

Madder. *Ru'bia.*

Ma'dia. (The Chilian name of *M. sativa*. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. Allied to *Bidens*.)

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. corymbosa. White. September. California. 1847.

— *elegans*. 1½. Yellow. August. North West America. 1831. B. M. t. 3548.

— *sativa.* Yellow. July. Chili. 1794. Syn., *M. mellosa*, Jacq. H. Schoenb. t. 309, and *Madaria sativa*.

— *viscosa.* 1½. Yellow. July. Chili. 1794. B. M. t. 2574.

Madwort. *Aly'ssum.*

Mæ'sa. (From *maas*, the Arabic name of one of the species. Nat. ord., *Myrsinææ*; Tribe, *Mæseæ*. Allied to *Ardisia*.)

Stove evergreen shrubs, with white blossoms, from the East Indies. 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 hotton-heat; peat and loam. Winter temp., 50° to 60°; summer, 60° to 85°.

M. argentea. 5. April. India. 1818.

— *indica.* 5. November. India. 1817. Syn., *Bæobotrys indica*. B. M. t. 2052.

— *macrophylla.* 12. June. India. 1818. Syn., *M. tomentosa*.

— *memoralis.* 5. March. New Hebrides. 1830.

— *pubescens.* 4. June. 1824. Syn., *Bæobotrys pubescens*.

— *tomentosa.* See *M. macrophylla*.

Magno'lia. (Named after Professor Magnol, of Montpellier. Nat. ord., *Magnoliaceæ*; Tribe, *Magnoliææ*.)

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 *macrophylla*. 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. *Obovata* and *acuminata* 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, etc. 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, etc., is required. All delight, when planted out, in a deep, sandy soil, quite dry, and enriched with peat and a little leaf-mould. *Glauca*, however, generally thrives best in a peaty soil rather retentive of moisture.

HARDY DECIDUOUS.

M. acuminata. 60. Yellow, green. June. N. Amer. 1736.

— *Candolii.* 60. June. N. Amer. 1736.

— *auriculata.* See *M. Fraseri*.

— *Campbellii.* Pale rose inside, crimson outside. Sikkim. 1868. B. M. t. 6793.

— *conspicua.* 30. March. China. 1789. Salis. Parad. t. 38. Syn., *M. Yulan*, B. M. t. 1621.

— *discolor.* 6. Purple, white. May. 1790.

— *obovata.* See *M. obovata*.

— *Soulangeana.* Purple tinted. France. Perhaps a hybrid between *M. conspicua* and *M. obovata*. Syn., *M. Yulan*, var. *Soulangeana*, B. R. t. 1164, and *M. Soulangeana*, Swt. Fl. Gard. t. 260.

— *— nigra.* Darker purple.

— *cordata.* 40. June. N. Amer. 1801.

— *Fraseri.* 30-50. Yellowish. April. N. Amer. 1786. Syn., *M. auriculata*. B. M. t. 1206.

— *pyramidata.* 20. May. Carolina. 1811. Syn., *M. pyramidata*.

— *glauca.* 20. July. N. Amer. 1688. B. C. t. 215.

— *Burchelliana.* 20. June.

— *Gordoniana.* 20. June. 1750.

— *major.* Cream. Larger than the type. June. 1808. B. M. t. 2164. Syn., *M. Thomsoniana*.

— *gracilis.* Purple. April. Japan. 1804.

— *Halliana.* Flor. Mag. new ser. t. 309. See *M. stellata*.

— *hypoleuca.* 60. Creamy-white. Japan. 1865. G. and F. 1888, p. 305.

— *Le'mei.* Rose. Hybrid between *M. conspicua* and *M. obovata*, var. *discolor*.

— *macrophylla.* 30. July. N. Amer. 1800.

— *obovata.* 5. Purple outside, white within. April. Japan. 1790.

— *discolor.* Purple. April. Japan. 1790. Syn., *M. discolor* and *M. purpurea*, B. M. t. 390.

— *parviflora.* White, rose. Spring. Japan.

— *minor.* A smaller plant. Japan. 1888.

— *purpurea.* See *M. obovata*, var. *discolor*.

— *pyramidata.* See *M. Fraseri*, var. *pyramidata*.

— *stellata.* White. Japan. March. 1878. B. M. t. 6370. Syn., *M. Halliana*.

— *Thomsoniana.* See *M. glauca*, var. *major*.

— *tripe'tala.* See *M. Umbrella*.

— *Umbrella.* 30. White. May. N. Amer. 1752. Syn., *M. tripetala*.

— *Watsoni.* Creamy-white; filaments blood-red. Japan. B. M. t. 7157. Syn., *M. parviflora* of some gardens.

M. Wiesneri. White. Japan. 1890.
— *Yulan*. B. C. t. 1187. See *M. conspiciua*.

HARDY EVERGREENS.

M. grandiflora. 20. August. Carolina. 1734.
B. M. t. 1952.
— *angustifolia*. 20. July. Paris. 1825.
— *crispata*. 20. June. N. Amer.
— *elliptica*. 20. August. Carolina. 1734.
— *exoniensis*. 20. August. N. Amer.
— *ferruginea*. 20. August. N. Amer.
— *lanceolata*. 20. August. Carolina. 1734.
— *obovata*. 20. August. Carolina. 1734.
— *procera*. 20. August. N. Amer.
— *rotundifolia*. 20. August. N. Amer.
— *Koibus*. Purple, white. July. Japan. 1804.

HALF-HARDY EVERGREENS.

M. fuscata. 3. Brown. April. China. 1789.
B. R. t. 1008. Syn., *Michelia fuscata*.
— *amonifolia*. 3. Red. June. China. 1789.

STOVE.

M. odoratissima. See *Talauma Candollei*.
— *puvilla*. White. China. 1793. Andr. Rep. t. 226.

Magpie Moth. See *Abraxas*.

Maharanga. (The Nepalesename.)
Nat. ord., *Boraginæ*; Tribe, *Borageæ*.
See *Onosma*.

M. emodi. Paxt. Fl. Gard. iii. p. 120, fig. 291.
See *Onosma emodi*.

Mahe'rnica. (An anagram of *Hermannia*, an allied genus. Nat. ord., *Sterculiaceæ*; Tribe, *Hermanniceæ*.)

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; fibry 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. chrysantha. 1. Yellow. S. Africa. 1868.
Ref. Bot. t. 26.
— *diffusa*. Yellow. May. Capetown. Trailer.
Jacq. H. Schoenb. t. 201.
— *glabra*. Yellow. June. 1789.
— *grandiflora*. Red. June. 1812. Syn., *Hermannia grandiflora*.
— *Burchei*. B. R. t. 224.
— *heterophylla*. Yellow. May. 1731.
— *incisa*. Yellow, white. July. 1792. B. M. t. 353.
— *oxalifolia*. Yellow. June. 1817.
— *pulchella*. Reddish. July. 1792.
— *rutila*. Scarlet. August. Jacq. H. Schoenb. t. 263.
— *vernica*. Vermilion. July. 1816.
— *verticillata*. Yellow. July. 1820.
— *vesicaria*. Yellow. June. 1818.

Mahogany-tree. *Swietenia Mahogoni*.

Maho'nia. A synonym of *Berberis*.

M. aquifolia. See *Berberis aquifolium*.
— *diversifolia*. Swt. Fl. Gard. t. 94. A synonym of *Berberis diversifolia*.
— *fascicularis*. See *Berberis pinnata*.
— *glumacea*. Paxt. Fl. Gard. vii. p. 55. See *Berberis nervosa*.
— *repens*. See *Berberis aquifolium*.

Mahurea. (The native name.)

Nat. ord., *Ternstroemiaceæ*; Tribe, *Bonneticeæ*. 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 fibry loam. Winter temp., 50° to 60°; summer, 60° to 80°.

M. palustris. 15. Purple. May. Guiana. 1820. Syn., *Bonnetia palustris*.

Maiden-Hair. *Passiflora adiantum*, and *Adiantum capillus Venereis*, etc.

Maiden-Hair-tree. *Gingko biloba*.

Maiden Plum. *Comocladia*.

Maiden Tree is a seedling tree which has not been grafted.

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.

Maianthemum. (From *maios*, May, and *antheon*, a flower. Nat. ord., *Liliaceæ*.)

Hardy bulb. Culture as for *SMILACINA*.
M. biflorum. † White. May. Britain. Syns., *Convallaria bifolia*, B. M. t. 610, *Smilacina bifolia* and *S. canadensis*.

Maieta. (The native name. Nat. ord., *Melastomaceæ*; Tribe, *Miconiceæ*. Allied to *Clidemia*.)

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. guianensis. 2. White. Guiana. 1824.

Mai'ria. (Derivation not explained. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*. Allied to *Aster*.)

Half-hardy herbaceous plants, from South Africa; seeds, and divisions in spring; requiring the protection of a dry, cold pit in winter; sandy loam and a little peat.

M. crenata. Lilac. April. 1820. Syns, *Arnica crenata*, B. C. t. 901, and *Gerbera crenata*, B. R. t. 855.
— *taxifolia*. Yellow. July. 1816.

Majorana. See *Origanum*.

Malabai'na. (After Count Malabaila von Canal, of Prague. Nat. ord., *Umbelliferae*. Syn., *Leiotulus*.)

Hardy perennial herbs. Seeds in open ground, in spring.

M. Opoponax. 6. Yellow. June. South Europe. 1640. Syns., *Opoponax Chironium* and *Pastinaca Opoponax*.
— *pimpinellofolia*. 2. Yellow. July. Caucasus. 1813.

Malabar Leaf. *Cinnamomum Malabathrum*.

Malabar Nightshade. *Basella*.

Malabar Rose. *Hibi'scus ro'sa malaba'rica.*

Malachade'nia. (Nat. ord., *Orchideæ.*) A synonym of **Bulbophyllum.** *M. clava'ta.* Green, spotted with brown. Rio Janeiro. 1839. B. M. t. 4334.

Malochode'ndron. See **Stuar-tia.**

Mala'xis. (From *malaxis*, delicate; referring to the whole plant. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Malaxææ.* Allied to *Calypso.*)

Terrestrial orchids, growing in sandy peat, and in moist places; division of the roots.

M. cauda'ta. See *Brassia caudata.*
— *lilifo'lia.* B. M. t. 2004. See *Liparis lilifolia.*

— *ophioglossoides.* B. C. t. 1146. See *Microstylis ophioglossoides.*

— *paluda'sa.* †. Yellow, green. July. England. Hardy. Eng. Bot. ed. 3, t. 1489.

— *Partho'ni.* Green. June. Brazil. 1838. Stove.

Malay Apple. *Euge'nia malac-ensis.*

Malco'lmia. (Named after W. Malcolm, mentioned by Ray. Nat. ord., *Cruciferae*; Tribe, *Sisymbriææ.* 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, ch'a, incrasa'ta,* and *maritima* are the handsomest.

M. africa'na. †. Purple. Africa. 1744. Syn., *Hesperis africana.*

— *arena'ria.* Violet. Algiers. 1804. Syn., *Hesperis arenaria.*

— *ch'a.* 1. Purple. Chio. 1732.

— *ero'sa.* †. Portugal. 1818.

— *incrasa'ta.* Purple. Tenedos. 1820.

— *interné'dia.* Purple. Caraccas. 1837.

— *la'cera.* White, yellow. South Europe. 1780.

— *la'xa.* 2. Purple. Siberia. 1820.

— *litto'rea.* 1. White, yellow. South Europe. 1833. Syn., *Hesperis littorea.*

— *lyra'ta.* †. Purple. Cyprus. 1820.

— *maritima.* †. Violet. South Europe. 1713.

— *parvifo'ra.* †. Lilac. South Europe. 1823.

— *runcina'ta.* Purple. Caraccas. 1837.

— *taraxacifo'lia.* 4. Purple. Siberia. 1795.

Male Fern. *Aspi'dium filix-ma's.*

Maleshe'rbia. (Named after a French patron of botany. Nat. ord., *Passiflorææ*; Tribe, *Malesherbiææ.*)

Greenhouse annuals, from Chili. Seeds sown in a hotbed, in March, seedlings pricked off, potted, and flowered in the greenhouse; sandy peat and fibry loam, with a little very reduced leaf-mould.

M. corona'ta and *fascicula'ta* are synonyms of *Gynopleura linearifolia.*

— *hu'milis.* †. White. 1831.

— *linearifo'lia.* 1†. Purple, blue. September. 1831. B. M. t. 3362. Now known as *Gynopleura linearifolia.*

— *thyrso'ra.* Yellow. July. 1832.

Mallo'tus. (From *mallotos*, hairy; because of the hairy fruit. Nat. ord., *Euphorbiææ*; Tribe, *Crotonææ.*)

A large genus of trees and shrubs, nearly all tropical, though the only one yet introduced will probably prove nearly or quite hardy in the south of England. Seeds; ripened cuttings, in sandy loam, under a bell-glass.

M. japonica. Japan. 1866.

Mallow. *Mal'va.*

Mallow Rose. *Hibi'scus moscheu'los.*

Mal'lope. (From *malos*, soft, or tender; referring to the texture of the leaves. Nat. ord., *Malvaceæ*; Tribe, *Malvææ.*)

Hardy annuals, with purple flowers, from Barbary. 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. malacot'des. 1. June. 1710. B. M. t. 5852.

— *simu'ta.* July. 1710.

— *tri'fida.* 2. July. 1808.

— *grandifo'ra.* Reddish-purple. June.

Paxt. Mag. i. p. 177.

Malo'rtiea. (Probably commemorative. Nat. ord., *Palmææ*; Tribe, *Arceææ.*)

Stove palm. For cultivation, see ELAIS.

M. gra'ciis. 2. Guatemala. 1862. B. M. t. 5291.

— *sim'plex.* Costa Rica. 1861. A dwarf palm. B. M. t. 5247.

Malpi'ghia. Barbadoes Cherry. (Named after Professor Malpighi, of Pisa. Nat. ord., *Malpighiaceææ*; Tribe, *Malpighiææ.* 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 fibry loam. Winter temp., 50° to 55°; summer, 60° to 85°.

M. angustifo'lia. 10. Pink. July. Central America.

— *aquifo'lia.* 7. Pink. August. S. Amer. 1759. Syn., *M. iticifolia.*

— *bifo'ra.* 10. Pale red. July. S. Amer. 1810.

— *coctifera.* 2. Pink. S. Amer. 1733. Jacq. Ic. t. 470.

— *glab'ra.* 16. Rose. May. W. Ind. 1755.

— *inea'na.* Rose. Campeachy. 1742.

— *macrophy'lla.* See *Byrsonima nervosa.*

— *me'dia, ni'tida,* and *polysta'chya* are synonyms of *Bunchosia nitida.*

— *punicifo'lia.* 12. Rose. W. Ind. 1690.

Mal'us. See **Pyrus.**

Mal'va. Mallow. (From *malacho*, to soften; referring to their emollient qualities. Nat. ord., *Malvaceææ*; Tribe, *Malvææ.*)

Hardy annuals, by seeds in the open border in April; herbaceous perennial, etc., by seeds in spring, by division in autumn and spring, and by cuttings of the young shoots under a hand-light; stove and greenhouse species, by cuttings, generally inserted in sandy soil, in a little heat; these last are best grown in rich, fibry loam and peat, and require merely the common treatment suitable to greenhouse and stove-plants.

M. albutilo'i'des. B. M. t. 2544. See *Sphaeralacea.*

— *a'leca.* 3. Pale rose. July. Germany. B.

M. t. 2297. Syns., *M. italica* and *M. Morenii.*

- M. amœna*. B. M. t. 1998. See *Malvastrum calycinum*.
 — *angulata*. 1. Purple. July. 1830. Greenhouse.
 — *angustifolia*. B. M. t. 2539. See *Sphæralacea angustifolia*.
 — *aspe'rrima*. Jacq. H. Schoenb. t. 139. See *Malvastrum asperrimum*.
 — *auranti'aco-rubra*. 2. N. W. America. 1871.
 — *balsamica*. 4. Pink. July. South Africa. 1800. Jacq. Ic. t. 140.
 — *borbonica*. 4. Yellow. July. Mauritius. 1816. Stove.
 — *borea'lis*. 3. White, red. June. Russia. 1820. Syn., *H. Henningii*.
 — *bryoni'folia*. See *Malvastrum bryoniifolium*.
 — *calyci'na*. B. R. t. 297. See *Malvastrum calycinum*.
 — *campanulata*. Paxt. Mag. ix. p. 173. See *Malvastrum campanulatum*.
 — *campanuloi'des*. †. Blush. October. N. America. 1825. B. C. t. 1670. Greenhouse.
 — *capensis*. B. R. t. 295. See *Malvastrum capense*.
 — *capitata*. 2. Red. April. Peru. 1798. Greenhouse.
 — *coccinea*. 5. Lilac. July. S. Amer. 1835.
 — *concolorata*. 5. Lilac. May. S. Amer. 1835. Kn. and West. t. 38.
 — *Creed'na*. B. M. t. 3698. See *Malvastrum coccineum*, var. *grossulariæfolium*.
 — *Creed'no-minia'ta*. 3-4. Red. Hybrid. 1852. Gd. t. 16.
 — *cri'spa*. 5. White. June. Syria. 1573.
 — *divaricata*. Andr. Rep. t. 182. See *Malvastrum divaricatum*.
 — *domingensis*. 2. Yellow. July. St. Domingo. 1824. Stove.
 — *fragrans* of Jacq. Vind. t. 33, see *Malvastrum fragrans*; of B. R. t. 296, see *Malvastrum capense*, var. *balsamicum*.
 — *geranioides*. See *Malvastrum Gilliesii*.
 — *grossulariæ'folia in'dora*. 4. Rose. B. R. t. 561.
 — *Henni'ngii*. See *M. borealis*.
 — *involucrata*. 1‡. Purple. July. N. Amer. B. M. t. 4681.
 — *italica*. See *M. alcea*.
 — *latea*. See *Malvastrum vitifolium*.
 — *lateritia*. B. M. t. 3846. See *Malvastrum lateritium*.
 — *limensis*. 1. Pink. Jacq. Vind. t. 141.
 — *lucida*. Pink. June.
 — *Martensia'na*. Rose. Australia. 1864. Greenhouse.
 — *mauritia'na*. Swt. Fl. Gard. t. 81. See *Lavatera cretica*.
 — *minia'ta*. 4. Red. June. S. America. 1698.
 — *Mor'e'ni*. B. M. t. 2793. See *M. alcea*.
 — *moschata*. 2. Fleeh. June. Britain.
 — *alba*. White. 1881.
 — *undulata*. 2. White. July. B. M. t. 2298.
 — *Mulle'ri*. See *Lavatera triloba*.
 — *Munro'na*. B. R. t. 1306. See *Malvastrum Munroanum*.
 — *obtusiloba*. B. M. t. 2787. See *Sphæralacea obtusiloba*.
 — *odora'ta*. 8-12. Pink. Maund Bot. t. 218.
 — *pariflo'ra*. Pink. Jacq. Vind. t. 39.
 — *peruvia'na*. Jacq. Vind. t. 156. See *Malvastrum peruvianum*.
 — *prostra'ta*. B. M. t. 2515. See *Modiola prostrata*.
 — *purpura'ta*. 1‡. Pale red. July. Chili. 1825. B. R. t. 1362.
 — *reflexa*. Andr. Rep. t. 135. See *Malvastrum tridactylites*, var. *glabra*.
 — *retu'sa*. 4. Pink. April. South Africa. 1803.
 — *sca'bra*. 4. Yellow. June. Peru. 1798.

- M. scop'ria*. 6. Yellow. April. Peru. 1782. Jacq. Ic. t. 139.
 — *Sherardia'na*. Jacq. Vind. t. 142. See *Sida*.
 — *spica'ta*. See *Malvastrum spicatum*.
 — *stri'cta*. Jacq. H. Schoenb. t. 294. See *Malvastrum striatum*.
 — *tomentosa*. 3. Yellow. July. E. Indies. 1820. Stove.
 — *tricuspidata*. See *Malvastrum tricuspidatum*.
 — *tridactyl'ites*. See *Malvastrum tridactylites*.
 — *umbella'ta*. Crimson. S. America. 1820. B. R. t. 1608. Greenhouse.
 — *zebr'ina*. 2. White, red. August. S. Europe.

Malva'strum. (Derived from *Malva*. Nat. ord., *Malvaceæ*; Tribe, *Malvæe*.)

Greenhouse or hardy herbs. For culture, see MALVA.

- M. asperrimum*. 3. Red. July. South Africa. 1796. Syn., *Malva asperrima*. Jacq. H. Schoenb. t. 139.
 — *calyci'num*. 3. Purple. April. South Africa. 1796. Syns., *Malva amœna*, B. M. t. 1998, and *M. calycina*, B. R. t. 297.
 — *campanulatum*. 1. Pink, lilac. July. Chili. 1839. Syn., *Malva campanulata*. Paxt. Mag. ix. p. 173.
 — *capense*. 10. Red, white. June. South Africa. 1713. Syn., *Malva capensis*. B. R. t. 295.
 — *balsamicum*. 3. Scarlet. June. South Africa. 1759. Syn., *Malva fragrans* of B. R. t. 296.
 — *coccineum*. †. Scarlet. July. N. America. 1811. Syn., *Cristaria coccinea*. B. M. t. 1673.
 — *grossulariæ'folium*. 2. Red. July. United States. 1836. Syn., *Malva creana*. B. M. t. 3698.
 — *divaricatum*. White, pink. June. S. Africa. Syn., *Malva divaricata*. Andr. Rep. t. 182.
 — *fragrans*. 3. Scarlet. June. South Africa. 1759. Syn., *Malva fragrans* of Jacq. Vind. t. 33.
 — *Gilliesii*. †. Bright red. Summer. Parana. Syns., *Malva geranioides* and *Modiola geranioides*.
 — *lateritium*. 1. Salmon. September. Buenos Ayres. 1840. Syn., *Malva lateritia*.
 — *Munro'num*. 2. Scarlet. August. Columbia. 1826. Syn., *Malva Munroana*. B. R. t. 1306.
 — *peruvia'num*. 3. Pink. Summer. Syn., *Malva peruviana*. Jacq. Vind. t. 156.
 — *stri'ctum*. 3. White. April. South Africa. 1806. Syn., *Malva stricta*. Jacq. H. Schoenb. t. 294.
 — *tricuspidatum*. 1. Yellow. July. W. Indies. 1726. Syn., *Malva tricuspidata*. Stove biennial.
 — *tridactyl'ites*. 3. Pink. July. South Africa. 1791. Syn., *Malva tridactylites*.
 — *glabra*. Pale pink. March. S. Africa. 1794. Syn., *Malva reflexa*. Andr. Rep. t. 135.

Malvavi'scus. (From *malva*, the mallow, and *viscus*, glue; referring to the mucilage with which it abounds. Nat. ord., *Malvaceæ*; Tribe, *Ureneæ*.)

Stove and greenhouse evergreen trees and shrubs. 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; fibry peat, and sandy, lumpy loam.

- M. arbo'reus*. 12. Scarlet. W. Ind. 1714.
 — *mol'lis*. 12. Scarlet. August. Mexico. 1780.
 — *pilo'sus*. 12. Red. October. Jamaica. 1780.

Mame'stra. The larva of the Bright-line-brown-eye, or Pot-herb Moth (*Mame'stra olera'cea*), may be found early in December, beneath the surface of the earth, undergoing its transformations. This caterpillar is one of the most destructive of our garden enemies, feeding on the stem, just under the surface, of cabbages, but more especially brocoli, lettuces, and some other garden produce during the autumn. It is of a livid yellowish-brown colour, darkly striped on the back and sides, and with a white stripe nearly over the feet, which are light brown. It has black dots between the dark stripes. When young, and sometimes even when fully grown, it has a green ground colour. The moth comes forth in the summer. It measures one and a half inches across the fore-wings, which are nearly of a uniform chestnut colour, but slightly clouded, and with a whitish irregular line near the outer edge, with an orange-coloured, kidney-shaped spot near it, and a



roundish dark spot near the centre. The under-wings are dusky-white, with the veins and a crescent-shaped spot in the centre all dusky.

Mame'stra brassica.—During the latter part of the evenings of May and June, a middle-sized, brown moth may be seen very often flying in our gardens, and visiting our beds of cabbages and lettuces, of which its caterpillars are most destructive. This is the Cabbage Moth (*Mame'stra brassica*, and *Noctua brassica* of some naturalists). It measures about one inch and three-quarters across the opened fore-wings, which are dusky-brown, clouded with darker shades, and marked with pairs of dark spots on their front edge; from these spots proceed the streaks which mark the wings across; there are various spots on the wings, some yellowish, and those in the middle surrounded with white, the kidney-shaped one with a whitish-grey crescent round it, and blackish beyond; the wings have a grey, yellowish-striped fringe, and near this, at the point farthest from the body, they have a row of black, triangular marks; the hind-wings

are light brownish-grey, with dark veins; the body and head are of various shades of blackish-grey, with a darker stripe of the same colour down the centre of the back. During the day this moth rests on the shady sides of the stems of trees, or the branches of hedge-row bushes, and even by the side of clods on the soil.

The caterpillar is green, variously marked with grey or black, with a dark stripe down the back, and a dirty-yellow one down each side; the spiracles (breathing-holes) are white, surrounded with black, and close above the yellow stripe. The caterpillar is found in July, August, and September, feeding upon the hearts of cabbages and lettuces. The only remedies are destroying the moths whenever seen, and hand-picking the caterpillars. The latter bury themselves in the ground, and remain in the pupa or chrysalis state all the winter.—*The Cottage Gardener*.

Mamme'a. Mammee-tree. (The native name. Nat. ord. *Guttiferae*; Tribe, *Calophylleae*. 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 trees, with white flowers. Cuttings of the half-ripened shoots in sand, under a bell-glass, and in bottom-heat; fibry, sandy loam, and a little dried leaf-mould.

M. africa'na. 60. July. Sierra Leone. 1823.
— *america'na*. 60. S. Amer. 1730.

Mammilla'ria. (From the diminutive of *mamilla*, a nipple; referring to the spirally-arranged tubercles on these plants. Nat. ord., *Cactea*; Tribe, *Echinocactea*. Syn., *Anhalonium*.)

Dwarf plants, composed of a number 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 freshly dressed, or repotted, in sandy loam and peat, with a fair portion of brick rubble in April or May; afterwards kept in a close temperature, 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. They like plenty of sunshine at all times when fully established; and at 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. Their greatest enemy is the red spider; plenty of syringing when growing in summer. Water somewhat liberally in summer, when in flower and growing; little or none must be given at other times.

- M. aloides*. Syn., *Anhalonium prismaticum*.
 — *acanthophlegma*. Pink. Mexico. 1846.
 — *angulata*. Mexico.
 — *atrata*. Rose. Chili? B. M. t. 3842.
 — *auriceps*. Mexico.
 — *bicolor*. Purple. July. Mexico.
 — *calcarata*. Yellow, red. Texas.
 — *Celsia*'na. Red. July. Mexico.
 — *centricorrhæa*. Apricot colour. July. Mexico. 1844.
 — *chlora*'ntha. Yellow. Texas. 1883.
 — *chrysantha*. Yellow. S. America. 1827.
 — *chrysa*'ntha. Yellow. S. America. 1827.
 — *citrifera*. Mexico.
 — *clava*. Yellow. Mexico. B. M. t. 4358.
 — *coccinea*. Scarlet. June. Chili. 1827.
 — *columnaris*. Mexico. 1838.
 — *conica*. July. 1808.
 — *cornifera*. Mexico. 1845.
 — *cornimanua*. Yellow, purple, orange-red. 1887.
 — *coronaria*. Scarlet. July. S. America. 1817.
 — *decipiens*. White. July. Mexico. 1845.
 — *densa*. June. Mexico. 1830.
 — *depressa*. Red, green. July. S. America. 1800.
 — *diseolor*. Red. July. Xalapa. 1829. B. C. t. 1671.
 — *dolichoentra*. Purple. Mexico.
 — *echinaria*. Pale pink. Mexico. 1830.
 — *elongata*. Mexico.
 — *Fischeri*. Yellow. Mexico.
 — *flavescens*. Yellow. 1811.
 — *floribunda*. Pink. Chili. B. M. t. 3647.
 — *forma*'sa. Red. June. Mexico. 1847.
 — *geminispi*'na. Red. Mexico. 1823.
 — *gladia*'ta. Mexico. 1845.
 — *glochidia*'ta. Mexico.
 — *glomerata*. Red. St. Domingo. 1825.
 — *gracilis*. Mexico.
 — *Grusoni*. Yellow. Mexico. Gf. 1889, p. 105, fig. 20.
 — *Haageana*. Pink. July. Mexico.
 — *helicteres*. Rose. June. Mexico. 1827.
 — *Heyderi*. Texas. 1880.
 — *lanifera*. Red. Mexico. 1823.
 — *Lehmanni*. $\frac{1}{2}$. Straw-colour. Mexico. 1836. B. M. t. 3634.
 — *longimanua*. Yellow. June. Mexico.
 — *macrothéle*. Yellow, violet. Mexico.
 — *magnimanua*. Mexico.
 — *microthéle*. Yellow, red. Mexico.
 — *minima*. Mexico.
 — *missouriensis*. White. July. Missouri. 1818.
 — *mutabilis*. Purple. July. Mexico.
 — *Neumanniana*. Mexico. 1845.
 — *Parkinsonii*. Yellow. July. Mexico.
 — *Peacockii*. Mexico. 1872.
 — *phymatothéle*. Mexico. 1846.
 — *polydra*. Pink. July. Mexico.
 — *polythéle*. Red. August. Mexico.
 — *prolifera*. White. July. S. America. 1800.
 — *pulella*. Purple. July. Mexico.
 — *pulchra*. Rose. June. Mexico. 1826. B. R. t. 1329.

- M. pusilla*. Pale red. S. America. 1820.
 — *pyncanantha*. $\frac{1}{2}$. Yellowish. July. Mexico. B. M. t. 3972.
 — *pyramidalis*. Mexico. 1835.
 — *pyrrhocéphala*. Red. June. Mexico.
 — *quadrata*. Chili. 1827.
 — *quadrifida*'na. Mexico. 1838.
 — *radicans*. Mexico. 1845.
 — *rhodacantha*. Red. July. Mexico.
 — *sanguinea*. Pink. Mexico. 1883. Gf. t. 1111.
 — *Scheelei*'na. White. June. Mexico. Gf. t. 207.
 — *Schiedeana*. White. July. Mexico. 1845.
 — *scotymoides*. Yellow, purple. August. Mexico.
 — *Seitziana*'na. Mexico.
 — *senilis*. Orange-red, violet-tinted. Mexico.
 — *speciosa*. Red. Chili. 1827.
 — *sphaerotricha*. Red. July. Mexico.
 — *spinosa*'sima. Red. June.
 — *stellaura*'ta. Yellow. July. Mexico.
 — *stella*'ta. Pink. May. S. America. 1815.
 — *straminea*. Red. June. S. America. 1811.
 — *tennis*. White. May. Mexico. 1830. B. M. t. 1523.
 — *tetracantha*. Bright rose. July. Mexico. B. M. t. 4060.
 — *turbidata*. Yellow or straw-colour, tipped with red. June. Mexico. B. M. t. 3984.
 — *uberiformis*. White. July. Mexico. 1846.
 — *uncinata*. White, red. July. Mexico. 1846.
 — *vetula*. Light scarlet. 1835.
 — *vivipara*. Red. Louisiana. 1811.
 — *Wildiana*'na. Rose. August. Mexico.
 — *aurantotricha*. Rose-purple.
 — *Zuccariniana*'na. Mexico. 1845.

Mancine'lla. A synonym of **Hippomane**.

Mandarin Orange. *Citrus nobilis*.

Mandevilla. (Named after H. J. Mandeville, Esq., formerly Consul at Buenos Ayres. Nat. ord., *Apocynaceæ*; Tribe, *Echitidæ*. Allied to *Echites*.)

Stove 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. It does little good as a pot-plant, but is splendid when planted out and allowed room in a warm greenhouse or stove, where fine climbers are prized.

M. suaveolens. 20. White. June. Buenos Ayres. 1837. B. R. 1840, t. 7.

Mandiro'la. A synonym of **Achimenes**.

Mandrago'ra. (From *mandra*, an ox-stall, and *agaurus*, cruel; alluding to its poisonous effects when accidentally given to cattle with their fodder. Nat. ord. *Solanaceæ*; Tribe, *Atropeæ*.)

Hardy herbaceous perennials. Seeds; divisions of roots. Rich loam.

- M. autumnalis*. 1. Blue. September. S. Europe. This very handsome plant is supposed to be the mandrake of the Old Testament. Swt. Fl. Gard. ser. 2, t. 325. Syn., *Atropa Mandragora*.
 — *officina'rum*. 3. Blue. May. Levant. Common Mandrake.
 — *praecox*. 1. Yellow. March. Switzerland. 1819. Swt. Fl. Gard. t. 198.

Manettia. (Named after X. Manetti, an Italian botanist. Nat. ord., *Rubiaceæ*; Tribe, *Cinchonææ*. Allied to *Bouvardia*.)

Stove evergreen or herbaceous climbers. Cuttings of the young shoots in sandy soil, under a bell-glass; such kinds as *coccinea* also by division of the fleshy, tuberled-like roots as growth is commencing; sandy peat and fibry loam.

- M. bicolor*. 3. Scarlet, yellow. March. Rio Janeiro. 1843.
 — *coccinea*. 20. Scarlet. June. Guiana. 1806.
 — *cordifolia*. 5. Scarlet. August. Buenos Ayres. B. M. t. 3202. Syn., *M. glabra*.
 — *glabra*. Swt. Fl. Gard. ser. 2, t. 233. See *M. cordifolia*.
 — *Lygii* stum. 20. Pink. March. Cuba. 1822.
 — *micans*. Scarlet. Peru. 1865.
 — *splendens*. Crimson. May. Caraccas. 1840.
 — *uniflora*. 3. Rose. November. St. Martha. 1844.

Mangifera. Mango-tree. (From *mango*, the Hindoo name of the fruit, and *fero*, to bear. Nat. ord., *Anacardiaceæ*; Tribe, *Anacardiææ*.)

The Mango is the most esteemed fruit in India, having a grateful perfumed flavour. Stove evergreen trees, from the East Indies. Cuttings of the nearly ripe shoots in sand, under a glass, and in heat; peat and rich loam.

- M. foetida*. 20. Red. Malacca. 1824.
 — *glauca*. See *Elaeodendron glaucum*.
 — *indica*. 20. White. July. Tropical India. 1890. B. M. t. 4510.
 — *oppositifolia*. Yellow. June. Pegu. 1823. Syn., *Bonea burmanica*.

Manglesia. (Named after Captain Mangles, and his brother, Robert Mangles, Esq., of Sunning Hill, distinguished patrons of botany. Nat. ord., *Proteaceæ*; Tribe, *Grevillieæ*.) See *Grevillea*.

- M. glabra*'ta. See *Grevillea glabrata*.
 — *vestita*. 6-9. Purple. May. Swan River. A synonym of *Grevillea vestita*.

Mangli'la. A synonym of *Myrsine*.

Mango Ginger. *Cu'rcuma ama'da*.

Mangosteen. *Garci'nia*.

Mango Tree. *Mangi'fera*.

Mangrove. *Rhizo'phora*.

Manicaria. (From *manica*, a glove, referring to the spathe, or rolling-leaf which surrounds the flower-stem. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

Stove palm. Seeds in a strong moist heat, in a hotbed; rich, sandy loam.

- M. sacci'fera*. 30. S. America. 1823. Mart. Palm. t. 124. Syn., *Pilophora testicularis*.

Ma'nihot. (The Brazilian name of the root. Nat. ord., *Euphorbiaceæ*; Tribe, *Crotoneææ*. Syn., *Janipha*. Allied to *Jatropha*.)

Greenhouse or stove evergreen shrubs; loam, peat, sand, and a little charcoal. Cuttings of firm shoots in sand under a bell-glass.

- M. æsculifolia*. 3. Central America. 1826. Syn., *Janipha æsculifolia*.

- M. carthaginensis*. 3. July. Carthagen. 1826. Syns., *Janipha Læstingii* and *Jatropha carthaginensis*. Jacq. Vind. iii. t. 77.
 — *digitata*. Blue, green. July. Australia. 1820.

- *diversifolia*. Perhaps a species of *Adriana*.
 — *foetida*. 3. Brown. Mexico. 1824. Syn., *Janipha foetida*.
 — *gracilis*. Brown, green. July. Brazil. 1822
 — *tenuifolia*. Blue, brown. June. Brazil. 1822. Syn., *M. tenuifolia*.
 — *sinuata*. Brown. July. Brazil. 1824.
 — *tenuifolia*. See *M. gracilis*, var. *tenuifolia*.
 — *utilissima*. 3. Brown. July. S. America. 1739. Syns., *Janipha Manihot*, B. M. t. 3071, *Jatropha Læstingii* and *J. Manihot*.

Manna. *Alha'gi*.

Manna Ash. *Fra'xinus o'rnus*.

Mantisia. Opera Girls. (Named after an insect, *Mantis*, to which the flowers have been compared. Nat. ord., *Scitamineæ*; Tribe, *Zingibereæ*. Allied to *Ginger*.)

Stove herbaceous perennials, from the East Indies. Division of the roots, as growth commences; sandy peat and fibry loam, well drained.

- M. saltatoria*. 1. Purple. July. 1808. B. M. t. 1320. Syn., *Globba purpurea*. Andr. Rep. t. 615.
 — *spatulata*. 1. Blue. June. 1823.

Manulea. (From *manus*, the hand; from a faint resemblance in the divisions of the flower. Nat. ord., *Scrophulariaceæ*; Tribe, *Manuleæ*. 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.

- M. Cheiranthus*. 1. Orange. August. 1795.
 — *cordata*. See *Chænostoma cordata*.
 — *foetida*. See *Chænostoma foetida*.
 — *hispidula*. See *Chænostoma hispidula*.
 — *oppositifolia*. See *Chænostoma hispidula*.
 — *pedunculata*. See *Lyperia pedunculata*.
 — *pinnatifida*. See *Lyperia pinnatifida*.
 — *rubra*. 1½. Red. June. 1790.
 — *violacea*. See *Lyperia violacea*.
 — *viscosa*. See *Sphærandra 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 particularized by possess-

ing 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, etc., 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 manure 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, etc. But a mere mass of cotton, by means of capillary attraction, will ab-

sorb 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-manure 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 fertilizing 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.

Mineral manures assist plants by destroying predatory vermin and weeds. This is not a property of animal and vegetable manures—they foster both those enemies of our crops. Salt and lime are very efficient destroyers of slugs, snails, grubs, etc.

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 organized 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. (Probably derived from the vernacular name. Nat. ord., *Cyperaceæ*; Tribe, *Hypolytrææ*.)

Stove, grass like plant. Division of the roots; seeds. Sandy loam and peat.

M. lucida. Young leaves tinged with red; older ones bright green, with three parallel nerves. Borneo. Ill. Hort. t. 557.

Maple. *A'cer.*

Ma'ppa. (Nat. ord., *Euphorbiaceæ*.) A synonym of **Macaranga**.

M. Portea'na. See **Macaranga Portea'na.**

Maranhao Nuts. *Bertholle'tia.*

Mara'nta. Arrow-root. (Named after *B. Maranti*, an Italian botanist. Nat. ord., *Scitamineæ*; Tribe, *Marantææ*. Allied to *Canna*.)

A kind of arrow-root is obtained from the

rhizome, or fleshy roots, of some of the species. Ornamental stove evergreens; division of the roots in spring; rich, sandy loam, with nodules of peat.

M. angustifolia. B. M. t. 2398. See *M. Touchat*. — *argentea.* Leaves silvery grey with deep green marks. Brazil. 1884.

— *argyrea.* See *Calathea argyrea*.

— *arundinacea.* 6 to 10. White. Tropical America.—Arrowroot. B. M. t. 2307.

— — *variegatum.* Syn., *Phrynium variegatum.*

— *asymmetrica.* Leaf much wider on one side of the midrib than on the other. 1882.

— *Baraquin'sii.* See *Calathea Baraquiniana*.

— *bellula.* See *Calathea bellula*.

— *bicolor.* $\frac{3}{4}$. White. July. Brazil. 1823.

— — B. R. t. 786.

— — *minor.* $\frac{1}{2}$. White. April. S. Amer. 1828.

— — B. C. t. 1924.

— *chimboracensis.* Ecuador. 1869. Ill. Hort.

t. 1871. Syn., *Calathea chimboracensis*.

— *concinna.* Yellow. S. America. 1874.

— *conspicua.* Leaves dark green, with distant yellowish-green bands; under surface purplish. Brazil. 1885.

— *depressa.* White; leaves pale green in centre, with brown blotches. Brazil.

1880. Belg. Hort. 1880, t. 11.

— *fasciata.* See *Calathea fasciata*.

— *gratiola.* Leaves silvery green, with green midrib. Brazil. 1884.

— *iconifera.* Perhaps a synonym of *Calathea Makoyana*.

— *illustris.* Flor. Mag. t. 237. See *Calathea illustris*.

— *Kerchoviana.* Ill. Hort. t. 353. See *Calathea Kerchoviana*.

— *Legrelliana.* See *Calathea Legrelliana*.

— *leopardina.* See *Calathea leopardina*.

— *leptostachya.* Brazil. Syns., *Phrynium leptostachyum* and *Thalia leptostachya*.

— *leuconera.* Leaves green, purple beneath, midrib light green. Fl. Ser. t. 2364-5.

— *Lindeniana.* Belg. Hort. 1870, t. 1. See *Calathea*.

— *lined* t. 1. 1848.

— — *rosea.* 1. 1848.

— *Luschnathiana.* Brazil. 1857. Syns., *Thalia*

and *Phrynium Luschnathiana*. Gf.

t. 220.

— *majestica.* See *Calathea ornata*.

— *Makoyana.* Pale green with darker blotches, brown beneath. Syn., *M. olivaris*. Flor.

Mag. new ser. t. 53.

— *malaccensis.* See *Alpinia malaccensis*.

— *Massangeana.* Leaves, centre bluish-green,

next deep purplish, margin bright green;

under surface purple. Flor. Mag. new

ser. t. 234.

— *Maze'lii.* Leaves green, with two broad grey

bands. S. America. 1871.

— *musaica.* Leaves glossy green. Brazil.

1884.

— *nigrocosta'ta.* Leaves bright green above,

purple beneath. Syn., *Calathea (Ma-*

rantha) nigrocostata. Ill. Hort. new ser.

t. 144.

— *nitida.* Leaves shiny bright green. Brazil.

1884.

— *obl'qua.* See *Ischnosiphon*.

— *olivaris.* See *M. Makoyana*.

— *orbifolia.* See *Calathea*.

— *ornata.* Fl. Ser. t. 413-4. See *Calathea ornata*

— *pacifica.* See *Calathea pacifica*.

— *pardina.* See *Calathea pardina*.

— *picturata.* See *Calathea picturata*.

— *pl'ita.* Leaves with 6 to 8 dark green

blotches on each side of the midrib.

Brazil. 1884.

— *Portea'na.* Bahia. 1859.

— *princeps.* See *Calathea princeps*.

- M. pulchella*. See *Calathea pulchella*.
 — *regalis*. See *Calathea*.
 — *Riedelia*'na. Brazil. 1858.
 — *roseo-picta*. Fl. Ser. t. 1875. See *Calathea*.
 — *sagoria*'na. Leaves green-banded. S. America. 1862.
 — *sanguinea*. Brazil. Fl. Ser. t. 785. Syn., *Phrynium sanguinem*. B. M. t. 4646.
 — *smaragdi*'na. Leaves emerald-green, with dark-green central stripe. Ecuador. 1870. Syn., *Calathea smaragdina*.
 — *speciosa*. Leaves bright green with white bands. Brazil. 1884.
 — *spectabilis*. Brazil. Syn., *Stromanthe spectabilis*. Lem. Jard. Fl. t. 401.
 — *splendida*. See *Calathea splendida*.
 — *striata*. White-streaked. Philippines. *Majestica* is a variety.
 — *Touchat*. 8. Red. July. E. Ind. 1819. Syn., *M. angustifolia*.
 — *undulata*. See *Calathea undulata*.
 — *Vanden Heekeri*. See *Calathea Vanden Heekeri*.
 — *variegata*. See *Calathea*.
 — *Veitchii*. G. C. 1870, p. 92A. See *Calathea Veitchiana*.
 — *virginalis*. See *Calathea virginialis*.
 — *vittata*. See *Calathea vittata*.
 — *Wagneri*. See *Calathea roseo-picta*, var. *Wagneri*.
 — *Wallisii*. See *Calathea Wallisii*.
 — *Warzewiczii*. Fl. Ser. t. 939-940. See *Calathea*.
 — *Wiotii*. See *Calathea Wiotii*.
 — *zebrina*. B. R. t. 380. See *Calathea*.

Marattia. (Named after *J. F. Maratti*, an Italian botanist. Nat. ord., *Filices—Marattiaceæ*.)

Very ornamental stove or greenhouse evergreen ferns. Division in spring, or by spores; peat lumpy sandy, and coarse sand.

- M. alata*. 1½. Brown. August. Jamaica. 1798.
 — *cicutifolia*. Brown, yellow. Brazil. 1843.
 — *Cooperi*. Australasia. 1863. Greenhouse.
 — *fraxinea elegans*. 8. Brown, yellow. Norfolk Island.
 — *lævis*. A synonym of *M. alata*.
 — *purpurascens*. 6. Ascension Island.
 — *cristata*. Fronds crested.
 — *Raddiana*'na. Brazil. 1878. Syn., *Gymnotheca Raddiana*.

Marcgravia. (After *Georg Marcgraf*, who wrote on the natural history of Brazil. Nat. ord., *Ternstroemiaceæ*; Tribe, *Marcgraviææ*.)

- M. dubia*. Probably a species of *Pothos*.
 — *indica*. Wall climber. 1884.
 — *paradoxa*. Tropical America.
 — *umbellata*. Tropical America.

Margins of streams and other ornamental waters must always accord with the surroundings 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., *Rosaceæ*; Tribe, *Poteriææ*. Allied to *Agrimonia*.)

Hardy or half-hardy evergreen. Cuttings of half-ripened shoots in April or May, in sand, under a bell-glass. Seeds. Sandy peat and loam.

- M. setosus*. 2. Green. Peru. 1829.

Maria'lia. See **Tovomita**.

Maria'nthus. (From *mairein*, to shine, and *anthos*, a flower; referring to the bright, various-coloured flowers. Nat. ord., *Pittosporææ*. Allied to *Sollya*.)

Greenhouse, trailers or climbers. Cuttings of young side-shoots in sand, under a bell-glass, in May; sandy loam, fibry peat, with potsherds and charcoal, to keep the soil rather open.

- M. cœruleo-punctatus*. 4. Blue. April. Swan River. 1840. B. M. t. 3893. Syn., *Campylanthera elegans*.
 — *Drummondiana*'rus. Lilac. W. Australia. 1865. Evergreen. B. M. t. 5521.
 — *fruticosus*. Swan River. 1841.
 — *ringens*. Golden-red. November. Swan River. Syn., *Calopetalon ringens*.

Marica. (From *maraino*, to flag; referring to the ephemeral nature of the flowers, which last hardly a day. Nat. ord., *Irideæ*; Tribe, *Moræææ*. Allied to *Iris*.)

Greenhouse herbaceous perennials. By seed, sown in a slight hotbed in spring, or by division of the rhizomes. Sandy loam, peat, and leaf-mould.

- M. aphylla*. See *Bobartia aphylla*.
 — *brachypus*. Yellow, red-brown. Trinidad. 1871. Syn., *Cypella brachypus*.
 — *cœrulea*. 2. Blue. May. Brazil. 1818. B. M. t. 713.
 — *cælestis*. 3. Blue. Brazil. 1829.
 — *gladiata*. B. R. t. 229. See *Bobartia gladiata*.
 — *gracilis*. 2. Yellow, blue. August. Brazil. 1830. B. M. t. 3713.
 — *humilis*. White, yellow, brown, blue, orange-red. Brazil. 1825. B. C. t. 1081. Syn., *M. humilis*, var. *princeps*.
 — *lutea*. B. M. t. 3809. See *M. lutea*.
 — *iridifolia*. B. R. t. 646. See *Sisyrinchium iridifolium*.
 — *longifolia*. Striped. August. Brazil. 1830.
 — *lutea*. ½. Yellow. April. Brazil. 1840. Syn., *M. humilis*, var. *lutea*.
 — *martinicensis*. See *Lansbergia martinicensis*.
 — *Northiana*'na. 4. Yellow. June. Brazil. 1789. B. M. t. 654. Syn., *Moræa Northiana*. And. Rep. t. 255.
 — *paludosa*. B. M. t. 646. See *Cipura paludosa*.
 — *plicata*. B. M. t. 655. See *Eleutherine plicata*.
 — *Sabini*'ni. 2. Yellow. August. St. Thomas. 1822. B. C. t. 1164.
 — *spathacea*. See *Bobartia spathacea*.

Marigold. *Cale'ndula officinalis*.
 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). *Tagetes erecta*.

Marigold (French). *Tagetes patula*.

Marigold (Great Cape). *Calendula hybrida*.

Mar'la. (From *marile*, live embers or sparks; referring to pellucid dots on the leaves, or yellow fringe round the seed-pod. Nat. ord., *Ternströmiaceæ*; Tribe, *Bonnetiææ*. Allied to *Mahurea*.)

Ornamental stove evergreen shrub. Cuttings of shoots, when short, and getting firm at their base; sandy peat and loam, well-drained, and open.

M. racemosa. 12. Yellow, green. August. W. Ind. 1827.

Mar'scus. (From the Celtic *mar*, a swamp; the habitat of this genus. Nat. ord., *Cyperaceæ*.)

M. umbilicatus. Syns., *M. sparganifolius* and *Cyperus natalensis*.

Marjoram. (*Ori'ganum*.) *O. majorana*, Sweet or Summer Marjoram. *O. heracleoticum*, Winter Marjoram. *O. onites*, 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, etc., 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. majorana*) 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, etc., 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, etc.; 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 un-gathered 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. *Anacardium*.

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., *Cornaceæ*. Allied to *Nyssa*.)

Greenhouse evergreen shrub. Cuttings of

shoots, or rather, short, stubby side-shoots, taken off with a heel, in sand, under glass; peat and loam.

M. begoniæfolia. 4. Yellow. China. B. R. 1838, t. 61.

Marrubium. Horehound. (From the Hebrew *marrob*, bitter juice. Nat. ord., *Labiatae*; Tribe, *Stachydeae*.)

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. affine. See *M. leuonoides*.

— *alyssum*. 1½. Purple. July. Spain. 1597.

— *apulum*. See *M. vulgare*, var. *lanatum*.

— *astracanicum*. 1½. Blue. Orient. Jacq. Ic. t. 109.

— *caudatifolium*. 2. White. July. Levant. 1732.

— *catartæfolium*. 1½. Purple. July. Levant. 1819.

— *leuonoides*. 1½. Purple. July. Caucasus. 1819. Syn., *M. affine*.

— *propinquum*. White. June. 1836.

— *vulgare*. 2. White. July. Britain.

— *lanatum*. White. August. Britain.

Marsdenia. (Named after W.

Marsden, author of a History of Sumatra. Nat. ord., *Asclepiadaceae*; Tribe, *Marsdeniæ*. Allied to *Pergularia*.)

Stove evergreen, or half-hardy or hardy, twining shrubs; *flavescens* is a pretty climber. 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.

M. erecta. 2. White. July. Syria. 1597. Syn., *Cynanchum erectum*. Jacq. Vind. t. 38.

— *flavescens*. 20. Yellowish. August. New S. Wales. 1830. B. M. t. 3289.

— *loniceroides*. 6. Scarlet. July. Brazil. 1825. Syns., *Baetera loniceroides* and *Harrisonia loniceroides*. B. M. t. 2699.

— *maculata*. 20. Green, purple. June. New Grenada. 1834. B. M. t. 4299.

— *suaveolens*. 2. White. July. New S. Wales. 1816. B. R. t. 489.

— *tenacissima*. Yellow. June. E. Ind. 1806.

Marshallia. (Named after H. Marshall, a botanical author. Nat. ord., *Compositæ*; Tribe, *Helianthoidæ*.)

Hardy herbaceous plants, with purplish flowers, from Carolina. Division of the plants in spring, seeds; common, sandy loam; *angustifolia* likes the addition of peat; they require a dry, elevated place in winter, and the protection of an evergreen bough.

M. angustifolia. 2. July. 1800.

— *cæspitosa*. 1. Purple, white. July. Texas. 1837. B. M. t. 3704.

— *lancoleta*. 1½. June. 1812.

— *latifolia*. 1½. June. 1806.

Marsh Cinquefoil. *Potentilla Comarum*.

Marsh Mallow. *Althæa*.

Marsh Marigold. *Caitha palustris*.

Marsilea. (In honour of Count L. F. Marsigli, founder of the Bologne Academy of Sciences. Nat. ord., *Marsiaceae*.)

Half-hardy aquatic. See AQUATICS

M. quadrifolia. S. Europe. 1820.

Martagon. *Lilium martagon*.

Martinezia. (In honour of *Balthassar Martinez*, a Spanish naturalist. Nat. ord., *Palmeæ*; Tribe, *Coccoineæ*.)

Stove palms. For cultivation, see COCOS and CARYOTA.

M. carotæfolia. 40. New Grenada. 1845. B. M. t. 6864.

— *erosæ*. W. Indies. 1871. G. C. 1875, iii. p. 473.

— *granatensis*. Columbia. 1874.

— *leucophæa*. Columbia. 1875.

— *Lindenia*. 18. Columbia. 1869. Ill. Hort. xix. t. 99.

Martynia. (Named after Dr. Martyn, once professor of botany at Cambridge. Nat. ord., *Pedalineæ*; Tribe, *Martyniæ*. Allied to *Pedicularia*.)

Half-hardy annuals. Seeds, sown in a gentle 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 the open border.

M. Craniolaria. See *Craniolaria annua*.

— *dianthria*. 1½. Red. July. New Spain. 1831. B. R. t. 2001.

— *fragrans*. 2. Crimson. June. Mexico. 1840. B. R. 1841, t. 6.

— *hirtillabia*. Yellow, purple, white. February. New Grenada.

— *longiflora*. See *Rogeria longiflora*.

— *ultra*. 1½. Yellow. July. Brazil. 1825. B. R. t. 934.

— *proboscidea*. ½. Light blue. July. Mexico. 1738. B. M. t. 1056. Syns., *M. annua* and *M. louisiana*.

Marvel of Peru. *Mirabilis*.

Mascarenhasia. (In honour of Don Mascarenhas, a Portuguese naval commander, who discovered Bourbon in 1545. Nat. ord., *Apocynaceæ*; Tribe, *Echitideæ*.)

Stove evergreen climber. For culture, see DIPLADENIA.

M. Curnoviana. Carmine. August. Mada gascar. 1881. B. M. t. 6612.

Masdevallia. (Named after J. Masdevall, a Spanish botanist. Nat. ord., *Orchideæ*; Tribe, *Epidendree-Pleurothalleæ*. Allied to *Ocymeria*.)

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. abbreviata. ½. White, purple-dotted. Columbia? 1878.

— *acorchordonia*. Ecuador. 1874. G. C. 1885, xxiii. p. 174.

— *æquiloba*. Reddish. Mountains of Peru. Gf. t. 285.

— *ambilis*. ½. Crimson. Columbia. 1874.

— *lineata*. Pink, orange, purple. Peru. 1875.

— *anchorifera*. Purple, ochre. Costa Rica. 1884.

— *Arminii*. Rose, tinged with purple. 1882.

— *astuta*. ½. Yellow, brown. Costa Rica. 1886.

— *attenuata*. Greenish-white, yellow. Costa Rica. 1871.

— *Backhousiana*. Columbia. 1879.

— *Barlaeana*. Scarlet. Peru. 1876.

- M. be'lla*. Purplish-brown, yellow. Columbia. 1878.
- *biflora*. White, blackish-purple, purple. 1890
- *bre'vis*. Yellow, purple, orange, brown. British Guiana. 1884.
- *calu'ra*. Brownish-purple, white. 1883.
- *campylog'essa*. Greenish-white, blackish. 1878.
- *Card'e'ri*. White, brownish-purple. 1883. G. C. 1883, xx, p. 181, fig. 30.
- *cauda'ta-Estra'de*. Garden hybrid. 1889.
- *chelo'sa*. White, mauve, brown. 1880. Hybrid between *M. Veitchiana* and *M. amabilis*.
- — *spl'endens*. Hybrid between *M. amabilis* and *M. Veitchiana*.
- *Chestert'o'ni*. Greenish-yellow, with black spots, orange. Columbia. 1883.
- *Chime'ra*. Flower-stem 2 feet long. Blackish, yellow, dotted. Columbia. 1880. See under *M. Wallisii*.
- — *gorgo'na*. Canary-yellow, red-purple, orange-red. Syn., *M. gorgona*.
- *civi'lis*. Yellow, brown, purple. Peru. 1864. B. M. t. 5476.
- *cocci'nea*. Scarlet. April. Pamplona. Rchb. Xen. i. t. 74.
- — *conchifl'ora*. A larger-flowered variety. Syn., *M. Harryana*, var. *conchiflora*.
- *coria'cea*. $\frac{1}{2}$. Yellowish, brownish-purple. Columbia. 1872.
- *cornicula'ta*. $\frac{1}{2}$. Cinnamon-brown. Columbia. 1878.
- *costarice'nsis*. White, yellow. Costa Rica. 1890.
- *Courtauldia'na*. Garden hybrid between *M. rosea* and *M. Shuttleworthii*.
- *cuculla'ta*. Dark glossy purple, whitish, yellow. Columbia. 1883.
- *cu'lex*. A synonym of *Pleurothallis macroblepharis*.
- *cupula'ris*. Light and dark brown. Costa Rica. 1888.
- *Dav'ii*. $\frac{1}{2}$. Orange-yellow. Peru. 1874.
- *Daya'na*. See *Cryptophoranthus Dayanus*.
- *demi'ssa*. Yellow, brownish-purple. Costa Rica. 1887.
- *Edua'r'di*. $\frac{1}{2}$. Red. Columbia. 1880.
- *elepha'nticeps*. Yellow, purple. New Grenada. Fl. Ser. t. 997. In cultivation?
- *ephip'pium*. 1. Yellowish, dark purplish-brown. Columbia, Peru. 1874. Syn., *M. Trochilas*.
- *erina'cea*. Ochre, purple, orange. 1881.
- *erythrocha'ete*. White, pale yellow, reddish purple. Central America. 1882.
- *Estra'de*. Yellow, white, violet-purple. April. Columbia. 1874. B. M. t. 6171.
- — *delica'ta*. Yellow, light purple. 1882.
- *falca'ta*. Hybrid between *M. Lindeni* and *M. Veitchii*. 1891.
- *fascia'ta*. Columbia. 1881.
- *fenestra'ta*. B. M. t. 4164. See *Pleurothallis atropurpurea*.
- *flavo'la*. Light yellow. Costa Rica. 1884.
- *floribu'nda*. $\frac{1}{2}$. Brownish-yellow. November. Brazil. 1843.
- *Frase'ri*. Hybrid between *M. ignea* and *M. coccinea*. 1882.
- *fulve'scens*. Orange, white, light buff and brown. New Grenada. G. C. 1890, viii, p. 325, fig. 65.
- *Gaira'na*. Garden hybrid. 1884.
- *Galenia'na*. Orange, purple, sulphur, dark brown. Garden hybrid. 1887.
- *Garga'ntua*. Dull yellow, purple. Columbia. 1876.
- *Gaskellia'na*. Mauve-purple, yellow. 1883.
- *gemma'ta*. Ochre, orange, purple. 1883.
- *gibber'osa*. $\frac{1}{2}$. Dark-reddish, green. Columbia. 1876.
- M. glaphyrantha*. Purple, yellow. Garden hybrid. 1886.
- *gracile'nta*. $\frac{1}{2}$. Blackish-purple. Costa Rica. 1875.
- *Gusta'vi*. Yellowish, dark purple. Columbia. 1875.
- *guttula'ta*. Pale yellow with purple spots. 1890.
- *Harry'ana*. $\frac{1}{2}$. Magenta. Columbia. 1871. Syn., *M. Lindeni*.
- — *armeni'aca*. Apricot, red, yellow. Columbia. Warn. Orch. Alb. t. 224.
- *de'cora*. Rosy-purple, crimson. Columbia. 1888. Warn. Orch. Alb. t. 344.
- — *grandifl'ora*. Rose-purple. Columbia.
- — *spl'endens*. Dark magenta-purple. Rchb. ser. 2, i. t. 26.
- *hetero'ptera*. Yellow, blackish-purple. Columbia. 1875.
- *hieroglyphica*. Brown-purple. New Grenada. 1882.
- *Hinksia'na*. Ochre, orange. Garden hybrid. 1887.
- *Houttea'na*. $\frac{1}{2}$. White, purple. July. Columbia. 1874.
- *Hu'bschii*. An error for *Maxillaria Hub-schii*.
- *hypod'raeus*. Purplish-violet, white. Columbia? 1878.
- *i'gnea*. $\frac{1}{2}$. Fiery-red. Columbia. 1871.
- — *auranti'aca*. Red.
- — *Bodde'rti*. Crimson, yellow. Columbia. 1879.
- — *Marshallia'na*. $\frac{1}{2}$. Fiery-red, yellow. Columbia. 1872.
- — *Massange'na*. Dark scarlet. Warn. Orch. Alb. t. 273.
- — *Sobartia'na*. Mauve-purple.
- *inequa'lis*. $\frac{1}{2}$. Whitish. Columbia. 1874.
- *infla'ta*. Orange-yellow. 1881.
- *infra'eta*. Pale yellow. April. Brazil, 1835
- — *purpu'rea*. Bright purple-mauve, whitish. 1883.
- *iono'charis*. $\frac{1}{2}$. White, purple, yellow. September. Peru. 1875.
- *Klaboch'rum*. White, yellow. S. W. Amer. 1876.
- *la'ta*. Reddish-brown, yellowish. Central America. 1877.
- *Lekma'nni*. Yellow-orange. Ecuador. 1877.
- *leontog'lossa*. White, purple. Columbia? 1881.
- *Linde'ni*. See *M. Harryana*.
- *Livingstone'na*. Yellowish, purple-brown. Panama. 1874.
- *longicauda'ta*. Rose-coloured. Brazil. 1868.
- *Lo'wii*. Whitespotted with purple; lip maroon-purple. Columbia. 1890. G. C. 1890, viii, p. 269, fig. 44.
- *ludibu'nda*. Light yellow, with purple spots. Columbia. 1882.
- *macrochi'la*. Yellowish-green with black spots, orange. Columbia. 1890.
- *macroda'ctyla*. Greenish-yellow, blackish-purple. Columbia. 1872.
- *macru'ra*. 1. Columbia. 1874.
- *macula'ta*. Yellow, purple, green. New Grenada. 1873. Fl. Ser. t. 2150.
- — *fla'va*. Tawny yellow.
- *margin'e'la*. White, green, orange. 1883.
- *mela'nopus*. $\frac{1}{2}$. White, purple, yellow. Peru. 1874.
- *melanoxa'ntha*. Yellow, brownish. Columbia. 1875.
- *milita'ris*. Scarlet. 1880.
- *Moore'na*. Greenish, chocolate. 1884.
- *Munda'na*. Hybrid between *M. Veitchii* and *M. ignea*, var. *aurantiaca*.
- *musco'la*. Yellowish, reddish. Columbia. 1875.
- *myriosti'gma*. Yellowish, brown. Mexico. 1873. Syn., *M. myriostigma*.
- *nidi'flea*. Yellow, purplish. Ecuador. 1879.
- *Norma'nni*. See *M. Reichenbachiana*.

- M. nycteri'na*. $\frac{1}{2}$. Pale yellow, reddish-brown. Columbia. 1873. Flor. Mag. new. ser. t. 150.
- *Obrenia'na*. Yellow with maroon spots. 1890.
- *pachya'ntha*. Yellowish-ochre, or green lilac-brownish. Columbia. 1884.
- *pachyu'ra*. Yellow, brownish red. Peru. 1874.
- *Parlatorea'na*. Scarlet, with violet sheen. Peru. 1879.
- *Peristev'ria*. $\frac{1}{2}$. Honey-colour, purple-brown. Columbia. 1873.
- *pictura'ta*. $\frac{1}{2}$. White, green, yellow. Columbia. 1882.
- *platygl'osa*. Light yellow. 1883.
- *platyrh'chis*. Light buff, green, orange. Costa Rica. 1888.
- *polysti'cta*. $\frac{1}{2}$. White, violet. Peru. 1874.
- *crassicauda'ta*. Tails short, stout. 1882.
- *porcel'liceps*. Yellow, white, brown, purple. 1883.
- *psittaci'na*. Green, yellow, purplish. Columbia? 1876.
- *pubivina'ris*. Olive-green, purple. 1880.
- *puncta'ta*. Pale greenish with dark purplish-brown spots. 1888.
- *pusi'ola*. Yellow. Columbia. 1887. The smallest known species of the genus.
- *radio'sa*. Brown, yellow, blackish-purple, white. Columbia. 1877.
- *Reichenbachia'na*. Yellowish, blood-red. Costa Rica. 1875. Syn., *M. Normanni*.
- *auranti'aca*. Orange-red. 1883.
- *Roe'zhi*. Blackish-purple. Columbia. 1880.
- *ru'bra*. Creamy yellow, mottled with chocolate inside. Warn. Orch. Alb. t. 243.
- *Ralfea'na*. Crimson-brown, yellow. 1890.
- *rosea*. Rose-purple. Bolivia. 1880.
- *Schli'mi*. Yellow with brownish-red spots. Venezuela. 1884.
- *Schroederia'na*. Deep purple, white. Journ. Hort. ser. 3, 1890, p. 557, fig. 74.
- *se'nclis*. Reddish-brown, white. 1885.
- *seu'e'ra*. Maroon, yellowish. Columbia. 1875.
- *Shuttleworthii*. $\frac{1}{2}$. Yellowish, purple. Columbia. 1875.
- *xantho'corys*. Yellow, brown. 1882.
- *si'mula*. Purplish. Columbia. 1875.
- *soro'cula*. Greenish, purple, white. 1887.
- *spect'rum*. Columbia. 1875.
- *sple'nida*. Scarlet, violet, white. Andes. 1878. Natural hybrid. Perhaps synonymous with *M. Parlatoreana*.
- *ste'lla*. Hybrid between *M. Estradae* and *M. Harryana*. 1890.
- *striate'lla*. White with cinnamon stripes; lip white, yellow, purple. 1886.
- *swerticefo'lia*. Ochre, brown, purple. Columbia. 1880.
- *to'ra*. Light ochre, purple, yellow. 1883.
- *tovar'e'nsis*. White. Tovar in Columbia. 1885. B. M. t. 5505. Syn., *M. candida*.
- *triangula'ris*. Pale ochre with brownish-purple spots, white. Winter. Venezuela. 1842.
- *trianste'lla*. $\frac{1}{2}$. Brown, yellow. Costa Rica. 1876.
- *tricho'te*. $\frac{1}{2}$. Rich brownish-purple, orange. 1883.
- *tricolor*. Purple. New Grenada. 1882.
- *tridactyli'tes*. Yellow, brownish-purple, orange.
- *triglo'chin*. $\frac{1}{2}$. Red, yellow. Ecuador. 1878.
- *troglydy'tes*. Purple-brown, yellow, white. Columbia. 1877.
- *Tubea'na*. 1. Violet-brown, yellowish, white. Ecuador. 1878.
- *tubulo'sa*. White. July. Merida.
- M. urosta'chya*. Cinnamon, orange. 1882.
- *Veitchia'na*. Orange-scarlet, shot with purple. Peru. 1867. A lovely species.
- *bifl'ora*. Two-flowered. 1883.
- *veli'fera*. Green, brown, yellow, purple. Columbia? 1878.
- *veluti'na*. $\frac{1}{2}$. Rosy-violet, white. Columbia. 1875.
- *vespert'i'lio*. Yellow, brownish-purple. Columbia. 1877.
- *Wageneria'na*. $\frac{1}{2}$. Yellow. Central America. B. M. t. 4921.
- *Walli'sii*. $\frac{3}{4}$. Yellow, spotted with dark blood-red. Columbia. 1872. This is often cultivated as *M. Chimera*.
- *disco'i'dea*. Sepals with a white spot near their apices.
- *Wendlandia'na*. White, with mauve lines outside. New Grenada. 1887.
- *Winnia'na*. Purple. 1881.
- *xanthi'na*. Yellow, violet. 1880.
- *xanthoda'ctyla*. $\frac{1}{2}$. Whitish, yellow, violet. Tropical America. 1877.

Massa'ngae. (Dedicated to *M. Massange de Louvrea*, a distinguished Belgian horticulturist. Nat. ord., *Bromeliaceae*; Tribe, *Tillandsieae*.) See **Caraguata**.

- M. hieroglyphica*. Rev. Hort. 1878, p. 175. See *Tillandsia hieroglyphica*.
- *Lindenii*. III. Hort. t. 309. See *Caraguata Lindenii*.
- *Morrenia'na*. See *Caraguata Schlumbergii*.
- *musica*. Belg. Hort. 1877, tt. 8-9. See *Caraguata musica*. B. M. t. 6675.
- *santovie'nsis*. South Brazil. 1882.
- *tigri'na*. See *Tillandsia hieroglyphica*.
- *vitta'ta*. See *Caraguata vittata*.

Masso'nia. (Named after *F. Masson*, a botanical traveller in South Africa. Nat. ord. *Liliaceae*; Tribe, *Alliace*. 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*. White. Scent of almonds. 1889.
- *angustifo'lia*. White. April. 1775. B. M. t. 736.
- *brachypus*. White. 1875.
- *ca'ndida*. $\frac{1}{2}$. April. B. R. t. 694.
- *corda'ta*. White, reddish in the throat. Winter. Jacq. H. Schoenb. t. 459.
- *corymbosa*. B. M. t. 991. See *Hyacinthus corymbosus*.
- *echinota'ta*. $\frac{1}{2}$. May. 1790.
- *ensifo'lia*. B. M. t. 554. See *Polyzema pycnæa*.
- *grandifo'ra*. B. R. t. 958. See *M. obovata*.
- *lancafo'lia*. White, reddish in the throat. Winter. Jacq. H. Schoenb. t. 456.
- *latifo'lia*. $\frac{1}{2}$. March. 1775. Jacq. H. Schoenb. t. 455. *M. latifolia* of B. M. t. 848 is *M. sanguinea*.
- *longifo'lia*. $\frac{1}{2}$. March. Jacq. H. Schoenb. t. 457.
- *muricata*. White. April. 1790. B. M. t. 559.
- *obova'ta*. White, yellowish. Winter. Jacq. H. Schoenb. t. 458. Syn., *M. grandiflora*.
- *odora'ta*. B. M. t. 5891. See *Polyzema odorata*.
- *parcifo'ra*. Ait. Hort. Kew. ed. 2, ii. p. 210.
- *pustula'ta*. Winter. Jacq. H. Schoenb. t. 464.

- M. sanguinea*. White; filaments red. Winter. Jacq. H. Schoenb. t. 460. Syn., *M. latifolia* of B. M. t. 848.
 — *coronata*. White; filaments red. Syn. *M. coronata*. Jacq. H. Schoenb. t. 461.
 — *scabra* and *undulata*. $\frac{1}{2}$. February. 1790. Syn., *Lachenalia pusilla*. Jacq. Ic. t. 585. Now known as *Brachycypha undulata*.
 — *uniflora*. } See *Polyxena pygmaea*.
 — *violacea*. }

Massowia *Gardneri*. See **Spathiphyllum candidum**.

Mast. The fruit of *Fagus sylvatica*.

Mastachantus sine'nsis. See **Caryopteris Mastachanthus**.

Mat. See **Bass**.

Mathiola. Stock Gilliflower. (Named after *P. Mathioli*, an Italian botanist. Nat. ord., *Cruciferae*; Tribe, *Arabideae*.)

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. acutifolia*. $\frac{1}{2}$. Red. June. Egypt. 1823.
 — *annua*. 2. Various. August. South Europe. 1781. Ten-week stock.
 — *alba*. $\frac{1}{2}$. White. July. South Europe.
 — *florople'no*. $\frac{1}{2}$. Red. July.
 — *græca*. 2. White. August. South Europe.
 — *livida*. Livid, purple. July. Egypt. 1820.
 — *longipetala*. 1. Red, yellow. June. Bagdad. 1818.
 — *parviflora*. $\frac{1}{2}$. Purple. July. Morocco. 1799.
 — *tricuspidata*. $\frac{1}{2}$. Purple. July. Barbary. 1789. Swt. Fl. Gard. t. 46.

HARDY BIENNIALS.

- M. coronopifolia*. 1. Purple. June. Sicily. 1819. Sibth. Fl. Gr. t. 637.
 — *fenestralis*. 1. Purple. July. Crete. 1759.
 — *si'cula*. $\frac{1}{2}$. Lilac. July. Sicily. 1835.
 — *simplicifolia*. 2. Purple. July.
 — *alba*. 2. White. July.
 — *simulata*. 1. Dingy red. July. England. Eng. Bot. ed. 3, t. 104.
 — *tatarica*. 1. Red, yellow. July. Tartary. 1820.

GREENHOUSE EVERGREENS.

- M. glabra*. 2. White. August.
 — *florople'no*. 2. White, purple. August.
 — *purpurea*. 2. Purple. August.
 — *inca'na*. 1. Purple. August. England. Eng. Bot. ed. 3, t. 105.
 — *alba*. 1. August.
 — *coccinea*. 1. Scarlet. August. England. Brompton stock.
 — *multiflex*. 1. Variegated. August. England.

- M. maderensis*. Violet. May. Gfl. t. 34.
 — *odoratissima*. 2. Livid. June. Persia. 1795. B. M. t. 1711.
 — *fragrans*. 2. Livid. June. Crimea. 1823.
 — *torulosa*. Purple. July. Cape of Good Hope. 1816.
 — *tristis*. $\frac{1}{2}$. Livid. June. South Europe. 1768.

Matonia. (Named after the late *Dr. Maton*. Nat. ord., *Filices*.)

Stove fern. See **FERNS**.

- M. pectinata*. Yellow. May. Mount Ophir 1839.

Matricaria. (From *matrix*, a female. Formerly used in uterine diseases. Nat. ord., *Compositae*; Tribe, *Anthemideae*.)

Hardy annuals or perennials. For culture see **ANTHEMIS**.

- M. eximia grandiflora aurea*. Garden variety 1888.
 — *pyramidalis*. Garden variety with pyramidal habit. Rev. Hort. 1886, p. 557 fig. 181.

Matricaria inodora flore-pleno, is a very handsome double-flowered form of the common *May Weed*. It grows to about two feet high, and produces a profusion of white globose flower heads, resembling a pompon *Chrysanthemum*; it produces very little seed, but may easily be propagated by cuttings.

Maurandya. (Named after *Professor Maurandy*, of Carthage. Nat. ord., *Scrophulariaceae*; Tribe, *Antirrhineae*.)

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. antirrhiniflora*. 10. Purple. July. 1844. B. M. t. 1643. Now referred to *Antirrhinum*.
 — *Barclaya'na*. 10. Blue, white. July. 1825. B. R. t. 1108.
 — *alba*. 10. White. Year. 1842.
 — *semperflorens*. 10. Purple. July. 1796.
 — *erecta*. North Mexico. 1832.
 — *erubescens*. 10. Rosy. August. Jalapa. 1830. Syns., *Lophospermum erubescens*, B. R. t. 1381, and *L. scandens* of B. M. tt. 3087-8.
 — *scandens*. 10. Purple, violet. Mexico. Syns., *Lophospermum scandens*, B. M. t. 3650, and *Usteria scandens*.
 — *Hendersoni*. Violet-purple, white.
 — *semperflorens*. Violet or reddish. 1796. B. t. 460.

Mauria. (Named after *A. Mauri*, an Italian botanist. Nat. ord., *Anacardiaceae*; Tribe, *Anacardiaceae*. 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. heterophylla*. 20. 1822.
 — *simplicifolia*. 20. 1822.

Mauritia. (Named after *Prince Maurice*, of Nassau. Nat. ord., *Palmeæ*; Tribe, *Lepidocaryeæ*.)

Stove palms. Seeds in a hotbed, in spring; rich, fibry, sandy loam. Winter temp., 55°; summer, 60° to 90°.

M. arnata. 40. Brazil. 1824.
— *jacuosa*. 40. White, green. Surinam. 1816.
— *vinifera*. 40. Maranhão. 1823.

Maxillaria. (From *maxilla*, the jaw of an insect; referring to a resemblance of the columns and labellum. Nat. ord., *Orchideæ*; Tribe, *Vandæ-Macillariæ*.)

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. acicularis. Blood-red or chocolate. Brazil. 1837. B. M. t. 4374.
— *alba*. White. W. Ind.
— *arachnoides*. Yellowish, purple. Columbia. 1880.
— *aromatica*. B. R. t. 1871. See *Lycaste aromatica*.
— *atro-purpurea*. B. C. t. 1877. See *Bifrenaria atropurpurea*.
— *atro-rubens*. Dark red. July.
— *aurео-fulva*. B. M. t. 3629. See *Bifrenaria aureo-fulva*.
— *barbata*. Yellow. May. Mexico. 1839.
— *Barringtonia*. B. C. t. 1824. See *Lycaste Barringtonia*.
— *Brocklehurstiana*. See *Houlletia Brocklehurstiana*.
— *caendida*. White. April. Brazil. 1840
— *ciliata*. B. R. t. 1206. See *Lycaste Barringtonia*.
— *citrina*. Yellow. May. Mexico. 1840.
— *concolor*. June. Guatemala. 1844.
— *crassifolia*. Brazil. 1836.
— *cristata*. B. R. t. 1811. See *Lycaste cristata*.
— *crocea*. $\frac{1}{2}$. Saffron. Rio Janeiro. B. R. t. 1799.
— *Lietzei*. Yellow, purple-brown. Brazil.
— *crucifolia*. B. R. t. 1842, t. 13. See *Lycaste cruenta*.
— *ctenostachya*. Ochre-yellow. Costa Rica. 1870.
— *cuneata*. White, pink. 1844.
— *Déppii*. B. C. t. 1612. See *Lycaste Déppii*.
— *elongata*. Yellow, brown. Central America. 1852.
— *Endresii*. Ochre, yellow, purple. 1886.
— *fractifolia*. Purple, white, red. 1881.
— *fucata*. White, yellow, red. 1886.
— *fusca*. G. C. 1888, iv. p. 576, fig. 81. A misprint for *M. fucata*.
— *galeata*. B. C. t. 1645. See *Gongora galeata*.
— *graminea*. Yellow, red. Demerara.
— *grandiflora*. White, yellow. August. Merida.
— *Harrisonia*. B. R. t. 897. See *Bifrenaria Harrisonia*.
— *alba*. See *Bifrenaria Harrisonia*, var. *alba*.
— *Hubschii*. White, yellow, mauve-purple. 1888. This has been erroneously called *Masdevallia Hubschii*.
— *irrorata*. White, purple, ochre. Andes. 1883.
— *jugosa*. Crimson, yellow. Brazil. 1842.
— *Lehmannii*. White, chestnut-brown. 1886.
— *lepidota*. Yellow. Columbia. 1878.
— *leptosepala*. 1. White, yellow. July. New Grenada. 1846. B. M. t. 4434.
— *longise-pala*. Purplish-brown; lip greenish. Venezuela. 1890. Lind. t. 248.

M. lu'teo-alba. Yellow, white. June. Merida.
— *Lyonii*. Purple, brown. Mexico. 1845.
— *Macleanii*. White, maroon. Mexico. 1839.
— *macrolobon*. B. M. t. 4228. See *Lycaste macrobulbon*.
— *macrophylla*. See *Lycaste macrophylla*.
— *madida*. $\frac{1}{2}$. Brownish. Brazil. Syn., *M. cepula*.
— *marginala*. Dark yellow. June. Merida.
— *meleagris*. Yellow, brown. May. S. Amer.
— *mo'titer*. Yellow, brown. G. C. 1887, ii. p. 242.
— *Mulleri*. Clear yellow; lip yellow with purple dots. Syn., *M. squamata*.
— *nasa'lis*. 1. Yellowish, purplish-brown. Columbia. 1870.
— *neophylla*. Yellowish, brown spotted. Columbia. 1878.
— *obscura*. $\frac{1}{2}$. Red-brown. Mexico. 1842.
— *ochroleuca*. $\frac{1}{2}$. Yellowish. July. Rio Janeiro. B. C. t. 1904.
— *ornithoglossa*. White. Mexico. 1842.
— *pallidiflora*. B. M. t. 2806. See *Xylobium*.
— *palmifolia*. See *Xylobium*.
— *Parke'ri*. $\frac{1}{2}$. Buff, white. April. Demerara. 1826. B. M. t. 2729.
— *parvula*. See *Bifrenaria parvula*.
— *picata*. $\frac{1}{2}$. Orange, red. December. Brazil. B. M. t. 3154.
— *ma'jor*. Yellow, white. December. Brazil. 1837.
— *placantha'ra*. B. M. t. 3173. See *M. viridis*.
— *porphyrostele*. $\frac{1}{2}$. Yellow, dark purple.
— *Spring*. S. Brazil. 1873.
— *præstans*. Yellow with brown spots, purple. April. Guatemala. 1884.
— *psittacina*. 1. Red, yellow. October. Mexico. 1835.
— *pu'mila*. $\frac{1}{2}$. Dark purple. Guiana. B. M. t. 3613.
— *punctata*. $\frac{1}{2}$. White-spotted. October.
— *alba*. White-spotted. October. Brazil. 1838.
— *purpurea*. Purple-spotted. October. Brazil. 1839.
— *pu'ngens*. See *Bifrenaria Harrisonia*.
— *racemosa*. B. M. t. 2879. See *Bifrenaria racemosa*.
— *Reichenheimiana*. $\frac{1}{2}$. Yellowish, purple. Costa Rica. 1871.
— *revoluta*. Yellow. 1852.
— *Rollissonii*. B. R. 1838, t. 40. See *Zygopetalum Rollissonii*.
— *rufescens*. Red-brown. 1836. B. R. t. 1848.
— *flavida*. $\frac{1}{2}$. Yellow, red. Trinidad. 1869.
— *Sanderiana*. Ivory white, vinous crimson. Peru. 1887. Rchb. t. 25.
— *Skinneri*. Bate. Orch. t. 35. See *Lycaste Skinneri*.
— *speciosa*. Yellowish, blackish-purple. 1876.
— *splendens*. White, yellow. Columbia. 1870.
— *squallens*. B. M. t. 2955. See *Xylobium squallens*.
— *squamata*. See *M. Mulleri*.
— *stapeloides*. B. M. t. 3877. See *Zygopetalum stapeloides*.
— *Steelii*. B. M. t. 3573. See *Scuticaria Steelii*.
— *tenuifolia*. 1. Purple, yellow. June. Vera Cruz. 1837. B. R. 1839, t. 8.
— *tetragnona*. B. R. t. 1428. See *Lycaste tetragona*.
— *triangularis*. Brown, crimson. Guatemala.
— *tritris*. Brownish. S. America. 1871.
— *varicoso*. 1. Bolivia. 1883. G. C. 1883, xx. p. 392.
— *venusta*. White, yellow, red. New Grenada. 1862.
— *viridis*. $\frac{1}{2}$. Green. May. Brazil. B. R. t. 1510. Syn., *M. placanthera*.
— *vitellina*. B. R. 1839, t. 12. See *Bifrenaria vitellina*.

M. Warrea'na. B. C. t. 1884. See *Warrea tricolor*.

— *xa'nthina*. See *Zygotetium xanthinum*.

Maximilia'na. (Named after Prince Maximilian. Nat. ord., *Palmeæ*; Tribe, *Cocoinæ*. Allied to *Cocos*.)

Stove palms. Seeds, in a hotbed; rich, sandy loam. Winter temp., 55° to 60°; summer, 60° to 85°.

M. cari'boa. St. Kitts.

— *insi'gnis*. See *Scheelea insignis*.

— *Martia'na*. 60. Brazil. 1825. Syn., *M. regia*.

— *re'gia*. Ill. Hort. ii. p. 3. See *M. Martiana*.

May. *Crata'gus oxyca'ntha*.

May-apple. *Podophy'llum pelta'tum*.

May Bugs. See *Melolontha*.

May-flower. *Læ'lia maja'lis*.

Mayte'nus. (From *maiten*, the Chilian name. Nat. ord., *Celastrineæ*; Tribe, *Celastrææ*. Allied to *Celastrus*.)

Greenhouse evergreen shrubs. Cuttings of half-ripened shoots in sand, under a glass, in

May; sandy peat and fibry loam. Winter temp., 35° to 45°.

M. boa'ria. 10. White. Chili. 1822.

— *chile'nsis*. 12. Green, yellow. May. Chili. 1829. B. R. t. 1702.

— *octa'gonus*. 6. White. October. Peru. 1786.

— *verticilla'ta*. 6. White. October. Peru. 1823.

Maze. See *Labyrinth*.

Ma'z us. (From *mazos*, a teat; referring to the tubercles in the opening or mouth of the flower. Nat. ord., *Scrophulariaceæ*; Tribe, *Gratiolææ*. Allied to *Dodartia*.)

Hardy annuals. Seeds in hotbed, in March; seedlings hardened off, and transferred to the open ground in May.

M. pumi'tio. $\frac{1}{2}$. Pale purple. June. Van Diemen's Land. 1823.

— *rug'o'sus*. $\frac{1}{2}$. Yellow. July. China. 1780. Syn. ? *Stemodia tomentosa*.

Meadow-Rue. *Thali'ctrum*.

Meadow-Saffron. *Col'chicum*.

Meadow-Sweet. *Spiræ'a ulma'ria*.

MEASURES.

CORN MEASURE.

4 Gills	1 Pint, containing	34 $\frac{3}{8}$ Cubic Inches.
2 Pints	1 Quart	69 $\frac{3}{8}$ " "
4 Quarts	1 Gallon	277 $\frac{1}{4}$ " "
2 Gallons	1 Peck	554 $\frac{1}{2}$ " "
4 Pecks	1 Bushel	2218 $\frac{1}{8}$ " "
4 Bushels	1 Sack	5 $\frac{1}{8}$ Cubic Feet.
8 Bushels	1 Quarter	10 $\frac{1}{4}$ " "
5 Quarters	1 Load	51 $\frac{1}{2}$ " "

TIMBER MEASURE.

A load of timber, unhewn, is 40 cub. ft.	A load of 2 $\frac{1}{2}$ inch plank 240 square feet.
squared, 50 "	3 " 200 "
1 inch plank 600 sq. ft.	3 $\frac{1}{2}$ " 170 "
1 $\frac{1}{2}$ " 400 "	4 " 150 "
2 " 300 "	

LAND MEASURE.

The *English* statute acre contains 4840 square yards; the *Scotch*, 6150; 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 *Strasbourg* acre is nearly half an English acre; the *Prussian* morgen is not quite three-fourths of an acre.

LONG MEASURE.

12 Inches	1 Foot.	40 Poles	1 Furlong.
3 Feet	1 Yard.	8 Furlongs	1 Mile.
6 Feet	1 Fathom.	3 Miles	1 League.
5 $\frac{1}{2}$ Yards	1 Pole.	69 $\frac{1}{2}$ Miles	1 Degree.

SQUARE MEASURE.

Inches.	Feet.	Yards.	Poles, Rods, or Perches.	Roods.	Acres.
144	1	1	1	1	1
1,296	9	1	1	1	1
39,204	272 $\frac{1}{4}$	30 $\frac{1}{4}$	1	1	1
1,568,160	10,890	1210	40	1	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 do.		
108	„	„	. . . . .	1	Stack of Wood.
128	„	„	. . . . .	1	Cord.

HEAPED MEASURES.

Our market-gardeners, and retailers of fruit, potatoes, etc., generally vend their commodities as if the Act of Parliament, 5 and 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 to 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, etc., the bushel shall be made round, with a plain and even bottom, be nineteen inches and a half 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 four 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 sixteen inches in the girth; if two notches, twenty-three inches; if three notches, twenty-eight inches; if four notches, thirty-three inches; and if five notches, thirty-eight inches about.

Billets are to be three feet long, of which there should be three sorts, namely, a single cask, and a cask of two. The first is seven inches, the

second ten inches, and the third fourteen inches about. They are sold by the hundred of five score.

Faggots are to be three feet long, and, at the band, of twenty-four 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 fourteen feet in length, three feet in breadth, and three feet in height; the other is eight feet in length, four feet in height, and four feet in breadth.

MEASURE OF WOOD.

1000	Billets of Wood	=	1	Cord.
10	Cwt. of Wood	=	1	Cord.
1	Cord of Wood	=	$\frac{1}{2}$	Chaldron of Coals.
100	lb. of Wood	=	1	Quintal of Wood.

Mecono'psis. (From *mekan*, the poppy, and *opsis*, like. Nat. ord., *Papaveraceæ*; Tribe, *Eupapaveræ*.)

Hardy herbaceous perennials. Divisions of the plant in spring, and seeds (which ripen freely), at the same time; rich, sandy soil.

M. aculeata. Purple. N. W. India. 1864.

— *ca'mbrica*. 1. Yellow. June. England. Eng. Bot. ed. 3, t. 63.

— *crassifolia*. 1. Orange, red. California. 1833.

— *diphylla*. $\frac{3}{4}$. Yellow. June. Western United States. 1854. Syn., *M. petiolata*.

— *heterophylla*. 1. Orange, red. California. 1833.

— *nepalensis*. 4. Yellow. Himalaya. 1866. B. M. t. 5585.

M. petiolata. See *M. diphylla*.

— *quintupline'rvia*. $\frac{3}{4}$. Violet. N. W. China. 1877. Gfl. t. 880.

— *simplicifolia*. 3. Blue. June. Nepaul. 1855. Ill. Hort. iii. t. 114.

— *Wall'chii*. 2 $\frac{1}{2}$. Blue. June. Sikkim Himalaya.

— *fuscopurpurea*. Purplish. July. E. Himalayas. 1884. B. M. t. 6760.

Mede'ola. (Named after *Medea*, the sorceress. Nat. ord., *Liliaceæ*; Tribe, *Medeoleæ*. Allied to *Trillium*.)

Hardy herbaceous. Division of the plant in spring; rich, sandy soil.

M. angustifolia. Red Lil. t. 363. A synonym of *Geitonoplesium cymosum*.

M. asparagoides. Red. Lil. t. 442. A synonym of *Asparagus medeoloides*.
— *virginica*. †. Yellow. June. Virginia. 1759.
B. M. t. 1316.

Median Apple, or Citron. *Citrus me'dica*.

Medica'go. Medick. (From *medike*, a name from Dioscorides. Nat. ord., *Leguminosæ*; Tribe, *Trifoliaceæ*. Allied to *Trigonella*.)

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. 8. May. 1596.

HARDY HERBACEOUS PERENNIALS.

M. Carstén'sis. 1. July. Carinthia. 1789. Jacq. Ic. t. 156.
— *creta'cea*. 4. July. Tauria. 1805.
— *falca'ta*. 2. July. England.
— *glomera'ta*. 1. June. Italy. 1817.
— *glutinosa*. 1. June. Caucasus. 1817.
— *mar'i'na*. 1. July. South Europe. 1596.
— *procumbens*. 1. June. South Europe. 1818.
— *prostra'ta*. †. June. Hungary. 1793.
— *sati'va*. 2. Violet. June. England.
— — *versicolor*. 2. Yellow, blue. June Britain.
— *suffruticosa*. 2. Violet, yellow. June. Pyrenees. 1826.

HARDY ANNUALS.

M. aculea'ta. 1. July. 1802.
— *brachycarpa*. †. July. Tifisz. 1823.
— *cancellata*. 1. July. Caucasus. 1818.
— *catalla'nica*. †. July. Catalonia. 1820.
— *clivari'sis*. †. July. South Europe. 1686.
— *coronata*. 1. June. South Europe. 1680.
— *disciformis*. †. July. South France. 1822.
— *echinusa*. †. July. South France. 1818.
— *flexuosa*. †. July. Italy. 1819.
— *Gera'rdis*. 1. July. South Europe. 1816.
— *helix*. See *M. levis*.
— *Hornemanniana*. †. June. Morocco. 1818.
— *intertecta*. 1. July. South Europe. 1629.
— *laciniosa*. †. July. South Europe. 1683.
— *levis*. †. July. South Europe. 1816. Syn., *M. helix*.
— *lappa'cea*. †. July. Montpellier. 1810.
— *lupulina*. 1. June. Britain.
— — *unguicula'ta*. †. July. Switzerland. 1816. Syn., *M. minicarpa*.
— — *Willdenovii*. †. Europe.
— *maculata*. 1½. May. England.
— *marginata*. 1. July. South Europe. 1816.
— *mnio'carpa*. See *M. lupulina*, var. *unguiculata*.
— *mollissima*. †. July. Spain. 1818.
— *muricata*. 1. June. England.
— *orbicularis*. 1. July. South Europe. 1688.
— *pra'cox*. †. July. Provence. 1820.
— *re'cta*. 1. July. Barbary. 1810.
— *rupes'tris*. 1. June. Tauria. 1820.
— *sibirica*. 1. June. Siberia. 1817.
— *sphaerocarpa*. †. July. Italy. 1818.
— *spinulosa*. †. July. South France. 1820.
— *striata*. †. July. South France. 1820. Syn., *M. tricycla*.
— *Tenorea'na*. †. July. Italy. 1820.
— *tentaculata*. 1. June. South Europe. 1800.
— *tricycla*. See *M. striata*.
— *turbinata*. 1. July. South Europe. 1680.

Medico'sma. (From *medica*, and *osme*, smell; the flowers are scented like

those of *Citrus medica*. Nat. ord., *Rutaceæ*. Syn., *Acronychia*.)

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°.

M. Cunninghamsi. White. July. Moreton Bay. 1938. Syn., *Acronychia Cunninghamsi*. B. M. t. 3994.

Medinilla. (Named after *J. de Medinilla y Pineda*, governor of the *Marianne Islands*. Nat. ord., *Melastomaceæ*.)

Stove evergreen shrubs. 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, fibry and sandy. Winter temp., 48° to 55°; summer, 60° to 85°.

M. amabilis. B. M. t. 6681. See *M. Teyssmanni*.

— *Curtisii*. White; anthers purple. March. W. Sumatra. 1885. B. M. t. 6730.
— *erythrophylla*. Rose. August. Khasia. 1837.
— *eximia*. See *M. Sieboldiana*.
— *farinosa*. Pink; young leaves mealy. 1865.
— *Javanensis*. Rose. 4. December. Java. 1850. B. M. t. 4569.
— *magnifica*. 3. Pink. May. Manilla. B. M. t. 4533.
— — *rubra*. Dark red.
— *Sieboldiana*. 3½. Rose. April. Moluccas. B. M. t. 4650. Syn., *M. eximia*.
— *speciosa*. Rose. 4. July. Java. 1845.
— *Teyssmanni*. Rose. E. Indies. 1874. Syn., *M. amabilis*. B. M. t. 6681.

Medlar. *Me'spilus germanica*.

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, etc.—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 down-

wards, 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. *Photinia japonica*.

Medusa's-head. *Euphorbia caput Medusæ*.

Medu'sea major. A synonym of *Euphorbia caput Medusæ*.

Megaclonium. (From *megas*, large, and *kline*, a bed; referring to the axis, or rachis, on which the flowers are borne. Nat. ord., *Orchidææ*; Tribe, *Epidendrææ-Dendrobizææ*. Allied to *Cirrhoptetalum*.)

Stove orchids. Division of the plant in spring; shallow baskets in sphagnum, rotten wood, charcoal, and fibry peat. Winter temp., 60°; summer, 60° to 90°.

M. bufo. Brown, purple, with black hairs. Summer. Sierra Leone. 1839.

— *Clarkei*. Green, purple. W. Tropical Africa. 1891.

— *falcatum*. 1. Yellow, red. March. 1824. B. R. t. 989.

— *majus*. Yellow, red. March. 1833.

— *leucorhachis*. Spike flat, white; flowers yellow. Tropical Africa. 1891.

— *maximum*. 1. Yellow, green. Sierra Leone. 1836. B. R. t. 1959.

— *melanorhachis*. Brown, yellowish. Sierra Leone. 1875.

— *oxyodon*. Yellow, red. Madagascar. 1888. Syn., *Bulbophyllum oxyodon*.

— *purpuratum*. Greenish, purple. W. Tropical Africa. 1871. B. M. t. 5936.

— *scaberulum*. Dull purple, whitish green. Pondoland. 1888.

— *velutinum*. Purple, yellow. Sierra Leone. 1845.

Megarhi'za. (From *megas*, large, and *rhiza*, a root; because of its large tuberous rootstock. Nat. ord., *Cucurbitaceææ*. Allied to *Elaterium*.)

Hardy tuberous perennial, producing an annual trailing stem. Seeds in a slight hotbed in spring. Good light soil.

M. californica. California. 1880. Garden, 1880, p. 147.

Mega'sea ciliata. A synonym of *Saxifraga ligulata*.

Meiracyllium. (From *meiracyllion*, a little boy; probably in reference to the small size of the plants. Nat. ord., *Orchidæææ*; Tribe, *Epidendræææ-Pleurothalleæææ*.)

Stove epiphytes; should be grown on blocks. For cultivation, see ORCHIDS.

M. gemma. Amethyst. Mexico. Rchb. Xen. iii. t. 208, fig. 1.

Melaleuca. (From *melas*, black, and *leukos*, white; referring to the colours of the old and young bark. Nat. ord., *Myrtaceæææ*; Tribe, *Leptospermeæææ*.)

Evergreen shrubs, from New South Wales, 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. leucadendron. 15. White. E. Ind. 1796. Cajeput tree.

— *minor*. White. E. Ind. 1800.

GREENHOUSE EVERGREENS.

M. acerosa. Purple. June.

— *armillaris*. 6. White. June. 1788. Syn., *M. ericifolia* of Andr. Rep. t. 175.

— *callistemonæææ*. See *M. lateritia*.

— *calycina*. 3. Purple. July. N. Amer. 1803.

— *decussata*. 4. Lilac. August. 1803. B. M. t. 2268.

— *densa*. B. C. t. 200. See *M. pulchella*. *M. densa* of Aiton is a distinct species.

— *diosmæfolia*. 4. Reddish. June. 1794. Andr. Rep. t. 476.

— *dumosa*. 2.

— *ericifolia* of Andr. Rep. t. 175. See *M. armillaris*.

— *erubescens*. Red. June. Syn., *M. erubescens*.

— *Fraseri*. B. M. t. 3210. See *M. striata*.

— *fulgens*. 6. Scarlet. August. 1803. B. R. t. 103.

— *genistifolia*. 4. Red. 1793.

— *globifera*. 30.

— *grandis*. 4.

— *Hugelii*. 1832.

— *hypericifolia*. 3. Scarlet. July. 1792. Andr. Rep. t. 200.

— *incana*. 3. Yellow. July. 1817. B. R. t. 410.

— *juniperoides*. 3. Striped. June. 1830.

— *lancoleta*. 4. July. 1817.

— *lateritia*. Purple, rose. June. Syn., *M. callistemonæææ*.

— *nerifolia*. B. M. t. 1058. See *Tristania nerifolia*.

— *paludosa*. 6. Red. August. 1803.

— *pulchella*. 2. Purple. July. 1803. B. C. t. 200. Syn., *M. densa* of B. C. t. 200.

— *radula*. Pink. May.

— *salicifolia*. Andr. Rep. t. 485. See *Tristania nerifolia*.

— *sabra*. 3. Purple. May. 1803.

— *seriata*. Rose. June.

— *spinosa*. Yellow. June.

— *squamea*. 4. Lilac. June. 1805. B. R. t. 477.

— *squarrosa*. 2. White. 1794. B. M. t. 1935.

— *striata*. 4. Purple. June. 1803. Syn., *M. Fraseri*, B. M. t. 3210.

— *stypeloides*. 4. White. June. 1793.

— *tetragona*. 4. 1820.

— *thymifolia*. 2. Purple. August. 1792. B. M. t. 1368. Syn., *M. coronata*, Andr. Rep. t. 278.

— *trichophylla*. Pink. May.

— *trinevia*, 3. 1816.

— *uncinata*. New South Wales.

— *virgata*. 2. 1818.

— *Wilsontii*. Reddish-purple. S. Australia. 1874. B. M. t. 6131.

Melampodium. (From *melas*, black, and *posus*, foot. Nat. ord., *Compositæææ*; Tribe, *Helianthoidæææ*.)

Hardy annual.

M. divaricatum, Yellow. Mexico. Syn., *M. ovatifolium*.

Melanorrhæa. (From *melas*, black, and *rheo*, to flow; referring to the

juice becoming black varnish. Nat. ord., *Anacardiaceæ*; Tribe, *Anacardiææ*.)

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. usitata. 100. Red. E. Ind. 1829.

Mela'nthera. (From *melas*, black, and *anthera*, an anther. Nat. ord., *Compositæ*.)

M. deltoidea is a stove, and *M. hastata* a half-hardy herb. Seeds or divisions.

M. deltoidea. 3. Yellow. July. W. Indies.

1799. Syn., *Calea aspera*.

— *hastata*. 3-6. White. June. N. America.

1732.

— *pandurata*. Leaves fiddle-shaped.

Mela'nthium. (From *melas*, black, and *anthos*, a flower; referring to the dusky blossoms. Nat. ord., *Liliaceæ*; Tribe, *Veratraceæ*. Allied to *Veratrum*.)

The *Veratres* 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'nsis. See *Androcymbium leucanthum*.

— *ciliatum*. $\frac{1}{2}$. Pale yellow. June. S. Africa.

1810. A synonym of *Dipidax ciliata*.

— *eucomoides*. B. M. t. 641. See *Androcymbium eucomoides*.

— *gramineum*. Red. Lil. t. 249. See *Androcymbium punctatum*.

— *hybridum*. $\frac{1}{2}$. White. June. N. America.

1822. Syns., *M. latifolium*, *M. monicum*, *M. racemosum*, and *Zygadenus hybridus*.

— *ju'nceum*. $\frac{1}{2}$. Pink. September. S. Africa.

1780. B. M. t. 558. Now referred to

Dipidax.

— *latifolium*. See *M. hybridum*.

— *massonifolium*. Andr. Rep. t. 368. See

Whiteheadia bifolia.

— *monicum*. See *M. hybridum*.

— *monopetalum*. B. R. t. 1291. See *Wurmbea*

campanulata.

— *phalangioides*. 1. White. June. Carolina.

1810. Now referred to *Helonias*.

— *secundum*. 1. White. September. S. Africa.

1810. A form of *Dipidax ciliata*.

— *sibiricum*. 1. Siberia. 1823. Now known

as *Anticlea sibirica*.

— *spicatum*. B. M. t. 694. See *Wurmbea pur-*

purea.

— *triquetrum*. White, purple. April. N.

America. 1847. A synonym of *Dipidax*

triquetra.

— *uniflorum*. $\frac{3}{4}$. White, yellow. June. S.

Africa. 1787. B. M. t. 767. Now known as

Bæometra columellaris.

— *virginicum*. 2. Brown. N. America. June.

1768. Syns., *M. polygamum*, *Helonias*

virginica, B. M. t. 983, and *Zygadenus*

virginicus.

— *viride*. B. M. t. 994. See *Ornithoglossum*

glaucum.

Melasphæ'rule. (From *melas*, black, and *sphæira*, a ball; in allusion to the small blackish bulbs. Nat. ord., *Iridaceæ*; Tribe, *Ixiææ*.)

Pretty greenhouse bulbs, very useful for con-

servatory decoration on account of their pro-

fusion of flowers, which endure for a long time. For cultivation, see IXIA.

M. graminea. White, purplish. April. S. Africa. 1786. B. M. t. 615. Syns., *M. parviflora*, *M. intermedia*, *M. iridifolia*, and *Gladiolus gramineus*, Jacq. Ic. t. 236.

— *parviflora*. B. C. t. 1444. See *M. graminea*.

Mela'stoma. (From *melas*, black, and *stoma*, a mouth; the eatable berries stain the mouth a dark purple. Nat. ord., *Melastomaceæ*; Tribe, *Osbeckiææ*. 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. 4. Purple. E. Ind. 1810.

— *Azelia'num*. 1 $\frac{1}{2}$. Red. Sierra Leone. 1824.

— *asperum*. 6. Purple. June. E. Ind. 1815.

— *Ba'nksii*. 1 $\frac{1}{2}$. White. September. N. Hol-

land. 1824.

— *ca'ndidum*. 4. Purple. China. 1824.

— *corymbosum*. 2. Purple. June. Sierra

Leone. 1792. B. M. t. 904.

— *cymosum*. 2. Purple. June. S. Amer.

1792.

— *decemfidum*. 6. Purple. June. E. Ind.

1793. Syns., *M. malabathricum* of B. M.

t. 529, and *M. sanguineum*, B. M.

t. 2241.

— *denticulatum*. 3. White. July. New

Caledonia. 1855. B. M. t. 4957.

— *ecostatum*. 4. Purple. July. Jamaica.

1793.

— *elongatum*. 1. Purple. May. Sierra Leone.

1823.

— *granulosum*. B. R. t. 671. See *Pleroma*.

— *heteromallum*. B. M. t. 2337. See *Pleroma*.

— *hirtum*. B. M. t. 1971. See *Clidemia hirta*.

— *lævigatum*. B. R. t. 363. See *Miconia*

lævigata.

— *macrocarpum*. See *M. malabathricum*.

— *malabathricum*. 6. Purple. July. E.

Indies. Syn., *M. macrocarpum*. *M.*

malabathricum of B. M. 529 is *M. de-*

cemfidum.

— *napalense*. B. C. t. 707. See *M. nemorale*.

— *nemorale*. Purple. Autumn. Nepal. 1820.

Half-hardy. Syn., *M. napalense*.

— *osbeckioides*. B. M. t. 2235. See *Osbeckia*

octandra.

— *pulverulentum*. Red. March. Sumatra.

1823.

— *sanguineum*. B. M. t. 2241. See *M. decem-*

fidum.

— *villosum*. B. M. t. 2630. See *Pleroma*.

Melha'nia. (After *Mount Melhan*, in Arabia Felix, where the first of them was discovered. Nat. ord., *Sterculiaceæ*; Tribe, *Dombeyææ*. Allied to *Pentapes*.)

Stove evergreen trees, with white 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., 60° to 60°; summer, 60° to 85°.

M. Burche'lii. 15. Cape of Good Hope. 1813.

— *erythro'sylon*. 15. July. St. Helena. 1772.

— *melano'sylon*. 2. July. St. Helena. G. C.

1890, vii. p. 512, fig. 81.

Melia. Bead-tree. (*Melia*, the Manna Ash; referring to the resemblance of the leaves. Nat. ord., *Meliaceæ*; Tribe, *Meliææ*.)

Seeds and cuttings of the ripe shoots in sand, under a bell-glass, and in a mild bottom-heat;

sandy loam and fibry peat. *Azedara'ch* 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. austr'a'lis*. Lilac. Australia. 1810.
Azedara'ch. 45. Blue. July. Syria. 1656.
 B. M. t. 1066.
 — *floribu'nda*. White. 1874. Probably the same as, or a variety of, *M. Azedarach*.
 — *japo'nica*. Japan. 1865. Hardy or half-hardy.

STOVE EVERGREENS.

- M. Azadir'a'chta*. 60. White. July. E. Ind. 1759. Bent. and Tr. t. 62.
 — *composita*. 20. White, red. July. E. Ind. 1810.
 — *exco'lsa*. 40. White. July. E. Ind. 1819.
 — *guinee'nsis*. 30. White, red. July. Guinea. 1824.
 — *robu'sta*. 30. White, red. July. E. Ind. 1820. A form of *M. composita*.
 — *semperv'rens*. White. W. Indies. B. R. t. 643.
 — *supe'rba*. 20. White, red. E. Ind. 1810. A form of *M. composita*.

Melia'nthus. Honey Flower. (From *mel*, honey, and *anthos*, a flower; the tubes contain a copious supply of honey-like juice. Nat. ord., *Sapindaceæ*; Tribe, *Melianthææ*.)

The natives obtain honey for food by shaking the branches of *Melia'nthus major* when in blossom. Evergreens, from the Cape of Good Hope. Cuttings of young shoots in sandy soil, under a hand-light; rich, sandy soil; require the protection of a greenhouse, cold pit, or a conservatory wall in winter.

- M. com'o'sus*. 3. Yellow. 1820. B. R. t. 45.
 — *ma'jor*. 10. Brown. June. 1688.
 — *mi'nor*. 2. Brown. June. 1696. B. M. t. 301.
 — *Trimenta'nus*. 2-7. Scarlet. December. Namaqua Land. B. M. t. 6557.

Melica. (Derivation uncertain. Nat. ord., *Gramineæ*; Tribe, *Festuceæ*.)

Half-hardy ornamental grass.

- M. papilion'a'cea*. Purplish. Argentine Republic. 1890.

Meli'chros. (From *melichros*, honey-coloured; referring to glands on the flowers. Nat. ord., *Epacridaceæ*; Tribe, *Stypheliceæ*. 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*. See *M. urceolatus*.
 — *rota'ta*. 1½. June. 1824.
 — *urceola'tus*. 2. May. 1824. Syn., *M. medius*.

Melico'cca. Honey-berry. (From *mel*, honey, and *coccus*, a berry; referring to the sweetness of the fruit. Nat. ord., *Sapindaceæ*; Tribe, *Sapindeæ*. 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. bi'juga*. 16. Yellow. Antilles. 1778.
 — *olive'formis*. 20. Yellow. Grenada. 1824.
 — *panicula'ta*. 20. St. Domingo. 1820.
 — *tri'juga*. 20. Ceylon. 1820.

Meli'cope. (From *mel*, honey, and *kope*, an incision; referring to the necessary of notched glands. Nat. ord., *Rutaceæ*; Tribe, *Xanthoxyleæ*.)

Greenhouse evergreen. 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. terna'ta*. 6. White. New Zealand. 1822. Ic. Pl. t. 608.

Meli'cytus. (From *mel*, honey, and *cytos*, a cavity; referring to the cavity at the bottom of the stamens. Nat. ord., *Violaceæ*; Tribe, *Alsoideæ*. Allied to *Hymenanthera*.)

Greenhouse evergreen shrub. 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. ramiflo'rus*. 6. White. New Zealand. 1822.

Melilo'tus. Melilot. (From *meli*, honey, and *lotus*, the honey-lotus. Nat. ord., *Leguminosæ*; Tribe, *Trifolieæ*. Allied to *Trifolium*.)

Seed in common soil; *arbo'rea*, by seed and by cuttings, does best in a sheltered place, and is deserving of more cultivation.

- M. arbo'rea*. 15. White. July. Turkey. 1826.
 — *brachylo'ba*. A synonym of *Medicago brachycarpa*.
 — *leuca'ntha*. 4. White. July. Europe.
 — *sibi'rica*. A synonym of *Medicago sibirica*.
 — *suave'olens*. 3. Yellow. July. Daburia. 1824.

Meli'ssa. Balm. (From *melissa*, a bee; literally, a bee-flower. Nat. ord., *Labiataæ*; Tribe, *Satureineæ*.)

Hardy herbaceous perennials. Dividing the roots in spring; common garden-soil.

- M. A'cinosa*. See *Calamintha Acinosa*.
 — *a'lb'a*. See *Micromeria rupestris*.
 — *alt'i'ssima*. See *M. officinalis*.
 — *cocci'nea*. See *Calamintha coccinea*.
 — *cora'difolia*. See *M. officinalis*.
 — *cre'tica*. See *Calamintha cretica*.
 — *grandiflo'ra*. B. M. t. 208. See *Calamintha grandiflora*.
 — *microphy'lla*. ½. Purple. June. Corsica. 1829. A synonym of *Calamintha coriacea*.
 — *officina'lis*. 1. White. July. South Europe. 1573. Eng. Bot. ed. 3, t. 1053. Syns., *M. altissima* and *M. cordifolia*.
 — *variega'ta*. 1. White. June. Gardens.
 — *villo'sa*. White. August. Italy. 1573.
 — *polya'nthos*. 1. White. July. 1820.
 — *pyrena'ca*. Jacq. H. Vind. t. 183. See *Horminum pyrenaicum*.

Melissa Culture. This hardy herbaceous plant has a citron scent and aromatic flavour. It is cultivated now only for making a grateful drink for the sick, and sometimes for culinary purposes.

The Soil best suited to its growth is any good friable, but rather inclining to clayey than sandy.

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 from June to August. 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 August or September, 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, the soil loosened by the hoe or slight digging and manure given.

Old beds may be gathered from in July, for drying, but their green leaves, from May 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. The variegated form has the additional advantage of being highly ornamental.

Meli'ttis. Bastard Balm. (The same derivation as *Melissa*. Nat. ord., *Labiatae*; Tribe, *Stachydeæ*.)

Same culture as *MELISSA*.

- M. melissophyllum*. 1. Creamy-white, blotched with pink or purple. May. England. Eng. Bot. ed. 3, tt. 1062-3.
 — *alpina*. 2. Flesh. May. Switzerland.
 — *grandiflora*. 1. White, yellow. May. England.

Mello'ca. See **Ullucus**.

Meloca'tus. Melon Thistle. (From *Melon*, a melon, and *kaktos*, the name given by Theophrastus to a spiny plant. Nat. ord., *Cactææ*.)

This genus differs from *Echinocactus* in having the flowers produced on a head covered with dense, woolly, and bristly hairs, called a tomentum, while those of *Echinocactus* issue from the bare ribs, or angles. Treatment similar to that for *MAMMILLARIA*. Suckers and offsets; loam, peat, and lime-rubbish.

- M. communis*. 1-1½. Rosy-red. W. Indies. 1788. B. M. t. 3090. Turk's Cap.
 — *depressus*. Rose. July. Pernambuco. B. M. t. 3691.
 — *Elmæ'tii*. Rose. Bahia. 1872.
 — *Schlumbergeria'nus*. 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., *Apocynaceæ*; Tribe, *Carisseæ*. Allied to *Carissa*.)

The fruit of this and some other allied genera are eatable, but not of much merit. Stove ever-green 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. 10. E. Ind. 1820.

— *parvifolius*. E. Ind. 1775.

— *sca'ndens*. 15. New Caledonia. 1775.

— *undulatus*. E. Ind.

Melolo'ntha. Every one knows the common May-bug, or Cockchafer (*Melolontha vulgaris*); a drawing and a description of its grub are given at page 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.

Mel'on. (*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, etc. In the *Rocks* we have the Small Scarlet-fleshed, the Black, the Large, and the Early, etc. 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, etc. 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 Isaphan, the Dampsha, the Gernek, and the Hoo-saine.

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 five-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 five-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 to three barrowloads. 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 six to nine 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.

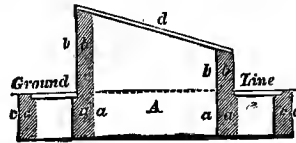
The female blossoms must be carefully "set" or impregnated daily, choosing about two o'clock, p.m., for the operation, when the pollen will be dry.

As soon as from three to four fruits 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 sun-light increases they will readily bear an increase of from 5° to 10° both to the roots and branches.

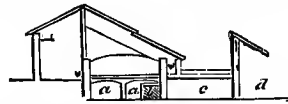
Bed.—Although a common hotbed is generally used for this plant, yet a pit is more economical of heat, and, by enabling a more regular temperature to be sustained, renders the fruit in greater perfection. The pit is a rectangular frame or bin, built of nine-inch brick-work, and inclosed by a glass case 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.

The accompanying sketch will at once show the form of the pit and Mr. Smith's mode of applying the linings. A is the pit, the side of which, *a a*, instead of being a continuous piece of brick-work, are merely rows of pillars six feet apart;



and the brick-work of the frame, *b b*, is supported, by bars of iron reaching from pillar to pillar. An outer wall *c c*, is constructed at two and a half 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; *d* represents the lights, which thus are formed without any wooden frames. For other modes of construction, see **Hot-bed Pits**, etc. If a common hotbed is employed, fifteen barrow-loads of dung is the usual allowance to each light, which make it about six 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 twenty-eight feet long, and fifteen wide, and is heated by means of a saddle boiler, with four-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, *a*, along the front of which runs the flue, *b*, imparting a slight degree of heat to the soil above, and also serving to heat a series of arches, *c*, which run along beneath the path, and are entered from a house in front, *d*, and which are used for forcing rhubarb, etc., 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.

Insects.—See *Acarus*, *Aphis*, and *Thrips*.

Melon Pumpkin. *Curcubita melo-pepo*.

Melon Thistle. *Melocactus*.

Melon Turk's-Cap. *Melocactus communis*.

Melon, Water. *Citrullus vulgaris*.

Melo'thria punctata. A synonym of *Zehneria scabra*.

Melvillea speciosa. A synonym of *Cuphea Melvillea*. B. R. t. 852.

Meme'cyon. (Dioscorides' name for the fruit of the Arbutus. Nat. ord., *Melastomaceæ*; Tribe, *Memecycleeæ*. Allied to *Mouriria*.)

The berries of *M. edule* 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. angulatum. 3. Purple. May. Mauritius. 1826.

— *capitellatum*. 4. July. E. Ind. 1796.

— *edule*. 10. Purple. Ceylon. 1820.

— *gracile*. Blue. May. Ceylon, Singapore and Java. 1824.

— *ramiflorum*. 4-5. Calyx rosy-pink; corolla deep violet. Ceylon. 1884.

Men'ia. See *Cystacanthus*.

Menio'cus. (From *mene*, the moon, and *okkos*, the eye; referring to the shape of the seed-pod. Nat. ord., *Cruciferae*. Allied to *Aubretia*.) Now referred to *Alyssum*.

A hardy annual. Seed in April, in common soil.

M. linifolius. 3. White. June. Caucasus. 1819. A synonym of *Alyssum linifolium*.

Men'scium. (From *meniskos*, a crescent; referring to the shape of the spore, or seed cases. Nat. ord., *Filices*.)

Stove ferns, with brown spores. See *FERNES*.

M. cuspidatum. May. Isle of Luzon.

— *dentatum*. 4. Brazil.

— *patulifolium*. 4. May. W. Ind.

— *prolififerum*. May. E. Ind. 1820. Syn., *Goniopteris prolifera*.

— *reticulatum*. 3. May. Martinique. 1793.

— *simplex*. 1. Hong Kong. 1850.

— *sorbifolium*. 1. Brazil. 1823.

— *triphyllosum*. 1. June. E. Ind. 1823.

Menispe'rmum. Moonseed. (From *mene*, the moon, and *sperma*, a seed. Nat. ord., *Menispermaceæ*; Tribe, *Cocculææ*. 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. amarissimum. Yellow. E. Ind. 1804. Stove evergreen climber.

— *canadense*. 10. Green, yellow. June. Canada to S. Carolina. 1801.

— *lobatum*. Green, yellow. July. N. Amer. 1732. Syn., *M. virginicum*.

— *Cocculus*. See *Cocculus Plumkenetii*.

— *fenestratum*. See *Cascinium fenestratum*.

- M. Lyo'nii*. 10. Purple. June. N. Amer. 1823.
 — *smilacinum*. Carolina. Syn., *Cissampelos smilacina*. Jacq. Ic. t. 629.
 — *virginicum*. See *M. canadense*, var. *lobatum*.

Meno'dora. (Derivation uncertain. Nat. ord., *Oleaceae*.)

Greenhouse evergreen shrub. Cuttings of half-ripened shoots in sand, under a hand-light. Summer temp., 55° to 70°; winter, 40° to 48°.

- M. trifida*. 2. Yellow. June. Chili. 1828. Syn., *Bolivaria trifida*.

Menonvillea. (Named after T. de Menonville, a French naturalist, Nat. ord., *Cruciferae*; Tribe, *Lepidineae*.)

- Hardy annual. Seeds; common garden-soil.
M. flifolia. 1. Greenish-white. August. Chili. 1836. Swt. Fl. Gard., ser. 2, t. 371.

Men'tha. Mint. (*Mentha* is the Latin name of the herb. Nat. ord., *Labiatae*; Tribe, *Satureineae*.)

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. arvensis*. 3. August. Britain. Eng. Bot. ed. 3, t. 1039-40.
 — *balsamea*. See *M. suaveolens*.
 — *blan'dea*. 2. White. September. Nepal. 1824. A synonym of *Elsholtzia incisa*.
 — *canadensis*. 1. August. N. Amer. 1800.
 — *glabrat'a*. 1. July. N. Amer. 1800.
 — *citra'ta*. July. Britain. Eng. Bot. ed. 3, t. 1029.
 — *coccine'a*. 1. Scarlet. July. E. Ind. 1823.
 — *dahur'ica*. 1. Red. July. Siberia. 1818. Syn., *Lepechinia clinopodiifolia*.
 — *dentat'a*. See *M. pratensis*, var. *crispa*.
 — *glabrata*. See *M. piperita*.
 — *incana*. 1. July. Greece. 1790.
 — *lavandul'cea*. 1. July. Spain. 1828.
 — *piper'ita*. 2. August. England. Eng. Bot. ed. 3, t. 1024-5. Syn., *M. glabrata*.
 — *pratensis crispa*. 1. July. Germany. 1816. Syn., *M. dentata*.
 — *pule'grum*. 1. August. Britain.
 — *gibralt'ricum*. Very dwarf and compact. Gibraltar Mint.
 — *pumila*. See *Dysophylla pumila*.
 — *Requie'ni*. 1. Lilac. August. Corsica. 1829.
 — *salic'ina*. Cape of Good Hope.
 — *sua'vis*. Red. July. France. Eng. Bot. ed. 3, t. 1923. Syn., *M. hirta*.
 — *verticillat'a*. B. M. t. 2907. See *Dysophylla pumila*.
 — *vir'idis*. 2. August. Britain.
 — *crispa*. 2. July. 1807. Syn., *M. hortensis*.

Mentze'lia. (Named after G. Mentzel, a German botanist. Nat. ord., *Loasaceae*. Allied to *Bartonia*.)

Easily raised from seed, and *hispida* from shoots in sand, under a glass, in heat; sandy loam and peat.

- M. aspera*. 2. Yellow. July. America. 1733. Hardy annual.
 — *bartonioides*. Sulphur. W. United States. 1849. Syns., *Euchnide* and *Micrasperma bartonioides*. B. M. t. 4491. Annual.
 — *hispida*. 2. Yellow. October. Mexico. 1835. Hardy herbaceous perennial. Syn., *M. stipitata*. Maund Bot. i. t. 34. Perennial.
 — *leucan'lis*. Yellow. California. 1890. Annual.

- M. Lindleyi*. 3. Yellow. June. California. 1834. Syn., *Bartonia aurea*. B. R. t. 1831. Annual.
 — *nuda*. 2. White. August. Missouri. 1811. Syn., *Bartonia nuda*. B. M. t. 5483. Biennial.
 — *oligosperma*. Bright orange. May. Upper Louisiana. 1812. B. M. t. 1760.
 — *ornat'a*. 2. White. July. Missouri. 1811. Syn., *Bartonia decapetala*. B. M. t. 1487. Annual.

Menyanthes. Buck Bean. (From *men*, a month, and *anthos*, a flower; the time of duration. Nat. ord., *Gentianaceae*; Tribe, *Menyantheae*. Allied to *Villarsia*.)

- Hardy perennial aquatics. Division of the plant, and by seed in spring; moist situation.
M. Crispa-galli. 1-2. Yellow. Spring. N. Amer. Syn., *Villarsia Crispa-galli*.
 — *trifoliat'a*. 1. White. July. Britain. Eng. Bot. ed. 3, t. 920.
 — *americana*. 1. Pale red. July. N. Amer. 1818. Syn., *M. americana*.
 — *exaltat'a*. B. M. t. 1029. See *Villarsia*.
 — *indica*. B. M. t. 668. See *Limnanthemum indicum*.
 — *nymphæoides*. See *Limnanthemum nymphæodes*.
 — *ovata*. B. M. t. 1909. See *Villarsia*.
 — *sarmentos'a*. B. M. t. 1328. See *Villarsia*.

Menzie'sia. (Named after A. Menzies, surgeon and naturalist to the expedition under Vancouver. Nat. ord., *Ericaceae*; Tribe, *Rhodoreae*. 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'tata*. 1. Red. April. Siberia.
 — *ferrug'inea*. 1. Brown. May. N. Amer. 1811. B. M. t. 1571.
 — *glab'ella*. Purple. Rocky Mountains. 1888.
 — *globulat'ris*. 1. Brown. May. N. Amer. 1806.

HARDY EVERGREENS.

- M. coer'ulea*. B. C. t. 164. See *Phyllodoce taxifolia*.
 — *empetrifolia*. Purple. June. N. Amer. 1810. B. M. t. 3176. Now referred to *Bryanthus*.
 — *polifolia*. Eng. Bot. ed. 3, t. 885, and its numerous varieties. See *Dubœccia polifolia*.

Mercury. (*Chenopodium bonus Henricus*.) 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 for 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 to pass required. Dress the beds with manure

the same as for asparagus; they will continue in production many years.

This must not be mistaken for *Mercurialis*, or Dog's Mercury, one of our common hedge-weeds; for this is poisonous. *Mercurialis* is a diœcious plant, and belongs to the Nat. ord., *Euphorbiaceæ*; but the *Chenopodium* belongs to the Nat. ord., *Chenopodiaceæ*.

Merende'ra. (From the Spanish name for Colchicum. Nat. ord., *Liliaceæ*; Tribe, *Colchiceæ*.)

Hardy bulbs. Culture the same as for COLCHICUM.

M. Aitchesonii. See *M. persica*.

— *Bulbocodium* des. Pale purple. October. Portugal. 1882.

— *Bulbocodium*. †. Rosy-lilac. Pyrenees and Spain. Syns., *Colchicum montanum* and *M. montana*.

— *caucasiaca*. †. Pale rose, purple. May. Caucasus. 1823. B. M. t. 3690.

— *Eichleri*. E. Caucasus. Gf. t. 952. Syn., *Bulbocodium Eichleri*.

— *ruthénica*. Bright carmine-purple. Transylvania. 1888. A synonym of *Bulbocodium vernum*, var. *versicolor*?

— *montana*. See *M. Bulbocodium*.

— *persica*. Pale lilac. November. India and Persia. 1872. Syns., *M. Aitchesonii*, B. M. t. 6012, *Bulbocodium Aitchesonii*, and *B. trigynum*.

Meriania. (In memory of a Dutch lady, *Sibylle de Merian*, authoress of a work on Surinam insects. Nat. ord., *Melastomaceæ*; Tribe, *Merianeæ*.)

Stove shrub. For cultivation, see MELASTOMA.

M. Karsténii. Crimson. Caraccas. 1852. Fl. Ser. t. 767.

Me'ron Narc'issi. Syns., *M. clavipes* and *M. equestris*. 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.

In the month of November, says Mr. Curtis, one or two large, roundish holes are sometimes found on the outside 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 humblebees, 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. (Named in honour of Professor Francis Charles Mertens, a German botanist. Nat. ord., *Boraginaceæ*; Tribe, *Borageæ*. Allied to *Pulmonaria*.)

Hardy herbaceous perennials, with handsome purplish-blue flowers. Seeds, or divisions of the plants in spring. Ordinary garden-soil. This must not be confounded with MERTENSIA of Willdenow (Nat. ord., *Filices*), which is now included in GLEICHENIA.

M. alpina. Blue. May. Rocky Mountains. 1875. *M. alpina* of B. M. t. 6178 is *M. lanceolata*.

— *dahurica*. †-1. Azure blue. June. Dahuria. Syn., *Pulmonaria dahurica*. B. M. t. 1743.

— *lanceolata*. †-1. Blue. May. Rocky Mountains. 1874. Syn., *M. alpina* of B. M. t. 6178.

— *maritima*. Blue. July. Coasts of Britain. Syn., *Pulmonaria maritima*. Oyster plant.

— *paniculata*. 1-2. Blue-purple. July. N. America. Syn., *Pulmonaria paniculata*. B. M. t. 2680.

— *sibirica*. Blue and white. Siberia and N. America. 1801.

— *virginica*. 1-2. Blue-purple. Spring. Virginia. 1799. Syn., *Pulmonaria virginica*. B. M. t. 160. Virginian Cowslip.

Mery'ta. (Derivation unexplained; perhaps from *meruo*, to wind, or roll up, Nat. ord., *Araliaceæ*.)

Stove evergreen shrubs, or small trees. For cultivation, see ARALIA.

M. latifolia. Yellow. Norfolk Island. 1835. Syn., *Botryodendron latifolium*.

— *sonchifolia*. New Caledonia. 1879.

Mesembry'anthemum. Fig-Marigold. (From *mesembria*, mid-day, and *antheum*, a flower; referring to the flowers opening better on sunny days. Nat. ord., *Ficoideæ*; Tribe, *Mesembryaceæ*.)

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*. 1. Pink. July. 1774.
 — *calendula'ceum*. $\frac{3}{4}$. Yellow. August. 1819.
 — *califo'rrnicum*. Purple. September. California. 1847.
 — *crystall'num*. White. July. Greece. 1775.
 Ice plant.
 — *geniculiflorum*. 1. White. August. 1727.
 — *glabrum*. $\frac{3}{4}$. Yellow. August. 1787.
 — *helianthoides*. $\frac{3}{4}$. Yellow. September. 1774.
 — *pilosum*. $\frac{3}{4}$. Yellow. July. 1800.
 — *pinnatifidum*. 1. Yellow. July. 1774. B. M. t. 67.
 — *pomeridia'num*. 1. Yellow. July. 1774. B. M. t. 540.
 — *Andre'wsii*. 1. Yellow. July.
 — *puberulum*. White. 1829. Biennial.
 — *pyropæum*. Rose, white. June.
 — *roseum*. Rose, white. June.
 — *tripolium*. $\frac{1}{2}$. Pale yellow. August. 1700. Biennial.

GREENHOUSE EVERGREEN TRAILERS.

- M. abbreviatum*. $\frac{1}{2}$. N. Holland. 1825. Salm. Monog. 19, 5.
 — *acinaciflorum*. $\frac{1}{2}$. Pink. 1714. Andr. Rep. t. 580.
 — *longum*. $\frac{1}{2}$. Pink. August.
 — *aquilatera'le*. $\frac{3}{4}$. Pink. June. N. Holland. 1791.
 — *attenuatum*. $\frac{1}{2}$. White. July. 1821.
 — *australe*. $\frac{1}{2}$. Yellow. July. New Zealand. 1733.
 — *barbatum*. $\frac{3}{4}$. Pink. July. 1705. B. M. t. 70.
 — *calyc'num*. $\frac{3}{4}$. White. July. 1819.
 — *canadens*. $\frac{1}{2}$. White. June. 1820.
 — *viridius*. White. September.
 — *clavellatum*. $\frac{1}{2}$. Pink. June. N. Holland. 1803.
 — *aggregatum*. $\frac{1}{2}$. Pink. June. N. Holland. 1803.
 — *minus*. $\frac{1}{2}$. Pink. N. Holland. 1810.
 — *crassifolium*. $\frac{1}{2}$. Pink. June. 1727.
 — *de'bile*. $\frac{1}{2}$. 1824.
 — *denum*. $\frac{1}{2}$. Pink. June. 1732. B. M. t. 1220.
 — *edu'le*. $\frac{1}{2}$. Pink. July. 1690. Hottentot Fig.
 — *filamentosum*. $\frac{1}{2}$. Pink. May. 1732. Salm. Monog. 20, 1.
 — *floribundum*. $\frac{3}{4}$. Pink. July. 1704.
 — *furfur'um*. $\frac{3}{4}$. Blush. 1830.
 — *gemmatum*. $\frac{3}{4}$. Pink. 1792.
 — *glaucescens*. $\frac{1}{2}$. Pink. July. 1804.
 — *hirtellum*. $\frac{1}{2}$. Pink. August. 1792. Salm. Monog. 51, 6.
 — *hispidium*. $\frac{3}{4}$. Purple. July. 1704.
 — *platyptalum*. $\frac{1}{2}$. Purple. July. 1820.
 — *hispifolium*. $\frac{3}{4}$. White. July. 1821.
 — *roseum*. $\frac{3}{4}$. Pink. July. 1813.
 — *la'cerum*. $\frac{1}{2}$. Pink. July. 1811.
 — *laevigatum*. $\frac{3}{4}$. Pink. June. 1802.
 — *repans*. $\frac{1}{2}$. Pink. July. 1774.
 — *rigidicaule*. $\frac{1}{2}$. Pink. May. 1819.
 — *Rossi*. $\frac{3}{4}$. Pink. Van Diemen's Land. 1820.
 — *rubricaul'le*. $\frac{1}{2}$. Pale purple. June. 1802.
 — *denisius*. $\frac{1}{2}$. Pink. 1818.
 — *subvirens*. $\frac{1}{2}$. Pink. 1813.
 — *rubroretictum*. $\frac{1}{2}$. Pink. 1811. B. M. t. 1732.
 — *compressum*. $\frac{1}{2}$. Pink. August.
 — *tenerum*. $\frac{1}{2}$. Pink. August.
 — *sarmentosum*. $\frac{1}{2}$. Red. April. 1805.

- M. Scho'llii*. 1. Pink. May. 1810. Salm. Monog. 17, 1.
 — *serrulatum*. $\frac{1}{2}$. Pink. November. 1795.
 — *viridius*. $\frac{3}{4}$. Pink. November.
 — *smile*. 1. Pink. 1819.
 — *spectabile*. 1. Red. May. 1787. B. M. t. 396.
 — *striatum*. $\frac{3}{4}$. Pink. July. 1727. Salm. Monog. 51, 1.
 — *pa'llens*. $\frac{1}{2}$. White. July.
 — *subhispidium*. $\frac{3}{4}$. Purple. July. 1704.
 — *subulatum*. $\frac{1}{2}$. Pink. 1768.
 — *torquatum*. $\frac{3}{4}$. Pink. August. 1820.
 — *validum*. $\frac{3}{4}$. Pink. May. 1824.
 — *virgatum*. $\frac{3}{4}$. Pink. March. 1793.

GREENHOUSE EVERGREEN SHRUBS.

- M. abyssinicum*. Purple. Abyssinia. 1874.
 — *acuminatum*. 2. White. August. 1820.
 — *acutangulum*. $\frac{1}{2}$. White. 1821. Salm. Monog. 36, 5.
 — *acutatum*. $\frac{1}{2}$. Red. July. 1793.
 — *adscendens*. $\frac{3}{4}$. Yellow. September. 1805. Salm. Monog. 8, 4.
 — *aduncum*. 1. Pink. February. 1795.
 — *agrostum*. $\frac{1}{2}$. Yellow. June. 1824. Salm. Monog. 5, 8.
 — *erectiusculum*. $\frac{1}{2}$. Yellow. May. 1824.
 — *minus*. $\frac{1}{2}$. Yellow. May. 1824.
 — *albicaule*. 1. White. August. 1824.
 — *albidum*. $\frac{1}{2}$. Yellow. July. 1714. B. M. t. 1824.
 — *albivum*. $\frac{1}{2}$. Yellow. September. 1823.
 — *albipunctatum*. $\frac{1}{2}$. September.
 — *aloides*. $\frac{3}{4}$. Yellow. 1819.
 — *anatomicum*. $\frac{3}{4}$. White. September. 1803. Salm. Monog. 62, 1.
 — *fragile*. $\frac{3}{4}$. White. 1803.
 — *anceps*. $\frac{1}{2}$. Pink. June. 1811. Salm. Monog. 22, 2.
 — *pa'llidum*. $\frac{1}{2}$. Pale pink. June. 1819.
 — *angustum*. $\frac{3}{4}$. Yellow. July. 1790.
 — *heterophyllum*. $\frac{1}{2}$. Yellow. July. 1790.
 — *pa'llidum*. $\frac{1}{2}$. Yellow. July. 1790.
 — *asperum*. $\frac{1}{2}$. 1818. Salm. Monog. 22, 3.
 — *caeruleascens*. $\frac{1}{2}$. 1820.
 — *aurantium*. $\frac{1}{2}$. Orange. July. 1793.
 — *aurum*. 1. Yellow. June. 1750. B. M. t. 262.
 — *bellidiflorum*. $\frac{1}{2}$. Red, white. July. 1717.
 — *subulatum*. $\frac{1}{2}$. Red. July. 1717.
 — *viride*. $\frac{1}{2}$. Red. July. 1717.
 — *bibracteatum*. $\frac{1}{2}$. Yellow. July. 1803.
 — *bicolorum*. $\frac{1}{2}$. Orange. July. 1732. B. M. t. 59.
 — *minus*. $\frac{1}{2}$. Orange. July.
 — *pa'tulum*. 1. Orange. July.
 — *bidentatum*. 1. Yellow. August. 1813.
 — *ma'jus*. $\frac{1}{2}$. Yellow. August. 1818.
 — *bifidum*. $\frac{1}{2}$. Yellow. November. 1795.
 — *bigibberatum*. $\frac{1}{2}$. Yellow. August. 1820.
 — *blaudum*. $\frac{1}{2}$. White. June. 1810. B. R. t. 582.
 — *Bolusii*. Yellow, edged with red. July. 1877. B. M. t. 6664.
 — *brachiatum*. $\frac{1}{2}$. Yellow. July. 1774.
 — *bracteatum*. $\frac{1}{2}$. Yellow. August. 1774. B. C. t. 251.
 — *brevicaul'le*. $\frac{1}{2}$. Pale yellow. August. 1820.
 — *brevifolium*. 1. Pale yellow. August. 1777. Syn., *M. erigerifolium*, Jacq. H. Schoenb. t. 477.
 — *Bro'weii*. Bright orange red, or purple. 1888. B. M. t. 6985.
 — *bulbosum*. $\frac{1}{2}$. Pink. August. 1820.
 — *calamiflorum*. 1. White. August. 1717.
 — *canaliculatum*. 2. Pink. August. 1794.
 — *caninum*. $\frac{1}{2}$. Yellow. September. 1717.
 — *ca'num*. $\frac{1}{2}$. Yellow. 1795.
 — *capitatum*. 1. Pale yellow. August. 1717. B. R. t. 494.
 — *ramigerum*. 1. Pale yellow. August. 1816.

- M. carinans*. $\frac{1}{2}$. 1818.
 — *caule scens*. $1\frac{1}{2}$. Pink. June. 1731.
 — *clandestinum*. $\frac{1}{2}$. White. June. 1822.
 — *coccinum*. $1\frac{1}{2}$. Scarlet. July. 1696. B.
 C. t. 1033.
 — *acutius*. $1\frac{1}{2}$. Scarlet. July.
 — *minus*. $1\frac{1}{2}$. Scarlet. July.
 — *compactum*. $\frac{1}{2}$. Yellow. November. 1780.
 — *compressum*. $1\frac{1}{2}$. Red. August. 1792.
 Salm. Monog. 22, 4.
 — *confertum*. $1\frac{1}{2}$. Pink. September. 1805.
 — *conspicuum*. 1. Red. September. 1806.
 — *Cooperi*. $\frac{1}{2}$. Rose-purple. S. Africa. 1862.
 B. M. t. 6312.
 — *corallinum*. 1. Pink. May. 1820.
 — *corallifolium*. $\frac{1}{2}$. Pink. July. 1774. Jacq.
 Ic. t. 487.
 — *variegatum*. Is a form with variegated
 leaves, much used for carpet bedding.
 1862.
 — *corniculatum*. 1. Pale yellow. April. 1732.
 — *isophyllum*. 1. Pale yellow. April.
 1732.
 — *coruscans*. 1. Pale yellow. August. 1812.
 — *crassicaule*. $\frac{1}{2}$. Pale yellow. July. 1815.
 Salm. Monog. 62, 6.
 — *crassuloides*. $\frac{1}{2}$. Pink. July. 1819.
 — *cruciatum*. $\frac{1}{2}$. Yellow. May. 1792.
 — *cultra*. $\frac{1}{2}$. Yellow. September. 1820.
 — *cuneifolium*. Rosy-purple. May. Jacq. Ic.
 t. 488.
 — *curtium*. $1\frac{1}{2}$. White. Salm. Monog. 36, 6.
 — *majus*. $1\frac{1}{2}$. White.
 — *minus*. $1\frac{1}{2}$. White.
 — *poli*. $1\frac{1}{2}$. White.
 — *curvifolium*. 2. White. June. 1818. Salm.
 Monog. 26, 2.
 — *curvifolium*. 1. Pink. October. 1792.
 Salm. Monog. 47, 2.
 — *cyllindricum*. $\frac{1}{2}$. Red. May. 1792.
 — *cymbifolium*. 1. Yellow. 1822.
 — *cymbifolium*. $1\frac{1}{2}$. Yellow. 1792.
 — *decumbens*. 1. Pale red. July. 1759.
 — *deci piens*. 1. Pale yellow. August. 1820.
 — *deflexum*. 1. Pink. August. 1774.
 — *defolia*. 2. July. 1820.
 — *deltoides*. $1\frac{1}{2}$. Pink. May. 1731. Salm.
 Monog. 30, 2.
 — *denticulatum*. $\frac{1}{2}$. Yellow. April. 1793.
 — *candidissimum*. $\frac{1}{2}$. Yellow. April.
 — *glaucum*. $\frac{1}{2}$. Yellow. April.
 — *depressum*. $\frac{1}{2}$. Yellow. October. 1795.
 B. M. t. 1866.
 — *dividuum*. $\frac{1}{2}$. Yellow. October. 1819.
 — *diffolium*. $\frac{1}{2}$. Yellow. August. 1732. Salm.
 Monog. 7, 3.
 — *dilatatum*. 3. White. July. 1820.
 — *diminutum*. $\frac{1}{2}$. Red. April. 1789.
 — *cauliculatum*. $\frac{1}{2}$. Red. April. 1789.
 — *diversifolium*. 1. Pale yellow. June. 1726.
 Salm. Monog. 15, 2.
 — *atrovirens*. 1. Pale yellow. August.
 — *brevifolium*. 1. Pale yellow. August.
 — *glaucum*. 1. Pale yellow. August. 1726.
 — *laetevirens*. 1. Pale yellow. August.
 — *dolabrifolium*. $\frac{1}{2}$. Yellow. June. 1705. B.
 M. t. 32.
 — *duvium*. 1. Pale yellow. August. 1800.
 — *echinata*. 1. Yellow. August. 1774. Jacq.
 H. Schoenb. t. 437.
 — *album*. $\frac{1}{2}$. White. August. 1774.
 — *elegans*. Purple. Summer. Jacq. H. Schoenb.
 t. 436.
 — *elongatum*. 1. Pale yellow. May. 1793.
 Salm. Monog. 16, 1.
 — *justifolium*. 1. Pale yellow. May. 1793.
 — *minus*. 1. Pale yellow. May. 1793.
 — *emarginatum*. 2. Pink. July. 1732.
 — *erigerifolium*. Jacq. H. Schoenb. t. 477. See
 M. brevifolium.
 — *erminum*. $\frac{1}{2}$. Yellow. May. 1824. Salm.
 Monog. 5, 6.

- M. expansum*. $\frac{1}{2}$. Pale yellow. July. 1705.
 — *falcatum*. 1. Pink. July. 1727.
 — *falcifolium*. $1\frac{1}{2}$. Pink. July. 1805. Salm.
 Monog. 29, 1.
 — *fastigiatum*. $1\frac{1}{2}$. White. August. 1794.
 — *reflexum*. $1\frac{1}{2}$. White. August. 1792.
 — *fellinum*. $\frac{1}{2}$. Yellow. September. 1730.
 — *fibulifolium*. $\frac{1}{2}$. 1795.
 — *ficifolium*. $\frac{1}{2}$. July. 1819.
 — *filicaulis*. $1\frac{1}{2}$. Pink. September. 1800. Salm.
 Monog. 47, 4.
 — *flissum*. $\frac{1}{2}$. 1776.
 — *flaccidum*. Yellow. Jacq. H. Schoenb. t. 475.
 — *flavum*. $\frac{1}{2}$. Yellow. August. 1820. Salm.
 Monog. 50, 7.
 — *flexile*. $1\frac{1}{2}$. Pink. August. 1820.
 — *flexifolium*. $1\frac{1}{2}$. Pink. October. 1820.
 laetevirens. $1\frac{1}{2}$. Pink. October. 1818.
 — *flexuosum*. $1\frac{1}{2}$. White. July. 1795.
 — *foliosum*. 3. Pink. September. 1802.
 — *forficatum*. $1\frac{1}{2}$. Pink. September. 1758.
 — *formosum*. 1. Crimson. August. 1820.
 B. C. t. 1293.
 — *fragrans*. $\frac{1}{2}$. Yellow.
 — *fulvum*. 2. Tawny. July. 1820.
 — *gemmifolium*. Pale purple. May. 1826.
 B. C. t. 1160.
 — *gibbosum*. $\frac{1}{2}$. Red. February. 1780.
 — *glabrum*. Yellow. August. 1787. Andr.
 Rep. t. 57.
 — *gladiatum*. 2. Pink. July. 1792. Jacq.
 H. Schoenb. t. 438.
 — *glaucum*. $1\frac{1}{2}$. Pink. July.
 — *crassum*. $1\frac{1}{2}$. Pink. July.
 — *glaucum*. $1\frac{1}{2}$. Orange. June. 1696. Jacq.
 H. Schoenb. t. 439.
 — *glomeratum*. $1\frac{1}{2}$. Pink. July. 1732. B. C.
 t. 1043.
 — *gracile*. $1\frac{1}{2}$. Red. September. 1794.
 — *gracilius*. 1. Red. September.
 — *grandifolium*. $\frac{1}{2}$. Yellow. July. 1824.
 Salm. Monog. 8, 3.
 — *granifolium*. $\frac{1}{2}$. Yellow. September. 1727.
 — *Haworthii*. 1. Brown. March. 1793.
 — *heteropetalum*. 2. Pink. June. 1794. Salm.
 Monog. 21, 2.
 — *heterophyllum*. $\frac{1}{2}$. Yellow. 1795. Andr.
 Rep. t. 540.
 — *hirtum*. $\frac{1}{2}$. Purple, yellow. Summer. S.
 Africa. 1862. G. C. 1878, x. p. 139, fig.
 19.
 — *horizontalis*. 2. Straw. July. 1795.
 — *hybridum*. $\frac{1}{2}$. Yellow.
 — *imbricans*. 2. Pink. July. 1818.
 — *imbricatum*. 3. White. July. 1792.
 — *medium*. 3. White. July.
 — *viride*. 3. White. July.
 — *incaeruleum*. 1. Orange. July. 1716.
 — *inclaudens*. $1\frac{1}{2}$. Pink. June. 1805. B. M.
 t. 1663.
 — *incomptum*. $\frac{1}{2}$. White. July. 1819. B.
 C. t. 1311.
 — *inconspicuum*. $\frac{1}{2}$. Red. July. 1823.
 — *incurvatum*. $1\frac{1}{2}$. Pink. July. 1802. B. C.
 t. 1265.
 — *densifolium*. $1\frac{1}{2}$. Pink. June. 1809.
 — *dilatans*. $1\frac{1}{2}$. Pink. June.
 — *paludosum*. $1\frac{1}{2}$. Pink. June.
 — *roseum*. $1\frac{1}{2}$. Pink. June.
 — *inflatum*. 1. Pink. June. 1819.
 — *instillatum*. 1. Purple. September. 1790.
 — *flavo-roseum*. 1. Yellow. September.
 1816.
 — *minus*. $\frac{1}{2}$. Yellow. September.
 — *intonsum*. $\frac{1}{2}$. Pink. July. 1824. Salm.
 Monog. 52, 2.
 — *album*. $\frac{1}{2}$. Pink. July. 1824.
 — *introsum*. Whitish, rose, ochre or red. 1824.
 B. M. t. 6057.
 — *juveum*. 1. Pink. September. 1800. Salm.
 Monog. 45, 1.
 — *laeve*. $1\frac{1}{2}$. August. 1774.

- M. lanceola* tum. $\frac{3}{4}$. White. August. 1795.
 — *roseum*. $\frac{3}{4}$. Pink. May. 1813.
 — *la* tum. $\frac{3}{4}$. Yellow. July. 1820.
 — *breve*. $\frac{3}{4}$. Yellow. July. 1802.
 — *lepta* leon. $1\frac{1}{2}$. Pink. August. 1819.
 — *lineola* tum. $\frac{3}{4}$. Pink. August. 1819. Salm.
 Monog. 33, 7.
 — *la* ve. $\frac{1}{2}$. July. 1819.
 — *ma* nus. $\frac{1}{2}$. July. 1819.
 — *ni* tens. $\frac{3}{4}$. August. 1819.
 — *linguifolium*. $\frac{3}{4}$. Yellow. July. 1732. B.
 C. t. 1307.
 — *assu* rgens. $\frac{1}{2}$. Yellow. July. 1819.
 — *prostra* tum. $\frac{1}{2}$. Yellow. July.
 — *rufescens*. $\frac{3}{4}$. Yellow. July. 1732.
 — *subcruciatum*. $\frac{1}{2}$. Yellow. 1820.
 — *longispinum*. 1. Pale yellow. September.
 1820. Salm. Monog. 54, 4.
 — *longum*. $\frac{3}{4}$. Yellow. September. 1725.
 — *angustius*. $\frac{3}{4}$. Yellow. September.
 — *attolens*. $\frac{3}{4}$. Yellow. September.
 1819.
 — *declivum*. $\frac{3}{4}$. Yellow. September. Salm.
 Monog. 8, 9.
 — *depressum*. $\frac{3}{4}$. Yellow. September.
 — *purpurascens*. $\frac{3}{4}$. Yellow. September.
 1819.
 — *unca* tum. $\frac{3}{4}$. Yellow. September.
 1819.
 — *lora* tum. $\frac{1}{2}$. White. July. 1819.
 — *ro* tum. 1. Pale yellow. September. 1732.
 — *congestum*. 1. Pale yellow. September.
 1805.
 — *lucidum*. $\frac{1}{2}$. Yellow. September. 1732.
 — *luna* tum. 1. Pink. July. 1812. Salm.
 Monog. 29, 3.
 — *lupinum*. $\frac{1}{2}$. Yellow.
 — *luteolum*. $\frac{1}{2}$. Pale yellow. June. 1820.
 — *lutum*. $1\frac{1}{2}$. Pale yellow. June. 1824.
 — *maculatum*. $1\frac{1}{2}$. Scarlet. 1732.
 — *magnipunctatum*. $\frac{1}{2}$. Yellow. 1822.
 — *unciale*. 1. Yellow. 1822.
 — *marginatum*. 1. White. May. 1793.
 — *ma* zimum. $1\frac{1}{2}$. Pink. September. 1737.
 B. R. t. 358.
 — *medivum*. $\frac{3}{4}$. Yellow. June.
 — *me* cans. $1\frac{1}{2}$. Scarlet. 1704. B. M. t. 448.
 — *microphyllum*. $\frac{1}{2}$. Pink. May. 1795.
 — *minimum*. $\frac{1}{2}$. Pale yellow. October. 1796.
 B. M. t. 1378.
 — *mini* tum. $\frac{1}{2}$. Pink. October. 1795.
 — *mo* lle. 1. Pink. October. 1774.
 — *moniliforme*. $\frac{1}{2}$. White. May. 1791.
 — *micronatum*. $\frac{1}{2}$. Pink. 1794.
 — *microniforme*. 1. Yellow. July. 1821.
 — *multiflorum*. 3. White. August. 1792.
 Salm. Monog. 37, 1.
 — *ma* nus. 3. White. August.
 — *ni* tens. 3.
 — *pa* tens. 3. White. August. 1820.
 — *ru* brum. 3. Red. August.
 — *murica* tum. $1\frac{1}{2}$. Pink. May. 1731. Salm.
 Monog. 30, 3.
 — *ma* nus. $1\frac{1}{2}$. Pink. May.
 — *marium*. $\frac{3}{4}$. Yellow. September. 1790.
 — *musculinum*. $\frac{1}{2}$. Yellow. June. 1830.
 — *mustellinum*. $\frac{1}{2}$. Yellow. June. 1820.
 — *mutabile*. $1\frac{1}{2}$. Pink. August. 1792.
 — *nitidum*. 2. Yellow. August. 1790.
 — *no* bile. $\frac{3}{4}$. Yellow. July. 1822.
 — *noctiflorum*. 2. White. July. 1714. B. C.
 t. 495.
 — *ela* tum. 3. Scarlet. July. 1714.
 — *stramineum*. 2. Straw. July. 1732.
 — *nodiflorum*. 1. September. 1739. Sibth.
 Fl. Gr. t. 480.
 — *nuciforme*. $1\frac{1}{2}$. 1790.
 — *obovatum*. $\frac{3}{4}$. White. June. 1786.
 — *obcordatum*. $\frac{3}{4}$. White. June. 1796. B.
 M. t. 1647.
 — *obliquum*. 1. Purple. August. 1819.
 — *obscuratum*. 1. White. 1796.
- M. obtusum*. $\frac{1}{2}$. Pale red. March. 1792.
 — *octophyllum*. $\frac{1}{2}$. Yellow. November. 1819.
 — *longiusculum*. $\frac{1}{2}$. Yellow. November.
 1774.
 — *roseum*. $\frac{1}{2}$. Red. November. 1774.
 — *parviflorum*. 3. Purple. August. 1800.
 — *parviflorum*. $\frac{1}{2}$. White. August. 1820.
 Jacq. H. Schoenb. t. 278.
 — *patulum*. $1\frac{1}{2}$. Pink. October. 1811.
 — *perfoliatum*. 1. Purple. July. 1714.
 — *monacanthum*. 1. Purple. July.
 — *pervivide*. $\frac{3}{4}$. Red. February. 1792.
 — *pisiforme*. $\frac{1}{2}$. White. 1796.
 — *polyanthum*. 1. Pink. August. 1803. B.
 C. t. 1281.
 — *polyphyllum*. 2. Pink. June. 1819.
 — *praepinguue*. $\frac{1}{2}$. Yellow. September. 1792.
 Salm. Monog. 7, 5.
 — *prae* mbens. 1. Pale yellow. April. 1820.
 — *proditum*. 1. Rose. May. 1822.
 — *pubescens*. $\frac{1}{2}$. Red. February. 1792.
 — *pugioniforme*. 1. Pale yellow. August.
 1714. Salm. Monog. 16, 4.
 — *bie* nne. 1. Pale yellow. August. 1714.
 — *ca* rneum. 1. Pink. August. 1714.
 — *purpuratum*. 1. Purple. August. 1714.
 — *pulchellum*. $\frac{1}{2}$. Pink. April. 1793.
 — *revolutum*. $\frac{1}{2}$. Pink. April.
 — *pulverulentum*. $\frac{1}{2}$. Pink. May. 1792.
 — *punctatum*. $\frac{1}{2}$. Red. July. 1793.
 — *purpureo-album*. $\frac{1}{2}$. White. August. 1824.
 — *pustulatum*. $\frac{3}{4}$. Yellow. August. 1818.
 Salm. Monog. 8, 10.
 — *pygmaeum*. $\frac{1}{2}$. Pink. 1805.
 — *quadridium*. $\frac{1}{2}$. Yellow. November. 1795.
 — *radia* tum. $\frac{1}{2}$. Red. September. 1732.
 — *ramulosum*. $\frac{1}{2}$. Yellow. June. 1791.
 — *retitum*. $\frac{3}{4}$. White. July. 1819.
 — *relaxatum*. 1. Pink. July. 1815. Salm.
 Monog. 63, 1.
 — *retroflexum*. $\frac{1}{2}$. Pink. July. 1724.
 — *rigidum*. $1\frac{1}{2}$. White. August. 1793.
 — *robustum*. $\frac{3}{4}$. Yellow. 1795.
 — *roseum*. $\frac{3}{4}$. Pink. July. 1795. Salm.
 Monog. 29, 4.
 — *a* lum. $\frac{3}{4}$. White. July. 1819.
 — *lineare*. $\frac{3}{4}$. White. July. 1819.
 — *rosta* lum. $\frac{1}{2}$. White, pink. June. 1820.
 Salm. Monog. 35, 1.
 — *rostra* tum. $\frac{1}{2}$. Yellow. April. 1732.
 — *Salvia*. $\frac{3}{4}$. Yellow. October. 1818. Salm.
 Monog. 7, 8.
 — *angustifolium*. 1. Yellow. October.
 1823.
 — *semicruciatum*. 1. Yellow. October.
 1818.
 — *salmolinum*. 3. White. September. 1819.
 — *scabrum*. $1\frac{1}{2}$. Pink. July. 1731.
 — *purpuratum*. 1. Purple. July. 1731.
 — *scalpratum*. $\frac{3}{4}$. Yellow. September. 1714.
 Salm. Monog. 8, 1.
 — *scapigerum*. $\frac{1}{2}$. Yellow. August. 1723.
 — *semicyathricum*. $\frac{3}{4}$. Yellow. June. 1732.
 Salm. Monog. 7, 2.
 — *serratum*. 2. Pink. June. 1707.
 — *setuliferum*. 1. Violet-purple. S. Africa.
 1876.
 — *speciosum*. $1\frac{1}{2}$. Scarlet. July. 1793.
 — *spectabile*. 1. Crimson. June. 1787. B.
 M. t. 396.
 — *spiniforme*. 1. Pink. September. 1793.
 Salm. Monog. 47, 1.
 — *subadunum*. 1. Pink. September.
 — *spinosum*. $1\frac{1}{2}$. Pink. July. 1714.
 — *spinuliferum*. 1. Pale yellow. August.
 1794.
 — *splenidens*. $1\frac{1}{2}$. White. July. 1716.
 — *stellatum*. $\frac{3}{4}$. Pink. September. 1716.
 — *stelligerum*. $\frac{3}{4}$. Pink. September. 1793.
 Salm. Monog. 52, 4.
 — *stipulaeum*. $1\frac{1}{2}$. Pink. May. 1723.
 — *strictum*. 3. Yellow. 1795.

- M. subcompre'ssum*. 1 $\frac{1}{2}$. Purple. July. 1823.
 — *mi'nus*. 1. Purple. July. 1823.
 — *subglob'sum*. 1. Red. August. 1795.
 — *sulca'tum*. 3. White. August. 1819.
 — *surre'ctum*. 1. Yellow. October. 1819.
 — *brevis'lium*. $\frac{3}{4}$. Yellow. October. 1819.
 — *Sutherlandi'ndii*. $\frac{1}{2}$. Pale purple. Summer.
 Natal. 1870. B. M. t. 6299.
 — *tauri'num*. $\frac{3}{4}$. Yellow. October. 1735.
 — *ten'e'lium*. 1 $\frac{1}{2}$. White. August. 1792.
 — *te'nue*. 1. 1819.
 — *tenuifo'rum*. 2. Pink. September. 1820.
 — *tenuifo'lium*. 1. Scarlet. July. 1700.
 Salm. Monog. 46, 6.
 — *ere'ctum*. 1 $\frac{1}{2}$. Scarlet. July.
 — *tereti'folium*. $\frac{1}{2}$. Pink. June. 1794.
 — *tereti'scutum*. $\frac{1}{2}$. Pink. 1794.
 — *testa'ceum*. 3. Orange. August. 1820.
 — *testicula're*. $\frac{1}{4}$. White. October. 1774. B.
 M. t. 1573.
 — *tigr'i'num*. $\frac{1}{2}$. Yellow. October. 1790. B.
 R. t. 260.
 — *tortuo'sum*. $\frac{1}{2}$. Pale yellow. August. 1705.
 — *tri'color*. 1. Yellow, red. October. 1794.
 B. M. t. 2144.
 — *truncate'lium*. $\frac{1}{4}$. Pale yellow. July. 1795.
 B. M. t. 6077.
 — *tubero'sum*. 3. Orange. April. 1714.
 — *ni'nus*. 1 $\frac{1}{2}$. Orange. August. 1714.
 — *tumi'dulum*. 3. Pink. March. 1802.
 — *mi'nus*. 3. Pink. March. 1820.
 — *umbella'tum*. 3. White. July. 1727.
 — *ano'malum*. 3. White. July.
 — *umbellifo'rum*. 1 $\frac{1}{2}$. August. 1820. Jacq.
 H. Schoenb. t. 478.
 — *vagina'tum*. 1 $\frac{1}{2}$. White. July. 1802.
 — *parvifo'rum*. 1 $\frac{1}{2}$. White. July.
 — *varia'bile*. 1 $\frac{1}{2}$. Yellow. July. 1796. Salm.
 Monog. 46, 2.
 — *la'vius*. 1 $\frac{1}{2}$. Yellow. July. 1796.
 — *var'ians*. 1 $\frac{1}{2}$. Pale yellow. July. 1706.
 — *verrucula'tum*. 1 $\frac{1}{2}$. Yellow. May. 1731.
 Salm. Monog. 39, 1.
 — *Candollii*. 1 $\frac{1}{2}$. Yellow. May.
 — *vers'icolor*. Pink. June. 1795.
 — *villo'sum*. 1. July. 1759.
 — *viola'ceum*. 2. Purple. July. 1820.
 — *vi'rens*. $\frac{3}{4}$. Pink. June. 1821. Salm.
 Monog. 24, 1.
 — *vi'ride*. 1. Pale purple. July. 1792. Salm.
 Monog. 33, 2.
 — *vitta'tum*. $\frac{1}{4}$. Yellow, red. S. Africa. 1877.
 — *vulpi'num*. $\frac{1}{4}$. Yellow. September. 1795.

Mesochlæ'na. (From *mesos*, half, and *chlaina*, a covering; alluding to the indusium. Nat. ord., *Filices*—*Polypodiaceæ*.)

Stove fern. See FERNS.

M. javan'ica. 4. Java.

Mesospini'dium. (From *mesos*, medium-sized, and *spinidion*, a bird. Nat. ord., *Orchidææ*; Tribe, *Vandææ*—*Oncidiææ*.) By some authors united with *Odontoglossum*.

Cool stove orchid. See ORCHIDS.

- M. Bowma'ni*. Green, rosy. Columbia. 1869.
 — *incan'tans*. Yellowish, brown, white. April. Columbia. 1878.
 — *juca'ndum*. Green, brown. Brazil. 1877.
 — *sangui'neum*. Deep rose. Ecuador. 1867.
 A synonym of *Cochlidia sanguinea*.
 — *vulca'nicum*. Lake-red, rose. Peru. 1872. Garden, 1882. April 29. A synonym of *Cochlidia vulcanica*.

Me'spilus. Medlar. (From *mesos*, half, and *pilos*, a ball; referring to the

shape of the medlar fruit. Nat. ord., *Rosaceæ*; Tribe, *Pomeæ*. Allied to *Pyrus*.)

Hardy deciduous trees, with white flowers. By seeds, which germinate the second season, after being sown when the fruit is ripe; by layers, or rarely by cuttings, but chiefly by grafting or budding on the Hawthorn, etc.; good, rich, loamy soil. See MEDLAR.

M. Amelanchier. See *Amelanchier vulgaris*.

- *germa'nica*. 12. June. England.
 — *dis'p'usa*. 12. June. Europe.
 — *stri'cta*. 12. June. Europe. Evergreen.
 — *sylo'e'stris*. Europe.
 — *grandiflo'ra*. White. May. China.
 — *japo'nica*. See *Photinia japonica*.
 — *loba'ta*. 15. May.

Messerschmi'dia. A synonym of *Tournefortia*.

Me'sua. (Named after *Mesue*, an Arabian botanist. Nat. ord., *Guttiferææ*; Tribe, *Calophyllææ*. Allied to *Calophyllum*.)

The sweet-scented flowers of *Me'sua ferrea* 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. ferrea. 40. White. July. E. Ind. 1837.

Metala'sia. (From *meta*, a change, and *lasios*, hairy; referring to the older leaves losing their downy covering. Nat. ord., *Compositææ*; Tribe, *Inuloideææ*. Allied to *Gnaphalium*.)

Greenhouse evergreens, from South Africa, 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. ai'rea*. Yellow. June. 1816.
 — *dive'rgens*. 2. July. 1816.
 — *fastigia'ta*. 3. June. 1812.
 — *imbrica'ta*. May. 1816. Syn., *Erythropogon imbricatus*.
 — *macrona'ta*. 2. June. 1824.
 — *merica'ta*. 2. June. 1824.
 — *phylicoi'des*. June. 1816.
 — *pu'ngens*. June. 1815.
 — *seriphioi'des*. 3. Yellow. 1825.
 — *umbella'ta*. Rose. May. 1816. Syn., *Erythropogon umbellatus*.

Metaste'lma. (From *mene*, the moon, and *stelma*, a crown; referring to the shape of the heads of flowers. Nat. ord., *Asclepiadaceææ*; Tribe, *Cynancheææ*.)

Stove evergreen twiner. Cuttings of the young shoots when three inches long, taken off close to the stem, in sand, under a glass, and in bottom-heat; peat and loam. Winter temp., 55° to 60°; summer, 60° to 80°.

M. parvifo'rum. 6. Green, white. W. Ind.

Metho'nica grandiflo'ra. B. M. t. 5216. See *Gloriosa superba*, var. *grandiflora*.

Metrodo'rea. (In memory of *Metrodorus Sabinus*, said to have been the

first draughtsman of plants. Nat. ord., *Rutaceæ*.)

Stove shrub. Cuttings under a bell-glass in heat. Light loam and peat. Summer temp., 60° to 85°; winter, 50° to 60°.

M. atropurpurea. 5. Purple. Mexico. 1851. Fl. Ser. t. 337.

Metroside'ros. (From *metra*, heart-wood, and *sideros*, iron; referring to the hardness of the wood. Nat. ord., *Myrtaceæ*; Tribe, *Leptospermeæ*. 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 conservatory wall.

M. angustifolia. 20. Yellow. Cape of Good Hope. 1787.

— *anómala*. See *Angophora cordifolia*.

— *a'spera*. Cape of Good Hope. 1824.

— *buxifolia*. White. August. New Zealand. B. M. t. 4515.

— *capitata*. 5. Pink. Cape of Good Hope. 1824.

— *citri'na*. B. M. t. 260. See *Callistemon lanceolatus*.

— *corifolia*. 4. White. N. Holland.

— *fo'rida*. 5. Red. May. New Zealand. B. M. t. 4471.

— *glomulifera*. 15. Yellow, green. May. N. S. Wales. 1805.

— *hirsu'ta*, Andr. Rep. t. 281, and *hi'spida*, B. M. t. 1960. See *Angophora cordifolia*.

— *linearifolia*. See *Callistemon rigidus*, var. *linearifolius*.

— *robu'sta*. 80. Scarlet. June. New Zealand. 1845.

— *sal'igna*. B. M. t. 1821. See *Callistemon satignus*.

— *semperfo'rens*. B. C. t. 523. See *Callistemon lanceolatus*.

— *specio'sa*. B. M. t. 1761. See *Callistemon speciosus*.

— *tomen'tosa*. 50. Red. July. New Zealand.

— *ve'ra*. 20. Yellow, green. April. E. Ind. 1819.

— *viridifolia*. B. M. t. 2602. See *Callistemon satignus*, var. *viridiflorus*.

Metro'xylon. (From *metra*, the heart of a tree, and *xylon*, wood. Nat. ord., *Palmææ*; Tribe, *Lepidocaryeæ*.)

Stove palms.

M. Ru'mphii. 50. Green. E. Indies. 1800.

Syns., *M. Sagus* and *Sagus Rumphii*.

— *vitie'nse*. Fiji Islands.

Metterni'chia. (In honour of the Austrian Prince Metternich-Winneburg. Nat. ord., *Solanaceæ*; Tribe, *Cestrineæ*.)

An evergreen stove shrub. For culture, see that of the evergreen species of *LISIANTHUS*.

M. prin'ceps. 3. White. August. Brazil. 1854. B. M. t. 4747. Syn., *M. princeps*.

Me'um. (From *meon*, a name used by Dioscorides. Nat. ord., *Umbelliferaæ*; Tribe, *Seselineæ*.)

Hardy perennial, propagated by divisions.

M. athama'nticum. 1-2. White. Britain. Eng. Bot. ed. 3, t. 606.

Mexican Lily. *Hippea'strum Regi'næ*.

Mexican Poppy. *Argemone*.

Mexican Tea. *Chenopo'dium ambrosioi'des*.

Mexican Thistle. *Cnicus consp'icuos*.

Mexican Tiger-flower. *Tigri'dia pavonia*.

Meye'nia. (In honour of M. Meyen, Nat. ord., *Acanthaceæ*; Tribe, *Thunbergieæ*.) See **Thunbergia**.

M. erecta. B. M. t. 5013. See *Thunbergia erecta*.

— *Hawtayne'na*. Maund Bot. t. 188. See *Thunbergia Hawtayneana*.

— *Vogelia'na*. B. M. t. 5389. See *Thunbergia Vogeliana*.

Meze'reon. *Da'phne Meze'reum*.

Mice. Various plans have been suggested to preserve peas and beans when sown from the ravages of mice. 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., *Campanulaceæ*; Tribe, *Campanuleæ*. 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. 4. Pale red. July. Levant. 1787. B. M. t. 219.

— *deca'ndra*. 3. Light blue. July. Persia. 1829.

— *lævigata*. 3. White. July. Persia. 1827. B. M. t. 3123.

Miche'lia. (Named after P. A. Micheli, an Italian botanist. Nat. ord., *Magnoliaceæ*; Tribe, *Magnolieæ*.)

Stove evergreen tree. 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. 20. Yellow. E. Ind. 1779.

— *fusca'ta*. See *Magnolia fuscata*.

— *lanuginosa*. 12. Pale yellow. Himalayas. 1865. B. M. t. 6179.

Mico'nia. (Named after D. Micon, a Spanish botanist. Nat. ord., *Melast-*

tomaceæ; Tribe, *Miconiææ*. 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. acinodendron*. 6. Purple. Jamaica. 1804.
a/bicans. 10. White. Mexico. 1815. Syn., *Chitonía albicans*.
 — *angustata*. 5. Trinidad. 1820.
 — *flammea*. S. America. 1865.
 — *Fothergilla*. 15. White, purple. May. S. America. 1815. Syns., *Chitonía Fothergilla* and *Diplochita Fothergilla*.
 — *grandifolia*. 20. Trinidad. 1820.
 — *Hookeria*'na. Greenish. July. Peru. 1863. Syn., *M. pulverulenta*.
 — — *trifasciata*. White; the three ribs of the leaf silvery. Peru. 1874.
 — *impetiolaris*. 4. W. Ind. 1822
levigata. 6. W. Ind. 1815.
 — *longifolia*. 4. Guiana. 1817.
 — *macrophylla*. 10. Rose. May. 1820. Syn., *Diplochita macrophylla*.
 — *magnifica*. See *Cyanophyllum magnificum*.
 — *metallicum*. See *Cyanophyllum metallicum*.
 — *purpureascens*. 4. Guiana. 1817.
 — *pyramidalis*. 3. White. July. Trinidad. 1815. Syn., *Chitonía pyramidalis*.
 — *rubeascens*. 6. S. Amer. 1818.
 — *Swartzia*'na. 12. Purple. W. Indies. 1815. Syns., *Chitonía Tamonia* and *Diplochita Swartziana*.
 — *tenuifolia*. 6. S. Amer. 1818.
 — *tetrandra*. 2. Jamaica. 1815.
 — *Teysmannia*'na. White. 1867.
 — *trinervia*. 4. July. Jamaica. 1795.

Micranthella. (From *mikros*, small, and *anthos*, a flower. Nat. ord., *Melastomaceæ*.) Now united with **Pleroma**.

Greenhouse shrub. For cultivation, see CHETOGASTRA.

M. Candolesi. Purple. Quito. 1864. A synonym of *Pleroma exappendiculata*.

Micranthemum. (From *mikros*, small, and *anthos*, a flower. Nat. ord., *Scrophulariaceæ*; Tribe, *Gratiolææ*.)

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. orbiculatum. $\frac{1}{2}$. White. May. Carolina. 1826.

Micranthus. (From *mikros*, small, and *anthos*, a flower. Nat. ord., *Iridææ*; Tribe, *Ixiææ*.) Sometimes regarded as a section of **Watsonia**.

For culture, see IXIA.

- M. cepa'ceus*. See *Watsonia spicata*.
 — *istulosus*. See *Watsonia istulosa*.
 — *plantagineus*. See *Watsonia plantaginea*.

Microca'chrys. (From *mikros*, small, and *kachrys*, a pine cone; the cones being very small. Nat. ord., *Conifereæ*; Tribe, *Podocarpeæ*.)

Greenhouse evergreen, allied to ARTHROTAXIS.
M. tetragona. 20. Tasmania. 1857. B. M. t. 5576.

Microcy'cas. (From *mikros*, small,

and *Cycas*, *Cycad.* Nat. ord., *Cycadaceæ*; Tribe, *Encephalarteeæ*.)

For culture, see MACROZAMIA.

M. calocoma. 2. Cuba. Syns., *Macrozamia calocoma* and *Zamia calocoma*.

Microga'ster. See **Ichneumon Flies**.

Microglo'ssa. (From *mikros*, small, and *glossa*, a tongue. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*.)

Hardy shrub.

M. albescens. 2-4. Pale blue, yellow. Himalayas. 1842. B. M. t. 6672. Syn., *Aster cabulicus*.

Microle'pia. (From *mikros*, small, and *lepis*, a scale; the appearance of the spore, or seed-cases. Nat. ord., *Filices*.)

Now united with **Davallia**.

Stove ferns, with brown spores. See FERNS.

- M. ala'ta*. April. Jamaica.
 — *anthriscifolia*. S. Africa. 1878.
 — *cristata*. April. Isle of Luzon.
 — *hirta cristata*. 3. Polynesia. 1878.
 — *no'va-zela'ndiæ*. 1. New Zealand.
 — *pinnata*. May. Isle of Luzon.
 — *platyphylla*. 4. E. Indies.
 — *polypodio'ides*. 4. E. Indies. 1836.
 — *rhomboides*. April. N. Holland. 1836.
 — *scabra*. 2. Japan. 1862. Greenhouse.
 — *strigosa*. 2. Japan. 1862. Greenhouse.
 — *trichostri'ca*. April. Samaria.

Microl'icia. (From *mikros*, small, and *alkia*, stature; dwarf plants. Nat. ord., *Melastomaceæ*; Tribe, *Microlicieæ*. Allied to *Rhexia*.)

Stove plants, with purple flowers, in June. Seeds, divisions in spring, and cuttings of small young shoots of *recu'eva*, under a bell-glass, in heat; sandy peat, with pieces of charcoal and a few lumps of loam. Winter temp., 55° to 60°; summer, 60° to 85°.

- M. biva'vis*. $\frac{1}{2}$. Trinidad. 1822. Annual.
 — *brevifolia*. 1. Guiana. 1825. Annual.
 — *recu'eva*. 1. Trinidad. 1820. Herbaceous.

Microlo'ma. (From *mikros*, small, and *loma*, a fringe; flowers fringed. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynancheæ*. Allied to *Asclepias*.)

Greenhouse evergreen twiner, from the Cape of Good Hope. Stiff little shoots, but young, as cuttings, in sand, under a bell-glass, in a close pit, in May; sandy loam, a little fibry peat, and dried leaf-mould. Winter temp., 40° to 50°.

- M. lineare*. 3. White. July. 1823. Syn., *Ceropegia sinuata*.
 — *sagittatum*. Green, purple. July. 1755. Syn., *Ceropegia sagittata*. Jacq. H. Schoenb. t. 38.

Microme'lum. (From *mikros*, small, and *melon*, apple. Nat. ord., *Rutaceæ*.)

Stove evergreen shrub. Sandy loam. Layers and cuttings.

M. pubescens. 4. White. June. W. Indies. 1823. Syn., *Bergera integerrima*.

Microme'ria. (From *mikros*, small, and *meris*, a part; referring to the flowers. Nat. ord., *Labiatae*; Tribe, *Satureineæ*. 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. approximata*. June. Mediterranean. 1822.
 — *australis*. N. S. Wales.
 — *græca*. †. June. Greece. 1759.
 — *densiflora*. June. South Europe. 1822.
 — *Juliana*. †. Pale red. July. Mediterranean. 1596.
 — *hirsuta*. June. Sicily. 1822.
 — *marifolia*. 1. Blue. Spain. 1800. Syn., *Calamintha marifolia*.
 — *obovata*. 2. July. Jamaica. 1783.
 — *rupestris*. 1. Purple. June. Carniola. 1798. Syns., *Melissa alba* and *Saturcra rupestris*. Jacq. Ic. t. 494.
 — *teneriflora*. 1. May. Teneriffe.
 — *varia*. July. Canaries. 1806.

Micromyrtus. (From *mikros*, small, and *Myrtus*; small Myrtles. Nat. ord., *Myrtaceæ*; Tribe, *Chamælauciceæ*.)

Small heath-like greenhouse shrub. Seeds in a hotbed in spring; cuttings of young shoots in May, in sand, in heat and under a bell-glass. Sandy loam and fibrous peat, well drained. Summer temp., 58° to 80°; winter, 40° to 55°.

M. microphylla. White. Australia. 1870.

Micropera. (From *mikros*, small, and *pera*, a pouch; the pouch-like labelum, or lip. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Sarcantheæ*. Allied to *Saccolabium*.) United with **Sarcophilus** in the Genera Plantarum.

Stove orchids. The terrestrial 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*. New Zealand.
 — *meadia*. 2. Pale green, white. King George's Sound. 1823.
 — *parviflora*. 1. Pale green, white. September. Port Jackson. 1828.

EPIPHYTAL.

M. pallida. Pale yellow. Sylhet.

Microphœnix. (From *mikros*, small, and *Phœnix*. Nat. ord., *Palmeæ*.)

Stove palm.

M. Sahu'ti. A garden hybrid. Rev. Hort. 1885, p. 513, fig. 91.

Microseris. (From *mikros*, small, and *serikos*, silken; referring to the pappus. Nat. ord., *Compositæ*.)

A hardy annual. Seeds in common soil, in March or April.

M. Lindleyi. Yellow. May. N. Amer. 1833. Syn., *Catalis Lindleyi*.

Microsorium. (From *mikros*, small, and *soria*, a heap; referring to the very small sori. Nat. ord., *Filices—Polypodiaceæ*.)

Stove fern. See FERNS.

M. irioides. 2. E. and W. Indies. 1824.
 — *irregulare*. See *Drynaria irioides*.

Microsperma. (From *mikros*, small, and *sperma*, a seed; the seeds

being very minute. Nat. ord., *Loasææ*.)

See **Mentzelia**.

M. bartonioides. B. M. t. 4491. See *Mentzelia bartonioides*.

Microstephium. (From *mikros*, small, and *stephanos*, a crown; the pappus is small. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*.) See **Cryptostemma**.

M. niveum. See *Cryptostemma niveum*.

Microstylis. (From *mikros*, small, and *stylos*, a column. Nat. ord., *Orchidææ*; Tribe, *Epidendrææ—Malaxææ*.)

Stove terrestrial orchid. See ORCHIDS.

M. bella. 2. Pale purple, green. Sunda Isles. 1866. Ill. Hort. t. 531.

— *calophylla*. Yellow. Indian Archipelago. 1879.

— *chlorophrys*. Purple. Borneo. 1881.

— *discolor*. Yellow, changing to orange. Ceylon. 1863. B. M. t. 5403.

— *hisionantha*. Brownish-green. November. Columbia. 1842. B. M. t. 4103.

— *Josephiana*. 1. Yellow, red-brown. May. Sikkim. 1877. B. M. t. 6325.

— *Lo'wi*. Borneo. Belg. Hort. 1884, p. 281, t. 14, fig. 2.

— *metalifolia*. Yellow, rose. Borneo. 1879. B. M. t. 6668.

— *ophioglossoides*. †. Green. North America. Syn., *Malaxis ophioglossoides*. B. C. t. 1146.

— *mezicana*. Green. Spring. Mexico. B. R. t. 1290.

— *trilobulata*. †-1. Brownish-purple. Andaman Islands. G. C. 1882, xviii, p. 393.

— *ventilabrum*. Yellow. Sunda Islands. 1881.

— *versicolor*. 1. Various coloured. Summer. China. 1830. Wight. Ic. t. 901.

Mignonette. *Reseda odorata*.

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 ; so 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 two 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 three, or even four, feet and more. Suppose we say only a foot high for a couple of them, as they must all go in pairs ; eighteen inches for the next couple, and two 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 largest 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., *Compositæ* ; Tribe, *Eupatoriaceæ*. 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. amara. 6. Guiana. 1813.

— *Gau'co*. 6. Pale blue. S. Amer. 1823.

— *opifera*. 6. Brazil. 1823.

— *scandens*. 6. N. Amer. 1714. Syn., *Eupatorium scandens*. Jacq. Ic. t. 169.

— *suave olens*. 6. S. Amer. 1823.

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 filaments or hyphæ 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 rarely 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 238; merely clay, water, and flowers of sulphur, however, are sufficient, and not so injurious to leaves. *Uredo rosæ*, *Puccinia rosæ*, and *Cladosporium herbarum* are the mildew fungi of the rose-tree; *Oidium erysiphoides*, of the peach-tree; *Oidium Tuckeri*, of the vine; *Glaeosporium 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*.

Milk-Vetch. *Astragalus*.

Milk-Wood. *Brosimum spurium*.

Milkwort. *Polygala*.

Milla. (Named after *J. Milla*, a gardener to the Spanish court. Nat. ord., *Liliaceæ*; Tribe, *Alliaceæ*. Allied to *Caloscordium*.)

Half-bardy little bulbs with white flowers, which succeed in a deep, front border of light soil; offsets when in a dormant state.

M. biflora. 1½. May. Mexico. 1826. B. R. t. 1555.

— *capitata*. See *Brodiaea capitata*.

— *conspicua*. Greyish-white, purplish. 1869.

Syn., *Triteleia conspicua*.

— *hyacinthina*. See *Brodiaea lactea*.

— *ixoides*. A synonym of *Brodiaea ixoides*.

— *Leichlii* n. 1. White, green. Winter.

Chilian Andes. 1874.

— *macrostemon*. 1. Pale lilac. Buenos Ayres.

1875.

— *porrifolia*. 1. Blue, white. Chili. 1868.

Syn., *Triteleia porrifolia*.

— *uniflora*. 3. February. Buenos Ayres.

1832. B. M. t. 3327.

Mille'tia. (After *Jacq. Ant. Millet*, who lived at the beginning of the eighteenth century. Nat. ord., *Leguminosæ*;

Tribe, *Galegeæ*. Allied to *Wisteria*.)

Stove climber.

M. megasperma. Purple, whitish. August.

Queensland. B. M. t. 6541.

Millingtonia. (Named after *Sir T. Millington*, once professor of botany at Oxford. Nat. Ord., *Bignoniaceæ*;

Tribe, *Bignoniææ*.)

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. hortensis. 38. White. E. Indies. 1820.

— *simplicifolia*. 20. Yellow. E. Ind. 1823.

Millipede. See *Julus*.

Miltonia. (Named after the *Earl Fitzwilliam*. Nat. ord., *Orchidæ*; Tribe, *Vandææ-Oncidiææ*. Syn., *Macrochilus*. Allied to *Brassia*.)

Stove orchids, from Brazil, except where otherwise mentioned. Divisions in spring; shallow baskets in moss, sphagnum, etc., 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. anceps. 1. Yellow, purple, white. July. Brazil. 1851.

— *bicolor*. White, red. 1839.

— *Bleui*. Garden hybrid between *M. vexillaria* and *M. Roeblii*. Syn., *M. Blewana*, *Miltoniopsis Bleui*, Orch. 1889, p. 145, and *Odontoglossum Bleui*.

— *Bluntii*. Whitish, purple-brown. Brazil. 1879.

— *Lubbersia* n. Spotted with brown; lip purple. 1887.

— *canadica*. 2. Yellow and brown. March. 1890. Paxt. Mag. vi. p. 241.

— *grandiflora*. 2. Brown, white. December. 1837.

— *cerulea*. White, purple. Brazil. 1865.

— *Clouesii*. 1. Yellow, brown. 1840. B. M. t. 4109.

— *paullida*. Yellow, brown. 1839.

— *cuneata*. 1. Yellow, purple. March. 1843.

B. R. 1845, t. 8.

— *festiva*. Ochre, purple. Brazil. 1868.

— *flava*. Yellow. July. 1848.

— *flavescens*. 2. White, yellow. June. 1837.

— *grandiflora*. Pale yellow. Gf. t. 1828.

— *stellatum*. Lip white; bracts rufescent.

Minas Geræs. Syn., *Cyrtochilum stellatum*.

— *Karwinskii*. 3. Yellow, brown. August. Mexico. 1839. Paxt. Mag. xvi. p. 162.

— *Lamarckiana*. Light yellow. August. 1874. Syn., *M. Clouesii*, var. *Lamarckiana*.

— *odora* n. 1843.

— *Petersiana*. Purplish-brown; lip purple, yellow. 1886.

— *coenocolor*. Paler and unspotted. 1886.

— *Phalaenopsis*. White, purplish-crimson, yellow. May. 1850. Syn., *Odontoglossum Phalaenopsis*.

— *huacrians*. White, crimson, yellow. 1881. Ill. Hort. t. 417.

— *solaris*. White, yellow, purple. 1879.

— *Regnèlii*. White, rose. Brazil. 1864.

— *purpurea*. Blush, violet-purple. Brazil. 1869. Rev. Hort. 1891, p. 253.

— *Russelliana*. Brown, lilac. December. Rio Janeiro. 1835. Paxt. Mag. vii. p. 217.

— *Schroederiana* n. Yellow with brown bars; lip crimson, white. Syn., *Odontoglossum Schroederianum*.

— *spectabilis*. 1. White, violet. July. 1835. B. M. t. 4204. Syn., *Macrochilus Fryanus*.

— *atro-purpurea*. Rio Janeiro.

— *bicolor*. White, violet. August. 1839.

— *colorata*. Rose. 1838.

— *lineata*. Whitish, purple. Lind. t. 62.

— *Moreliana*. Purple. Lind. t. 105. Syn., *M. Moreliana*.

— *radiana*. Purple, yellowish. 1880.

— *rosea*. Rose, crimson. 1867. Syn., *M. Warneri*.

- M. vezillaria*. Rose, white, yellow. 1872. Syn., *Odontoglossum vezillarum*. B. M. t. 6037.
 — *Leopoldii*. Rich purple. 1889. Rev. Hort. 1891, p. 73. Syn., *M. vezillaria*, var. *Sanderiana*.
 — *purpurea*. Deep purple. 1889.
 — *virginalis*. White, violet. Brazil. 1869.
 — *Warneri*. See *M. spectabilis*, var. *rosea*.
 — *Warzewiczii*. Brown, yellow, white, purple. Peru, Columbia. 1869.
 — *ætherea*. Pale yellow, mauve-lilac. 1881.

Mime'tes. (From *mimos*, a mimic; referring to its resemblance to allied genera. Nat. ord., *Proteaceæ*. 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. capitulata*. Red. June. 1822.
 — *cucullata*. 2. Purple. 1789.
 — *divaricata*. 2½. White. July. 1795.
 — *Hartwegii*. 5. July. 1824.
 — *hirta*. 3½. Red. July. 1774.
 — *palustris*. 1. Purple. July. 1802.
 — *pauciflora*. 3½. Red. July. 1818.
 — *purpurea*. 2. Purple. November. 1789.
 — *vacciniifolia*. 3. 1800.
 — *Zeyheri*. 6-8. Involute rose-red. July. S. Africa. Syn., *Orothamnus Zeyheri*. B. M. t. 4357.

Mimo'sa. (From *mimos*, a mimic; referring to the irritability of the leaves, as if imitating animal sensibility. Nat. ord., *Leguminosæ*; Tribe, *Eumimosæ*.)

Stove evergreens, except *pubiflora*, 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., 60° to 65°; 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. acanthocarpa*. 10. Red. Mexico. 1822. Syns., *Acacia acanthocarpa* and *A. brachyantha*.
 — *angulata*. White. June. Brazil. 1826.
 — *Barclayana*. 1. Madagascar. 1824.
 — *castanea*. 2. Pale yellow. July. S. Amer. 1741.
 — *Ceratonia*. 3. White. S. America. 1800. Syn., *Acacia Ceratonia*.
 — *ciliata*. White. June. Brazil. 1824.
 — *ferruginea*. 1. E. Ind. 1818.
 — *floribunda*. 1. Pink. June. Cumana. 1824. Ic. Pl. t. 373.
 — *intermedia*. Rose. April. Caraccas. 1826.
 — *kermesina*. Purple. Brazil.
 — *latispinosa*. 3. White. September. Madagascar. 1823.
 — *marginata*. Pink. Mexico.
 — *obtusifolia*. 3. Red. June. Brazil. 1816.
 — *polydactyla*. 1½. Purple. June. Guiana. 1822.
 — *pubiflora*. 2. Pale red. Bahia. 1818.
 — *pubiflora*. 1. White. June. Brazil. 1638. B. R. t. 941.
 — *rubricaulis*. 3. Pale yellow. June. E. Ind. 1799.

- M. sensitiva*. 1½. Pink. June. Brazil. 1648. B. C. t. 249.
 — *strigosa*. 1. Purple. June. S. Amer. 1818.
 — *uraguensis*. 2. Red. June. Buenos Ayres. 1840. B. R. 1842, t. 33.
 — *viscida*. 2. Red. Brazil. 1825.
 — *vi'va*. 1½. Purple. August. Jamaica. 1739.

EXCLUDED SPECIES.

- M. discolor*. Andr. Rep. t. 235. See *Acacia discolor*.
 — *elegans*. Andr. Rep. t. 563. See *Albizzia lophantha*.
 — *linifolia*. Andr. Rep. t. 394. See *Acacia linifolia*.
 — *longifolia*. Andr. Rep. t. 207. See *Acacia longifolia*.
 — *myrtifolia*. B. M. t. 302. See *Acacia myrtifolia*.
 — *pubescens*. B. M. t. 1263. See *Acacia pubescens*.
 — *purpurea*. Andr. Rep. t. 372. See *Calliandra purpurea*.
 — *stricta*. Andr. Rep. t. 53. See *Acacia stricta*.
 — *verticillata*. B. M. t. 110. See *Acacia verticillata*.

Mimulus. Monkey-Flower. (From *mimo*, an ape; in reference to the ringent or gaping mouth of the flower. Nat. ord., *Scrophulariaceæ*; Tribe, *Gratiolææ*. Syn., *Diaplacus*.)

Common soil, provided it be moist; divisions, cuttings, and seeds. A few, like *Lewi'sii*, 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. floribundus*. ¾. Yellow. August. N. Amer. 1826.
 — *parviflorus*. ¾. Yellow. Chili. 1824.

HALF-HARDY HERBACEOUS.

- M. aurantiacus*. See *M. glutinosus*.
 — *Fremontii*. ¾. Crimson. California. 1882.
 — *glutinosus*. 5. Salmon-colour. California. 1794. Syns., *M. aurantiacus*, B. M. t. 354, and *Diaplacus glutinosus*.
 — *punicus*. 4. Orange-red to scarlet. California. 1837. Syn., *Diaplacus punicus*. B. M. t. 3655.
 — *lanatus*. 1½. Yellow. June. N. Amer. 1826.
 — *mohaveensis*. Whittish, with crimson eye. California. 1886.
 — *perfoliatus*. B. M. t. 3067. See *Leucocarpus elatus*.
 — *primuloides*. ¾. Yellow. California. 1873.
 — *repens*. Lilac, yellow. Anstralia. 1864. B. M. t. 5423.
 — *Roezlii*. Yellow. California. 1882.
 — *Tiltingii*. Yellow. California. 1870.
 — *tricolor*. Pink, crimson. June. California. 1848.

HARDY HERBACEOUS.

- M. alatus*. 1. Light blue. July. N. Amer. 1783.
 — *cardinalis*. 2. Scarlet. June. California. 1836. B. M. t. 3560.
 — *cupreus*. See *M. luteus*, var. *cupreus*.
 — *glabra*. Yellow. June. Mexico. 1827.
 — *guttatus*. 1½. Yellow. July. N. Amer. 1812. Syn., *M. luteus*, var. *guttatus*.
 — *Lewi'sii*. ¾. Pale purple. August. Missouri. 1824. Syn., *M. roseus*. B. M. t. 3353.
 — *luteus*. ¾. Yellow. July. Chili. 1826.
 — *cupreus*. ¾. Orange-red. Chili. 1861.
 — *Neuberti*. Double flowered.
 — *no'bilis*. A "hose-in-hose" form.

- M. luteus rivularis*. ‡. Yellow. July. Chili. 1826.
 — — *Youngia'nus*. ‡. Yellow-spotted. July. Chili. 1838.
 — *moschat'us*. ‡. Yellow. August. Columbia. 1826. B. R. t. 1118.
 — *propinquus*. ‡. Yellow. April. N. Amer. 1827.
 — *radicans*. White, violet. New Zealand. 1833. G. C. 1833, xx. p. 21, fig. 6.
 — *ringens*. 1. Light blue. July. N. Amer. 1759.
 — *roseus*. See *M. Lewisii*.
 — *variegatus*. 1. White, rosy. June. Chili. 1851. B. C. t. 1872. Syn., *M. luteus*, var. *variegatus*.

Mimu'sops. (From *mimo*, an ape, and *ops*, a face; and fancied resemblance of the flowers. Nat. ord., *Sapotaceæ*. Allied to *Bassia*.)

Mimu'sops Elengi is an Indian fruit-tree; and the sweetish gum of the *M. Ka'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. Elengi*. 15. 1796.
 — *hexandra*. 10. 1804.
 — *Ka'ki*. 10. 1796.

Mina. (Named after *F. X. Mina*, a Mexican minister. Nat. ord., *Convulvulaceæ*.) Now referred to *Ipomæa*.

Greenhouse annual. Seeds sown in a hotbed, in spring, potted and re-potted, and hardened off for flowering in the greenhouse; sandy loam, peat, and leaf-mould.

- M. lobata*. 6. Red, yellow. June. Mexico. 1841. B. R. 1842, t. 24. A synonym of *Ipomæa versicolor*.

Mint. See *Mentha*.

Mirabilis. Marvel of Peru. (From *mirabilis*, wonderful; as everything was at first considered that came from America. Nat. ord., *Nyctagynaceæ*; Tribe, *Mirabiliceæ*.)

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. dichotoma*. 2. Yellow. July. Mexico. 1640.
 — *hybrida*. 2. White. July. 1813.
 — *jaly'pa*. 2. Red. July. W. Ind. 1596. B. M. t. 371.
 — — *a'lba*. 2. White. July. W. Ind. 1596.
 — — *fla'va*. 2. Yellow. July. W. Ind. 1596.
 — — *rubro-a'lba*. 2. Red, white. July. W. Ind. 1596.
 — — *rubro-fla'va*. 2. Red, yellow. July. W. Ind. 1596.
 — *longiflora*. 2. White. July. Mexico. 1759.
 — — *ca'rnea*. 2. Pink. August. Germany.
 — — *violacea*. 2. Pink. August. Germany.
 — *multiflora*. Purple. California. 1876.
 — *suaveolens*. 1‡. White. July. Mexico. 1824.

Mirbelia. (Named after *C. F. B. Mirbel*, a physiological botanist of Paris.)

Nat. ord., *Leguminosæ*; Tribe, *Podalyriææ*. Allied to *Chorizema*.)

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 fibry loam and charcoal. Winter temp., 40° to 48°.

- M. Baate'ri*. 2. Yellow. 1825. B. R. t. 1434.
 — *dilatata*. 3. Yellow. July. 1803. B. C. t. 1367.
 — *floribunda*. 2. Purple. March. 1838. Paxt. Mag. viii. p. 103.
 — *grandiflora*. 2. Yellow. June. 1825. B. M. t. 2771.
 — *Meisne'ri*. 2. Reddish-purple. May. B. M. t. 4419.
 — *pu'ngens*. 2. Yellow. June. 1824.
 — *reticulata*. 3. Yellow. June. 1792. B. M. t. 1221.
 — *speciosa*. 2. Purple. June. 1824. B. R. 1841, t. 58.

Mischa'nthus. (From *miskos*, a stem, and *anthos*, a flower; referring to the tall stems. Nat. ord., *Gramineæ*.)

A tall graceful grass.

M. sine'nsis. E. Asia. Syn., *Eulalia japonica*.

Mistletoe. (*Viscum album*.) 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 the 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.

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; but we question very much whether it would live upon the walnut. 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., *Rubiaceæ*; Tribe, *Anthospermeæ*.)

Hardy herbaceous creeper. Division, cuttings under a hand-light, and layering the running stems; sandy, fibry peat, either in a sheltered American border, or in a pot protected like the generality of alpine plants.

M. repens. †. White. June. N. Amer. 1731. B. C. t. 979.

Mite. See **Acarus**.

Mite'la. (The diminutive of *mitra*, a mitre; referring to the shape of the seed-pods. Nat. ord., *Saxifragaceæ*; Tribe, *Saxifrageæ*. 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. cordifolia. †. May. 1812.
— *diphylla*. †. April. 1731.
— *nuda*. †. July. 1758. Syn., *M. reniformis*.
— *pentandra*. †. Yellow. June. 1827. B. M. t. 2933. Syn., *Drummondia nitelloides*.
— *prostrata*. †. May. 1818.
— *reniformis*. See *M. nuda*.
— *trifida*. †. May. 1827.

Mitraca'rpum. (From *mitra*, a mitre, and *karpos*, a fruit. Nat. ord., *Rubiaceæ*; Tribe, *Spermacoceæ*. 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. Fischeri. 1. July. Jamaica. 1821.
— *hirtum*. †. July. Jamaica. 1818. Syn., *Spermacoce hirta*. Jacq. Ic. t. 308.
— *stylosum*. 1. August. Manilla. 1819.
— *villosum*. †. July. Jamaica. 1816.

Mitra'ria. (From *mitra*, a mitre; referring to the seed-pod. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*. 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 fibry loam.

M. coccinea. 4. Scarlet. July. San Carlo de Chiloe. 1848. B. M. t. 4462.

Mitriosti'gma. (From *mitra*, a mitre, and *stigma*; referring to the shape of the stigma. Nat. ord., *Rubiaceæ*; Tribe, *Gardenieæ*.)

Stove shrub. For culture, see **GARDENIA**.

M. axillare. 5. White; fragrant. Spring. Natal. Syn., *Gardenia citriodora*. B. M. t. 4937.

Mixture of Soils is one of the most ready and cheapest modes of improving their staple, and thus rendering them more fertile; and upon this 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 successfully 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 to 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 fertilizing, 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., *Passifloræ*; Tribe, *Modeceæ*. 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. lobata. B. R. t. 433. Yellowish-green. Sierra Leone.

— *trilobata*. 10. August. E. Indies. 1818.

— *tuberosa*. 10. August. E. Indies. 1822.

Modi'ola. (From *modiolus*, the nave of a wheel; referring to the formation of the seed-vessel. Nat. ord., *Malvaceæ*; Tribe, *Malveæ*. Allied to the Mallow.)

Seeds in spring; division of the two 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. caroliniana. Red. June. N. Amer. 1723. Hardy annual. Syn., *Sphæralcea caroliniana*.

— *decumbens*. Red. June. S. Amer. 1815. Half-hardy herbaceous. Syn., *Sphæralcea decumbens*.

— *geranioides*. Rosy-lilac. Garden, Jan. 28, 1822.

M. prostrata. Scarlet. May. Brazil. 1806. Half-hardy herbaceous. Syn., *Sphæralcea prostrata*.

Moerhingia. (Named after P. Moerhing, a German botanist. Nat. ord., *Caryophyllaceæ*.) United with **Arenaria** in the Genera Plantarum.

Hardy herbaceous perennials, from the south of Europe. Division of the plant in spring; common, sandy soil, and dry, elevated positions; suited for steep rock-works.

M. muscosa. †. Purple. June. 1775.

— *sedifolia*. †. White, red. June. 1823.

Mogi'phanes. (From *mogis*, scarcely, and *phainein*, to show; the flowers are small. Nat. ord., *Amaranthaceæ*; Tribe, *Gomphreneæ*.)

Stove plant.

M. straminea. Syn., *Gomphrena brasiliensis*. Jacq. Ic. t. 346.

Moh'ria. (Named after M. Mohr, a German botanist. Nat. ord., *Filices*.)

Greenhouse fern. See FERNS.

M. thurifraga. Brown, yellow. June. Cape of Good Hope. 1842.

Moist Stove. A stove with a moist atmosphere. See **Stove**.

Moldavian Palm. *Dracoc'phalum moldavicum*.

Moldenhau'era. (Named after I. J. Moldenhauer, a German botanist. Nat. ord., *Leguminosæ*; Tribe, *Eucæsalpineæ*. 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. floribunda. 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 in 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.*

Molinia. (After *J. Molini*, a writer on Chilian plants. Nat. ord., *Gramineæ*.)

Hardy, perennial grass.

- M. Bertini.* A seedling variegated variety of *M. cœrulea*. 1890.
— *cœrulea*. 1-3. Purple or green. July. Britain. Eng. Bot. ed. 3, t. 1747.
— — *variegata*. Variegated variety.

Molopospermum. (From *molops*, a stripe, and *sperma*, a seed; the fruit is striped. Nat. ord., *Umbelliferae*.)

Hardy fern-like perennial. Divisions, seeds. *M. cicutarium*. 3-5. Yellowish. May. Mountains of S. and Central Europe. 1596.

Moltkia. (Named after *Count Moltke*, a Danish noble. Nat. ord., *Boraginæ*; Tribe, *Boragææ*. Allied to *Echium*.)

Hardy herbaceous perennial. Division of the plant in spring; rich, sandy loam.

- M. cœrulea*. 1. Blue. April. Persia. 1829.
— *petraea*. †. Blue. June. S. Europe. 1843. Syns., *Echium petraeum* and *Lithospermum petraeum*. B. M. t. 5942.

Molucella. *Molucca Balm.* (From *Molucca*, where the plants were supposed to be natives. Nat. ord., *Labiatae*; Tribe, *Stachydeæ*. Allied to *Phlomis*.)

Hardy plants, with purple flowers, flowering in July. *Tuberosa*, by dividing the tubers in spring and autumn. This, and also the others, which are annuals, by seed in a hotbed, in spring; potted, barded off, and transferred to the flower-border in the middle of May; sandy loam. *M. laevis*. 1‡. Syria. 1570. B. M. t. 1852.
— *Marrubium strum*. 1. Syria. 1820.
— *tuberosa*. 2. Tartary. 1796.

Moly. *Allium moly*.

Momo'dica. (From *mordeo*, to bite; alluding to the jagged seeds. Nat. ord., *Cucurbitaceæ*; Tribe, *Cucumérineæ*.)

Stove climbers, raised annually from seed, like the MELON, which see for raising young plants.

- M. balsamea*. Yellow. July. E. Indies. 1568. Balsam apple.
— *Charantia*. Yellow. July. E. Indies. 1710.
— *Elaterium*. See *Ecbalium Elaterium*.
— *involuta*. Cream-coloured. Natal. 1862.
— *martiniensis*. Yellow. 1888.
— *mitata*. Yellow. July. E. Indies. 1820.

Mona'nthes. (From *monos*, one, and *anthos*, a flower; the flowers are often solitary. Nat. ord., *Crassulaceæ*. Allied to *Sempervivum*.)

Greenhouse succulent perennial herbs; exceedingly dwarf and pretty. For cultivation, see CRASSULA.

- M. atlanica*. One-tenth. Yellow. Morocco. 1871.
— *murdis*. One-tenth. Yellowish. Canaries.

Mona'rda. (Named after *M. Monardez*, a physician of Seville. Nat. ord., *Labiatae*; Tribe, *Monardeæ*. Allied to *Salvia*.)

Hardy herbaceous perennials, all but *clinopodioides* natives of North America. Division of the plant in spring; common soil.

- M. amplexicaulis*. See *M. Bradburiana*.
— *aristata*. See *M. clinopodioides*.
— *Bradburiana*. Palered. June. 1850. Syns. *M. amplexicaulis* and *M. fistulosa*, var. *flora-maculata*. B. M. t. 3310.
— *clinopodiata*. 2. Purple, white. July. 1771.
— *clinopodioides*. 2. Yellow. August. S. Amer. 1825. Syn., *M. aristata*. B. M. t. 3526.
— *didyma*. 3. Scarlet. July. 1752. B. M. t. 546. Syns., *M. fistulosa* of B. M. t. 145; and *M. Kalmiana*.
— *fistulosa*. 3. Purple. July. 1666. B. M. t. 3310. Syns., *M. affinis*, *M. allophylla*, *M. altissima*, *M. longifolia*, and *M. oblongata*.
— — *flora-maculata*. See *M. didyma*.
— — *media*. Deep purple. Syns., *M. media* and *M. purpurea*. B. C. t. 1396.
— — *illis*. 2. Lilac. July. 1656. Syns., *M. Lindheimert*, *M. menthaefolia*, B. M. t. 2958, *M. mollis* and *M. scabra*.
— — *rubra*. Crimson or rose-red.
— *graecilis*. 1‡. Purple. July. 1820.
— *punctata*. 2. Yellow, brown. August. 1714. Andr. Rep. t. 546. Syn., *M. lutea*.
— *Russelliana*. 2. White. September. 1823. B. M. t. 2513.

Monarde'lla. (A diminutive of *Monarda*. Nat. ord., *Labiatae*; Tribe, *Satureineæ*. Allied to *Origanum*.)

Hardy herbaceous perennial. Division of the plant in spring; common, sandy soil, with a little peat or leaf-mould.

- M. caudicans*. 1. White. California. 1853.
— *macrantha*. Scarlet. Autumn. California. 1877. B. M. t. 6270.
— *undulata*. †. Violet. June. California. 1843.

Mone'ses. (From *monos*, single, and *esis*, delight; the flowers are solitary. Nat. ord., *Ericaceæ*.)

Hardy perennial herb.

- M. uniflora*. White or pink. June. Britain to Japan. Syn., *Pyrola uniflora*. Eng. Bot. ed. 3, t. 900.

Monetia. (Named after *Monet de la Marek*, a French botanist. Nat. ord., *Ilicineæ*. Allied to *Prinos*.)

Stove evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass, and in a mild bottom-heat; sandy loam, and a little fibry peat. Winter temp., 48° to 55°; summer, 60° to 80°.

M. barlerioi des. 3. Green. July. E. Ind. 1758.

Moneywort. *Lysimachia nummularia*.

Monizia. (In honour of *J. M. Moniz*, a botanist in Madeira. Nat. ord., *Umbelliferae*.)

Greenhouse evergreen shrub.

M. edu'lis. 4. May. Madeira. 1857. The roots are eaten in Madeira.

Monkey-Bread. *Adansonia*.

Monkey-Flower. *Mimulus*.

Monkey-Nut. *A'rachis hypogæa*.

Monk's Hood. *Aconitum*.

Monnina. (Named after *Monnino*, Count de Flora Blanca, a Spanish patron of botany. Nat. ord., *Polygalaceæ*. 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 fibry loam. Winter temp., 40° to 45°.

M. rotarioides. 2. Purple. August. 1840.

— *obtusifolia*. 12. Violet and white. June. Peru. 1830. B. M. t. 3122.

— *zalapeensis*. Blue, yellow. Mexico. 1879.

Mono'cera grandiflora, B. M. t. 4680, and *M. lanceolata* are synonyms of **Elæocarpus grandiflorus**.

Monochæ'tum. (From *monos*, one, and *chaite*, a bristle. Nat. ord., *Melastomaceæ*; Tribe, *Rhexiææ*.)

Stove evergreen shrubs. Cuttings in sandy peat. Sandy peat and loam. Summer temp., 60° to 80°; winter, 45° to 60°.

M. alpe'stre. Bright red. Mexico.

— *dicranantherum*. See *M. Hartwegianum*.

— *ensiferum*. Purple. Mexico.

— *Hartwegianum*. Rose. Winter. Peru. 1865.

Syn., *M. dicranantherum*. B. M. t. 5506.

— *Humboldtianum*. Purplish rose. November. Caracas. 1863. B. M. t. 5367.

— *Lemoinia*'num. Deep violet-rose. Winter.

— *nitidum*. Pink. New Grenada.

— *sericeum*. Pink. New Grenada. 1859. There is a variety called *multiflorum*.

— *tene'vum*. 1½. Purple. Guatemala.

Monochi'lus. (From *monos*, one, and *cheilos*, a lip; the formation of the flower. Nat. ord., *Verbenaceæ*; Tribe, *Verbeneæ*. Allied to *Verbena*.)

Stove tuber. Division of the tubers when in a dormant state; sandy loam, a little fibry peat, and leaf-mould. Temp. when growing, 55° to 75°.

M. glazini'folius. White. Brazil. 1838.

Monocho'ria. (From *monos*, one, and *chorizo*, to separate; one stamen, does not resemble the rest. Nat. ord., *Pontederiaceæ*.)

Stove aquatic herbs. For culture, see **PONTEDERIA**.

M. cya'nea. Blue. 1833.

— *hastata*. 2. Blue. July. E. Indies. 1806. Syn., *Pontederia dilatata*. Andr. Rep. t. 490.

— *vagina*'tis. 2. Blue. Summer. E. Asia.

— *Korsakovii*. 1. Violet. Summer. 1862.

Monocotyledons, or **Endogens**, form one of the great classes into which flowering plants are divided. Their characteristics are:—vascular bundles isolated, the stem increasing in thickness by new bundles being developed between the older ones, and thus the wood does not form concentric rings; veins of the leaves more or less parallel; parts of the flower in threes, or some multiple of that number; embryo with one seed leaf. This class furnishes a very large proportion of the handsome plants now in cultivation, e.g., those belonging to the orders *Orchidææ* (*Orchids*), *Irideææ* (*Iris*, *Crocus*), *Amaryllidæææ* (*Narcissus*, *Crinum*), *Liliaceæææ* (*Lilies*, *Tulips*, *Hyacinths*), *Gramineæææ* (*Grasses*), etc.

Monogra'mma. (From *monos*, one, and *gramma*, writing; referring to the spore, or seed-cases. Nat. ord., *Filices*.)

Stove ferns, from the West Indies, with brownish-yellow spores. See **FERNS**.

M. furcata. June. 1825.

— *graminea*. June. 1830.

— *trichodea*. June.

Monole'na. (From *monos*, one, and *olene*, the arm; alluding to the arm or process from the base of the anther. Nat. ord., *Melastomaceæ*; Tribe, *Sone'riteææ*.)

Stove perennials. Sandy loam and peat, or leaf-mould. Moist atmosphere. Summer temp., 75° to 85°; winter, 60° to 65°.

M. primulaeflora. ½. Bright pink. November. Columbia. 1869. Syn., *Bertonia primulaeflora*.

Monolo'phus. (From *monos*, one, and *lophos*, a crest. Nat. ord., *Scitamineæææ*; Tribe, *Zingiberæææ*.) A synonym of **Kæmpferia**.

M. secun'da. See *Kæmpferia secunda*. B. M. t. 6999.

Monolo'pia. (From *monolopus*, one covering; referring to the flower-covering. Nat. ord., *Compositæææ*; Tribe, *Hel'enioidæææ*. Allied to *Lasthenia*.)

A pretty, hardy annual, once called *Hel'nium Douglasii*. Seeds in mellow soil, in April.

M. ma'jor. 3. Yellow. July. California. 1834. B. M. t. 3839.

Monomeria. (From *monos*, one, and *meris*, a part. Nat. ord., *Orchideæ*; Tribe, *Epidendreae-Dendrobiceæ*. Allied to *Bulbophyllum*.)

Stove orchids. Division in spring or autumn; fibry peat, broken pots, and sphagnum. Winter temp., 55° to 60°; summer, 60° to 90°.

M. barbatata. Spotted. India. 1841.

— *nivida*. Mexico. 1841.

Monopanax. (A name compounded of *monos*, one, and *Panax*; from the ovary being one-celled, and the plant resembling a *Panax*. Nat. ord., *Araliaceæ*.)

Stove evergreen tree. For cultivation, see ARALIA.

M. Gheisbreghtii. Greenish-white. Mexico. 1869. Syn., *Aratia Gheisbreghtii*.

Monopsis. (From *monos*, one, and *opsis*, a face; the flowers being more regular than is usual in the Nat. ord., *Campanulaceæ*; Tribe, *Lobeliaceæ*.) Regarded as a section of *Lobelia* in the *Genera Plantarum*.

A pretty little annual. Seeds in a hotbed, in March; plants pricked off, hardened off, and transferred to the open border at the end of May.

M. conspicua. $\frac{1}{2}$. Blue. July. Cape of Good Hope. 1812. Syn., *Lobelia speculum*.

Monopyle. (From *monos*, one, and *pyle*, a door; because the capsule opens by one dorsal slit. Nat. ord., *Gesneraceæ*; Tribe, *Gesneraceæ*. Allied to *Gloxinia*.)

M. racemosa. White. July. Columbia. 1875.

Monotoca. (From *monos*, one, and *tokos*, a birth; the fruit, which is eatable, having only one seed. Nat. ord., *Epacridaceæ*; Tribe, *Stypheliaceæ*. 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 fibry loam. Winter temp., 40° to 48°.

M. alba. 6. June. 1824.

— *elliptica*. 8. June. 1802.

— *lineata*. 6. June. 1804.

— *scoparia*. 5. June. 1825.

Monsonia. (Named after *Lady A. Monson*. Nat. ord., *Geraniaceæ*; Tribe, *Geraniaceæ*. Allied to *Geranium*.)

Greenhouse herbaceous perennials, except *ovata*, 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. biflora. 1. Lilac-blue. S. Africa. 1869.

— *Heritieri*. 1. Purple. May. 1790. Syn., *Sarcocaulon Heritieri*.

— *lobata*. 1. Purple. May. 1774. B. M. t. 385.

— *ovata*. 1. White. August. 1774.

M. Patersonii. $\frac{1}{2}$. Purple. May. 1827. Syn., *Sarcocaulon Patersonii*.

— *pilosula*. 1. White. July. 1778. B. M. t. 35.

— *CoUea*. 1. Pale red. July. 1820.

— *speciosa*. 1. Red. May. 1774. B. M. t. 73.

— *paUida*. 1. Pale red. May.

Monstera. (Derivation unexplained. Nat. ord., *Aroidæ*; Tribe, *Calleeæ*. Allied to *Raphidophora*.)

Stove evergreen climbers. For cultivation, see PHILODENDRON.

M. Adamsonia. Yellow. May. W. Indies.

1752. B. M. t. 5086.

— *cannaeifolia*. See *Spathiphyllum*.

— *deltoidea*. Mexico. Syn., *Tornelia fragrans*.

— *lingulata*. W. Indies. 1793.

— *peruviana*. Yellow. S. America. 1752. Syn.,

Calla pertusa and *Dracontium pertusum*.

Montagnea. See **Montanoa**.

Montanoa. (After *Montano*, a Mexican politician. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. Syn., *Eriocarpha*, *Eriocoma*, and *Montagnea*.)

Cool greenhouse shrubs. By seeds, in spring, in a gentle bottom-heat; by cuttings in autumn.

M. bipinnatifida. 6-8. Yellow. Mexico. Syn.,

M. heracleifolia, *Polymnia grandis*, and *P. heracleifolia*.

— *heracleifolia*. See *M. bipinnatifida*.

— *mollissima*. Yellow, white. Autumn.

Mexico.

— *tomentosa*. 3. White. September. Mexico.

1828. Syn., *Eriocoma fragrans*, Swt. Fl. Gard. ser. 2, t. 44.

Montbretia. (In honour of *M. Montbret*. Nat. ord., *Iridæ*; Tribe, *Ixieæ*.) Sometimes united with **Tritonia**.

Little *Ixia*-looking bulbs, with yellow flowers, from the Cape of Good Hope. Offsets; sandy loam, with a little peat or leaf-mould; if not protected on a warm border, should be kept during winter in a cold pit.

M. crocosmæiflora. Hybrid between *M. Pottsii* and *Crocosma aurea*.

— *flexuosa*. May. 1803.

— *Pottsii*. 3-4. Orange-scarlet. 1877. Hardy.

— *virgata*. May. 1825.

Montezuma. (Named after a king of Mexico. Nat. ord., *Malvaceæ*; Tribe, *Bombacææ*. 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. speciosissima. 30. Red. Mexico. 1827.

Montrichardia. (In honour of *Gabriel Montrichard* of Trinidad. Nat. ord., *Aroidæ*; Tribe, *Philodendreae*.)

Stove aquatic or marsh plants, with trunk-like stems and large sagittate leaves, very remarkable. Seeds; division of rootstock. Rich loam under water. Moist atmosphere. Summer temp., 80° to 90°; winter, 60° to 65°.

M. linnæana. 6-12. Green, cream colour. Bahia. 1860.

Moon-Creeper. *Ipomæa bonoi*

noxa.

Moon-Seed. *Menispermum*.

Moon-Trefoil. *Medicago arborescens*.

Moonwort. *Botrychium*.

Moo'rea. (After *F. W. Moore*, Curator of the Glasnevin Botanic Garden. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Stanhopeææ*.)

Stove orchid. For culture, see HOULETIA.

M. irrorata. 1½. Reddish-brown, G. C. 1890, viii. p. 7. B. M. t. 7262.

Moræ'a. (Named after *R. Moore*, an English botanist. Nat. ord., *Iridææ*; Tribe, *Moræææ*. Allied to *Iris*.)

These pretty bulbs, all from South Africa, except where otherwise mentioned, require the same treatment as *IXIA*, which see.

M. angustata. ¾. Lilac. May. 1790. B. M. t. 1276.

— *barbifera*. ¼. Purple. May. 1587.

— *bicolor*. 2. Yellow, dark. June. Syn., *Iris bicolor*, B. R. t. 1404.

— *bituminosa*. 1. Yellow. May. 1787. B. M. t. 1045.

— *bulbifera*. 2-3. Yellow. May. S. Africa. 1792. B. M. t. 5785.

— *catenulata*. 1. White, blue. May. Mauritius. 1826. B. R. t. 1074.

— *ciliata*. ¼. Yellow. September. 1587. B. M. t. 1012.

— *tricolor*. Syn., *H. tricolor*, Andr. Rep. t. 83.

— *crispata*. ¾. Blue. May. 1803. B. M. t. 759.

— *edulis*. 4. Fulvous. May. 1792. B. M. t. 613. Syn., *M. vegeta*, Jacq. Ic. t. 224.

— *glaucoopsis*. 1. Red, brown. June. 1776. Syn., *Viesseuxia glaucoopsis*.

— *exaltans*. 1½. Vermilion. May. 1825.

— *ezaltata*. 3. Vermilion. May. 1768.

— *flaccida*. 1½. Vermilion. May. 1810.

— *flexuosa*. 1. Yellow. May. 1803.

— *iridoides*. ¾. White, brown. July. 1758.

— *lineata*. 1. Vermilion. May. 1825.

— *longiflora*. ¾. Yellow. May. 1811. B. M. t. 712.

— *longifolia*. 3. Yellow. May. 1808.

— *lurida*. 1. Crimean. June. 1817. B. M. t. 312. Syn., *Viesseuxia lurida*.

— *minuta*. ¼. Blue. June. 1825.

— *odorata*. 2. Lilac. May. 1799. Salisb. Parad. t. 10.

— *papilionacea*. ½. Variegated. May. 1795. B. M. t. 750.

— *plumaria*. 1. Yellow. May. 1825.

— *polytachya*. 1. Yellow. June. 1825.

— *porrifolia*. 2. Vermilion. May. 1825.

— *ramosa*. 3. Yellow. May. 1789. B. M. t. 771.

— *setacea*. ¾. Yellow. June. 1825.

— *Sisyriochium*. ¼. Blue. May. S. Europe. 1597. Hardy. B. M. t. 1407. Syn., *Xiphion Sisyriochium*, B. M. t. 6096.

— *Tenoriana*. 1. Purple. May. Naples. 1824. Hardy. Swt. Fl. Gard. t. 110.

— *tenuis*. 1. Purple, yellow. May. 1807. B. M. t. 1047. Syn., *Viesseuxia tenuis*.

— *tricuspis*. 1. Greenish-white. May. 1776. Syn., *Viesseuxia tricuspis*, B. M. t. 696.

— *Bellendiana*. 1. Yellow. June. 1803. Syn., *Viesseuxia Bellendiana*.

— *tripetalata*. 1. Violet. June. 1802. B. M. t. 702. Syn., *Viesseuxia tripetalata*.

— *tristis*. 1. Blue. June. 1768. Syn., *Iris tristis*, B. M. t. 577.

— *unguiculata*. 1. White. May. 1802. Syn., *M. unguiculata* and *Viesseuxia spiralis*.

M. villosa. 1. Purple. July. 1789. Syn.

Viesseuxia villosa.

— *virgata*. 1. Purple. May. 1825. Jacq. Ic. t. 228.

— *viscaria*. 1. Lilac. May. 1800. Syn., *Iris viscaria*, B. M. t. 587.

EXCLUDED SPECIES.

M. aurantiaca. See *Homeria aurantiaca*.

— *collina* of B. M. t. 1033. See *Homeria collina*; of B. M. t. 1103. See *Homeria collina*, var. *ochroleuca*.

— *minuta*. See *Homeria aurantiaca*.

— *Ferraria*. Jacq. H. Schoenh. t. 456. See *Ferraria Ferrariola*.

— *minuta*. Andr. Rep. t. 404. See *Homeria collina*, var. *minuta*.

— *Northiana*. Andr. Rep. t. 255. See *Marica Northiana*.

— *palmyralia*. Jacq. Ic. t. 227. A synonym of *Eleutherine plicata*.

— *pavonia*. B. M. t. 1247. See *Tigridia pavonia*.

— *Robinsoniana*. See *Iris Robinsoniana*.

— *serotens*. Jacq. Ic. t. 225.

— *spathulata* and *Dietes Huttoni* (B. M. t. 6174). See *Iris Huttoni*.

— *spicata*. See *Homeria elegans*.

— *spiralis*. B. M. t. 520. See *Aristea spiralis*.

More'nia. (In honour of *M. Moreno*. Nat. ord., *Palmeææ*; Tribe, *Areceææ*.) See *Chamædorea*.

M. fragrans. See *Chamædorea fragrans*.

Moreton-Bay Chestnut. *Castanospermum*.

Morica'ndia. (Named after *S. Moricand*, an Italian botanist. Nat. ord., *Cruciferaææ*; Tribe, *Brassicææ*.)

Simple-looking hardy plants, but useful for cut flowers in winter. Seed sown in the open border, in April.

M. arvensis. 1½. Violet. July. Europe. 1739. Biennial. B. M. t. 3007.

— *hesperidiflora*. 1. Purple. June. Egypt. 1837. Annual.

— *Ramburii*. 2. Purple. Spain. B. M. t. 4947.

— *sonchifolia*. 1-2. Blue. March. China. 1876. B. M. t. 6243.

Mori'na. (Named after *L. Morin*, a French botanist. Nat. ord., *Dipsacææ*.)

Strong, half-hardy, herbaceous plants, suited for borders in summer. In a slight hot-bed, 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. betonicoides. 1-1½. Bright rose-purple, crimson. Sikkim. B. M. t. 6966.

— *Coulteriana*. 3. Yellowish. W. Himalayas. 1883. B. M. t. 6734.

— *longifolia*. 3. Purple. July. E. Ind. 1839. B. M. t. 4092.

— *persica*. 3. Red, white. July. Persia. 1740.

Mori'nda. (From a corruption of *Morus indicus*, Indian Mulberry; in reference to its fruit. Nat. ord., *Rubiaceææ*; Tribe, *Morindeææ*. 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. angustifolia*. 6. May. E. Ind. 1816.
 — *bractea'ta*. 6. May. E. Ind. 1816.
 — *citri'folia*. 8. E. Ind. 1793.
 — *jasmino'i des.* Pale buff. April. Port Jackson. 1823. B. M. t. 3351.
 — *Roy'e c.* 10. August. W. Ind. 1793. Jacq. H. Vind. t. 16.
tincto'ria. June. Otaheite. 1826.
 — *umbella'ta*. June. E. Ind. 1822.

Moringa, Horse-radish tree. (From *moringo*, the Indian name. Nat. ord., *Moringaceæ*.)

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*. 15. May. 1838
 — *poly'gona*. 15. April. 1822.
 — *pterygoe'p'rma*. 20. 1759. Syn., *Hyperanthera Horinga*.

Mori'sia. (Named after Professor Moris. Nat. ord., *Cruciferae*; Tribe, *Cakalinea*.)

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. hypoga'ea*. †. Yellow. July. Sardinia. 1833. Swt. Fl. Gard. ser. 2, t. 290.

Moriso'nia. (Named after Professor Morison, of Oxford. Nat. ord., *Capparidæ*; Tribe, *Capparea*. 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*. 15. White. W. Ind. 1824.

Mormo'des. (From *mormo*, a goblin; referring to the strange appearance of the flowers. Nat. ord., *Orchidæ*; Tribe, *Vandæe-Stanhopeæ*. 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'ticum*. †. Pink. July. Mexico. 1838.
 — — *oleo-auranti'acum*. Orange, blackish-purple. Columbia. 1880.
 — *a'tro-purpu'reum*. †. Purple, red. October. Panama. 1834. B. R. t. 1861. *M. atro-purpurea* of B. M. t. 4577 is *M. Hookeri*.
 — *barba'tum*. Purple. January. Central America. 1851.
 — *buccina'tor*. Yellowish-green. April. La Guayra. 1835. Syn., *M. lentiginosa*, B. M. t. 4455.
 — — *ma'jor*. Ochre, brown. Columbia. 1880.
 — — *theiacho'rum*. Green, sulphur. New Grenada. 1881.
 — *Carto'ni*. 1. Straw. July. Santa Martha. B. M. t. 4214.
 — — *auranti'acum*. Orange-yellow. New Grenada. 1881.
 — — *stena'nthum*. Ochre with brown stripes. New Grenada. 1881.

- M. citri'num*. Yellow. Mexico. 1837.
 — *col'o'seus*. Pink, yellow. Central America. 1870. Flowers 5 to 6 inches across. B. M. t. 5840.
 — *convolu'tum*. Yellow. January. Santa Martha.
 — *Daya'num*. Ochre with red lines; lip white. 1885.
 — *sta'vidum*. Yellow. Central America. 1852.
 — *fractife'sum*. Greenish, white, purplish. Costa Rica. 1872.
 — *Gree'nii*. See *H. uncia*.
 — *Hookeri*. Dark purple. January. Panama. 1851. Syn., *M. atro-purpurea* of B. M. t. 4577.
 — *igneum*. 2. Red, purple. January. Central America. 1852.
 — *Lawrence'a'num*. Yellow; lip with brown dots. Columbia. Lind. t. 273.
 — *lentigin'o'sum*. B. M. t. 4455. See *M. buccinator*.
 — *linea'tum*. 1. Yellow, crimson. March. Guatemala. 1836. B. R. 1842, t. 43.
 — *huxa'tum*. 1. Straw. August. Mexico. 1842. B. R. 1843, t. 33.
 — — *ebu'neum*. White. 1882.
 — — *purpura'tum*. Dark purple. 1886.
 — *oca'nae*. 1. Dull yellow, red-brown. Columbia. 1879. B. M. t. 6496.
 — — *brachylo'bium*. Side lobes of lip short. G. C. 1881, xv. p. 104.
 — *pardi'num*. Yellow, red. July. Oaxaca. 1837. B. M. t. 3900.
 — — *armenti'aca*. Apricot coloured, red.
 — — *a'sperum*. Sulphur with brown spots.
 — — *melanops*. Brownish-purple. G. C. 1886, xxvi. p. 680.
 — — *uni'color*. Yellow. September. Mexico. 1843. B. M. t. 3879.
 — *platy'chi'la*. Pale buff; lip with dull purple stripes. G. C. 1887, i. p. 178.
 — *puncta'tum*. Yellowish-brown, with chestnut spots. G. C. 1891, x. p. 696.
 — *Rolfea'num*. Green, brown; lip brownish-crimson above, yellowish-green beneath. Peru. 1891. Lind. t. 289.
 — *ro'seo-a'bium*. White, rose.
 — *Russellia'num*. Green. August. Guatemala. 1838.
 — *Skinne'ri*. Tawny, crimson, yellow, red. Central America. 1869.
 — *specio'sum*. Yellow, crimson. Ocaña. 1853.
 — *ti'bicen*. Yellow, purple, white. Columbia. 1870.
 — *uncia*. 1. Yellow, violet-red, purple. Mexico. 1869. Syn., *M. Greenii*. B. M. t. 5802.
 — *varia'bile*.
 — — *atropurpu'reum*. Purple. W. S. America. 1868.
 — — *auranti'acum*. Orange. W. S. America. 1868.
 — *vern'i'acum*. Blackish-purple. Roraima, British Guiana. G. C. 1887, ii. p. 682.
 — *Willia'msi*. Creamy-white. Mexico.

Mo'rna. (Named after *Morna*, one of Ossian's heroines. Nat. ord., *Compositæ*. Allied to *Podolopsis*.) United in the Genera *Plantarum* with **Waitzia**.

Greenhouse plants, with yellow flowers, from Swan River. *Nitida*, an evergreen, may be propagated by cuttings under a bell-glass; and both are easily raised from seed, sown either in September or March; but in both cases the plants must be kept in light soil, and well drained, or they will damp off. The autumn-sown ones will bloom in the greenhouse early in spring and summer; the spring-sown ones late in summer, and the beginning of autumn. If it is desirable to try them out of doors, they should

not be planted out beyond the north of London until the middle of June.

M. nitida. 2. February. 1835. B. R. t. 1941.

— *nitida*. 1½. July. 1836. B. R. 1838, t. 9.

Morning Glory. *Ipomœa*.

Morono'bea. Hog Gum Tree. (From *moronobo*, the native name. Nat. ord., *Guttiferae*; Tribe, *Morono-beæ*.)

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. coccinea. 40. Scarlet. Guiana. 1825.

Morphi'xia. A synonym of *Ixia*.

Mo'rus. Mulberry. (From *mor*, the Celtic for black; referring to the colour of the fruit. Nat. ord., *Urticaceæ*; Tribe, *Moreæ*.)

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, *nitida* is the hardest, grown chiefly for its fruit. *Alba* is more tender, grown chiefly for its leaves for feeding the silkworm. See MULBERRY.

STOVE EVERGREEN TREES.

M. indica. 20. E. Ind. 1820. Wight Ic. t. 674.

— *mauritiana*. 20. Mauritius. 1823. Jacq. Ic. t. 617.

HARDY DECIDUOUS TREES, ETC.

M. alba. 30. June. China. 1596.

— *columbifolia*.

— *italica*. 20. June. Italy. 1817.

— *macrophylla*. 30. June. China.

— *membranacea*.

— *Morettiana*. June.

— *multicaulis*. June. China.

— *nervosa*. June. China.

— *puberula*. 10. June. China.

— *Romana*.

— *rosea*. 20. June. China.

— *sinesis*. 20.

— *calcar-galli*. N. S. Wales. 1830. Evergreen.

— *constantinopolitana*. 15. June. Turkey.

1818.

— *nitida*. 20. June. Italy. 1548.

— *laciniata*. 30. June.

— *papyrifera*. See *Broussonetia papyrifera*.

— *rubra*. 10. June. N. Amer. 1829.

— *scabra*. 20. June. N. Amer. 1817.

— *tatarica*. 20. June. Tartary. 1784.

Moscha'ria. (From *moschos*, musk; a musk-smelling plant. Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*.)

Hardy annual. Seeds in a slight hotbed, in April; seedlings barden off, and transplant in open borders, in May.

M. pinnatifida. ½. July. Chili. 1823. B. R. t. 1564. Syn., *Gastrocarpha runcinata*, Swt. Fl. Gard. t. 229.

Moscho'sma. (From *moschos*, musk, and *osme*, smell. Nat. ord., *Labiatae*; Tribe, *Ocimoideæ*. Allied to *Ocimum*.)

Tender annual. 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; light, rich, sandy soil.

M. ocyroides. 1½. White. August. 1823.

Mosses are flowerless plants, ranking next below the Filicineæ. The central part of their stems consists of elongated cells, but they possess no true vascular bundles. Each plant consists of a simple or branched stem, bearing leaves, and reproductive organs. Of the latter, the males are termed *antheridia*, the females *archegonia*, and are generally seated in bud-like structures at the apex or on the side of the stem. After fertilization the fruit is produced, which consists of a capsule or *theca*, on a longer or shorter stalk (*seta*), containing numerous minute seeds or *spores*. When the spores are ripe the capsule opens by the falling off of a regular lid (*operculum*), which has been previously held on by an elastic band, the *annulus*. Inside the mouth of the capsule are a number of teeth (collectively known as the *peristome*) arranged in one or two rows; the number of these teeth is constant in each species, and is some multiple of four; they are hygroscopic, expanding when dry, and closing over the mouth of the capsule when moist, and thus allowing the spores to escape in such weather as is favourable for their dispersion. On the germination of the spores a green filamentous *protonema* is formed, from which a plant similar to the parent is produced. Some mosses are also reproduced by buds. Besides the true mosses, or *Bryaceæ*, there are the Alpine mosses or *Andreaeaceæ*, whose capsule bursts by longitudinal slits, and the Bog or Peat Mosses, or *Sphagnaceæ*, whose leaves and stems are furnished with cells with open pores, which are capable of retaining moisture for a considerable time, and thus are useful for wrapping round the roots of orchids and other plants, which require constant moisture. The Earth Mosses, or *Phascaceæ*, whose capsule is indehiscent, are now regarded as imperfectly developed members of various orders of the true mosses.

Moss is useful to the gardener for packing round the roots of plants, as mentioned above, and even some bulbous roots and orchids are cultivated in it. The chief kind used for this purpose is *Sphagnum*. A very pretty effect is produced on plants intended for exhibition by packing fresh *Decranum* (a very common moss) erect between the stem of the plant and the edge of the pot, as is done by some continental horticulturalists,

the plant appearing to rise from a miniature lawn.

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.

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, Bellis pere'nnis, var. proli'fera, 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. They generally fly at night, and are distinguished from butterflies by having pointed or plumose, not club-shaped antennæ or feelers.

Mottled Umbre-Moth. *Geome'tra.*

Mouldiness is the common term applied to that crop of fungi which ap-

pears on moist, putrescent vegetable matters. These fungi belong to various genera, and are generally destroyed when common salt or sulphur can be applied.

Mountain Ash. *Py'rus aucupa'ria.*

Mountain Ebony. *Bauhi'nia.*

Mountain Tobacco. *A'rnicamonta'na.*

Mouse-ear. *Hiera'cium stolonif'erum.*

Mouse-Thorn. *Centau'rea myca'ca'ntha.*

Moussou'nia. This genus has been formed of some species of *Gesnera*, but which we have not separated from that genus.

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 has been invented, which cuts, collects, and rolls the grass at the same time, and is better than the scythe for mossy lawns. It has now almost superseded the scythe for level 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., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Erythrina*. Syn., *Macranthus*.)

The hairs on the seed-pods of *M. pruriens* form 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. 50. Martinique. 1779.

— *a'tro-purpu'rea.* 10. E. Ind. 1820.

— *cochinchine'nsis.* White. June. Cochin China. 1826. Syn., *Macranthus cochinchinensis*.

— *imbrica'ta.* Deep purple. India. 1879. Syn., *H. prurita* of B. M. t. 4945.

— *pruriens.* 12. E. Ind. 1680.

— *pruri'ta* of B. M. t. 4945. See *M. imbricata*.

— *sempervi'rens.* China. 1816, reintroduced 1889.

Mudar Plant. *Calotro'pis giga'ntea.*

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, when-

ever 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 mnds 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. (Named after Dr. G. Muehlenbeck. Nat. ord., *Polygonaceae*; Tribe, *Coccolobae*.)

Greenhouse half-shrubby perennials, mostly climbers. *M. compl'ea* is hardy. For cultivation, see COCCOLOBA.

M. adpre'ssa] Pink. Australia. 1822. Syns., *M. depressa* and *Polygonum adpressum*. B. M. t. 3145.

— *compl'ea*. Green, August. New Zealand. 1870.

— *injuc'nda*. 2. Greenish. May. Chili. 1828. Syn., *Polygonum injucundum*. B. R. t. 1250.

— *platycl'ada*. White. Solomon Islands. 1863. Syns., *Coccoloba* and *Polygonum platyclada*.

Mue'llera. (Named after O. F. Muller, a Danish botanist. Nat. ord., *Leguminosae*; Tribe, *Dalbergieae*. Allied to *Dalbergia*.)

Stove evergreen shrub. Cuttings of half-ripened shoots in sand, under a glass, in heat; peat and land. Winter temp., 50° to 55°; summer, 60° to 85°.

M. monilif'ormis. 6. Yellow. Guiana. 1792.

Mulberry. *Mo'rus*.

Mulberry Culture. (*M. ni'gra*)—

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, envelope 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 sowed 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 a while. They will need the ordinary routine of transplanting, etc., 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 mel-low 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 frequently unfer- tile. See **Hybridizing**.

Mulgedium. (Derivation not known. Nat. ord., *Compositæ*; Tribe, *Cichoraceæ*. Allied to *Hieracium*.) Referred to **Lactuca** in the Genera Plan- tarum.

A hardy herbaceous and a good rock-plant. Seeds and divisions in spring; dry, sandy soil.
M. acuminatum. See *Lactuca villosa*.
— *alpinum.* See *Lactuca alpina*.
— *giganteum.* 6 to 8. Blue-violet. 1889.
— *macrorrhizon.* See *Lactuca macrorrhiza*.

Mullein. *Verbascum*.

Mu'ndtia. (After *Henreich Mundt*, a seventeenth century botanist. Nat. ord., *Polygalaceæ*. Allied to *Muraltia*.)

The fruit is eatable. Greenhouse evergreen shrubs, from the Cape of Good Hope. 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. spinosa. 3. White. March. 1780.
— *angustifolia.* 3. Purple. March. 1800.
— *latifolia.* 3. Lilac. February. 1800.

Munt'ngia. (Named after *A. Munting*, a German botanist. Nat. ord., *Tiliaceæ*; Tribe, *Tiliææ*. Allied to *Tilia*.)

Stove evergreen shrub, known as the *Calaburra* in South America. Cuttings of half-ripened

shoots in sand, under a glass, in heat; sandy, fibry loam and leaf-mould. Winter temp., 48° to 58°; summer, 60° to 85°.

M. calaburra. 3. White. June. Jamaica. 1690.

Muraltia. (Named after *J. V. Muralt*, a Swiss botanist. Nat. ord., *Polygalaceæ*. Allied to *Polygala*.)

Greenhouse evergreens, all but one purple-flowered, and all from the Cape of Good Hope. 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. alopecuroides. 3. June. 1800.
— *clivaria.* 3. May. 1824.
— *diffusa.* 3. 1800.
— *filiformis.* 1½. August. 1812. Syn., *Polygala micrantha*, *Andr. Rep. t. 424*.
— *Heisteria.* 6. January. 1787.
— *humilis.* 1. June. 1818.
— *juniperifolia.* 3. June. 1810.
— *linophylla.* 3. June. 1816.
— *macroceras.* 3. 1812.
— *micrantha.* 1½. 1800.
— *mitata.* 3. 1791.
— *squarrosa.* 3. May. 1820.
— *stipulacea.* 3. Red. June. 1801. Syn., *Polygala stipulacea*, *Andr. Rep. t. 363*.
— *virgata.* 3. 1812.

Mur'rice. See **Byrsonima**.

Murra'ya. (Named after *Professor Murray*, editor of Linnæus's works. Nat. ord., *Rutaceæ*; Tribe, *Aurantieæ*. Allied to *Clausena*.)

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. exotica. 10. August. 1771. B. R. t. 434.
— *Königii.* 40. Pale yellow. June. 1820. Syn., *Bergera Königii*. B. C. t. 1019.
— *paniculata.* 20. July. 1823.

Muruce'ja. (The native name. Nat. ord., *Passifloraceæ*.) See **Passiflora**.

M. adiantifolia. See *Passiflora adiantifolia*.
— *Baueri.* B. C. t. 36. See *Passiflora Banksii*.
— *Herbertiana.* See *Passiflora Herbertiana*.
— *ocellata.* B. R. t. 574. See *Passiflora Muruceja*.
— *perfoliata.* See *Passiflora perfoliata*.

Mu'sa. Plantain-tree. (From *mauz*, the Egyptian name. Nat. ord., *Scitamineæ*; Tribe, *Musææ*.)

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. *Cavendishii*, from fruiting at a small size, is the most valuable.

M. africana. Angola. 1871.
— *assamica.* Assam. 1871.
— *Bassjo.* Japan. 1889. B. M. t. 7122. Syn., *M. japonica*.
— *Cavendishii.* 4. Scarlet. China. 1829. *Pact. Mag. iii. p. 51*.
— *coccinea.* 4. Scarlet. July. China. 1792. *Andr. Rep. t. 47*.
— *Ensete.* 35. Greenish-brown. August. Abyssinia. 1853

- M. Fehi*. 15-20. Stem with violet bands and violet juice. Tahiti. 1883.
 — *glauca*. 10. Pink. E. Ind. 1824.
 — *japonica*. See *M. Basjoo*.
 — *maculata*. 10. Pink. Mauritius. 1818. Jacq. H. Schoenb. t. 446.
 — *nepalensis*. 6. Yellow. February. Nepal. 1823.
 — *ornata*. 5. Orange. July. E. Ind. 1823.
 — *paradisica*. 20. Pink. November. Tropics. 1690. B. C. t. 684. Plantain.
 — *rosa cea*. 15. Pink. March. Mauritius. 1805. B. R. t. 706.
 — *sanguinea*. 4. Yellow; bracts crimson. Assam. 1872.
 — *sapientum*. 20. Pink. June. Tropics. 1729. True Banana.
 — *vittata*. Leaves white-striped. Tropical Africa. 1862. Syn. *M. vittata*.
 — *Seemanni*. Fiji. G. C. 1890, viii. p. 182, fig. 28.
 — *sumatra*. Leaves glaucous green, handsomely spotted with chestnut. Sumatra. 1880.
 — *superba*. 14. Purple. July. E. Ind. 1820. B. M. t. 3849-50.
 — *trogodyta*. Sumatra. 1879.
 — *urano scopia*. Queensland. 1881.
 — *velutina*. 8. Yellow. Assam. 1875.
 — *vittata*. See *M. sapientum*, var. *vittata*.
 — *zebrina*. 10. Purple. E. Ind. 1820.

Musa 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 temperature 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.

Musca lineata. (Syn., *Chlorops lineata*) is a fly, whose grub attacks the

young stems of wheat, but this damage is often repaired by the subsequent development of side shoots. This is one of the insects attacked by Ichneumon flies. The flies appear in May or the beginning of June.

Musca'ri. Grape Hyacinth. (From *moschos*, musk; the smell of the flowers. Nat. ord., *Liliaceae*; Tribe, *Scilleae*. Allied to *Hyacinthus*.)

- Hardy bulbs. For culture, see *HYACINTHUS*.
M. aestiva'le. 5. Yellow, green. June. 1877. B. M. t. 6269.
 — *botryodes*'le. 3. Blue. April. Italy. 1596. Syn., *Hyacinthus botryoides*. B. M. t. 157.
 — *album*. 1. White. April. Italy. 1596.
 — *palidum*. 1. Pale blue. April. Italy. 1596.
 — *brevica'pus*. 1. Dark blue. March. Europe. 1876. Syn., *Botryanthus breviscapus*.
 — *ciliatum*. 1. Brown, purple. May. Crimea. 1822.
 — *commutatum*. 1. Blue. Italy. 1836.
 — *comosum*. 1. Blue. April. South Europe. 1596. Syn., *Hyacinthus comosus*. B. M. t. 133.
 — *monstrosum*. 1. Pale blue. April. South Europe. 1596.
 — *concoloratum*. 1. Bright blue, white. Spring.
 — *creticum*. 1. Green, purple. Crete. 1875. Syn., *M. moschatum creticum*.
 — *cornutum*. 1. Violet-blue. March. Campagna.
 — *dilatatum*. 1. Violet. Spring.
 — *Elwesii*. 1. Bright blue. April. Caria.
 — *glaucum*. 1. Purple, green. May. Persia. 1825.
 — *grandifolium*. 1. Dark blue. 1869.
 — *Heldreichii*. 1. Blue, white. Greece. 1869. Gf. t. 1199, fig. A.
 — *luteum*. 1. Sulphur-yellow. Spring. S. Europe.
 — *macrocarpum*. See *M. moschatum*, var. *flavum*.
 — *Marcea'num*. 1. Bright pale blue, white. Armenia. 1889.
 — *micranthum*. 1. Bright violet. April.
 — *moschatum*. 1. Blue, yellow. April. Levant. 1596.
 — *flavum*. 1. Yellow. April. Levant. 1596. Syn., *M. macrocarpum*. B. M. t. 1565.
 — *neglectum*. 1. Deep blue. France.
 — *pallescens*. 1. Pale blue. May. Crimea. 1822.
 — *paradysiacum*. 1. Very dark blue. April. Caucasus.
 — *parviflorum*. Blue. April. Sicily. 1827.
 — *pedunculata*'re. 1. Blue. April.
 — *puiche'num*. 1. Dark blue. March. Greece. 1876. Syn., *Botryanthus Sartorii*.
 — *racemosum*. 1. Blue. April. Europe. 1780. Syn., *Hyacinthus racemosus*. B. M. t. 122.
 — *minutus*. 1. Blue. April. Europe. 1780. 1780.
 — *Szovitsiana*'num. Bright blue, white. Persia, Caucasus. B. M. t. 6855.
 — *tenuiflorum*. Lower flowers olive-green, upper ones deep violet-blue. 1889.

Mushroom. *Agaricus campestris*. *Mushroom-beds*, for winter production, should be formed in August, and once in two months after, of dry materials, such as four or five barrow-loads of horse-droppings, which have been saved for the purpose, four or five barrow-loads of

road-sweepings, and four or five barrow-loads 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 by beating it 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 material, 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 water-pot, 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 haybands 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, when gathering the mushrooms, the short mulch 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 appli-

cations of tepid liquid-manure will be found of great benefit to those beds that have been much 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 inclosure. 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 nine inches high should be placed as a frontage-board, from three to four 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 two to three feet high at the back, sloping down to nine 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, etc., 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 innocuous when young become dangerous when tending to decay; they also then lose much of their flavour.

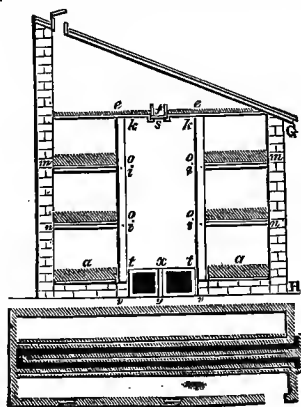
Each mushroom is detached by a gentle twist completely to the root; a knife must never be employed, for the stumps left in the ground decay, and become the nursery of maggots, which are liable to infect the succeeding crop.

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 ten feet by six, and mushrooms have been produced two pounds in weight.

Hampers or boxes containing about four inches depth of fresh, dry stable-dung, or, in preference, of a mixture of three barrow-loads of horse-dung, and one of 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 four inches asunder on the surface of the dung; after six days, an inch and a half 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 two inches and a half 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 brocoli during the winter. It is usually built against the back wall of a forcing-house, as in the annexed plan; 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, *G H*, should be eight feet and a half high for four heights, the width ten feet within the walls, which is most convenient, as it admits shelves three feet and a half wide on each side, and a space up the middle three 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 one inch thick, and plastered on the upper side, *e e*, with road-sand, well wrought together, an inch thick; square trunks, *f*, being left in the ceiling, nine inches in diameter, up the middle of the house, at six feet apart, with slides, *s*, to ventilate with when necessary.

Two single brick walls, *v v*, each five bricks high, are then to be erected at three feet and a half from the outside walls, to hold up the sides of the floor-beds, *a a*, and form at the same time one side of the air flues. Upon these walls, *v v*, are to be laid planks four inches and a half wide, and three inches thick, in which are to be mortised the standards, *k k*, which support the shelves. These standards to be three inches and a half square, and four feet and a half asunder, fastened at the top, *k k*, into the ceiling. The cross bearers, *i i*, *i i*, which support the shelves, *o o*, must be mortised into the bearers and into the walls; the first set of bearers being two feet from the floor, and each succeeding one to be at the same distance from the one below it. The shelves, *o o*, are to be of boards one inch and a half thick, each shelf having a ledge in front, of boards one inch thick and eight 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 six inches wide; this will allow a cavity, *t*, on each side betwixt the flues, two inches wide, to admit the heat from their sides into the house. The middle cavity, *x y*, should be covered with tiles, leaving a space of one 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, *x y*, as before mentioned; the outside cavities, *t t*, are left uncovered.

As the compost, the formation of the beds, etc., are very different from the common practice, we will give Mr. Old-

aker'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, three 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 seven 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 indicate 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, three inches in diameter and nine apart, through the compost, in every part of the beds; these prevent too great a degree of heat arising and causing rotteness.

If the beds do not attain a proper heat in four or five days after being put together, another layer, two 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 unearched, 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 two 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, three or four 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, four 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 eight 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, six inches long, four broad, and three 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 about 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, six 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, six inches thick, of hot dung, to be reinforced with an additional three 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 five feet by ten; two bushels for one double that length; and so on in proportion.

Musk-akro. *Hibi'scus abelmo'schus*.

Musk-flower. *Mi'mulus moschatulus*.

Mussæ'nda. (The Cingalese name of *M. frondosa*. Nat. ord., *Eubiaceæ*; Tribe, *Mussændææ*. 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. cocci'nea. 20. Red. August. Trinidad. 1825.

— *corymbo'sa*. Orange. May. E. Ind. 1827.

— *erythrophy'la*. Sulphur-yellow; bracts crimson. Tropical Africa. 1888.

— *frondo'sa*. 8. Yellow. August. E. Ind. 1814. Syn., *M. pubescens*.

— *glab'ra*. 6. Orange. July. E. Ind. 1820.

— *lute'ola*. Primrose. Tropical Africa. B. M. t. 5573.

— *macrophy'la*. 8. Orange. May. Nepal. 1827.

— *pube'scens*. B. M. t. 2099. See *M. frondosa*.

— *specio'sa*. 6. Red. August. Trinidad. 1820.

— *thei'fera*. Cochin China.

— *uni'lo'ra*. White. Cochin China. 1883.

Mu'sschia. (In honour of *J. M. Mussche*, botanist. Nat. ord., *Campanulaceæ*; Tribe, *Campanuleæ*.)

Greenhouse plants. For cultivation, see CAMPANULA.

M. aurea. 1-2. Golden-yellow. Summer. Madeira. 1777. B. M. t. 6556. Syn., *Campanula aurea*.

— *Wollasto'ni*. 6. Purple. Madeira. 1857.

Mussel scale. See *Aspidiotus conchiformis*.

Mustard (*Sinapis alba*) 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 mid-day sun.

Sowing, for salading, may be made 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 a quarter of an inch deep, and six 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 (*Lepidium sativum*) 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 eight or nine 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. *Phædon beetle*.

Muti'sia. (Named after *C. Mutis*, a South American botanist. Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*. 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. latifolia* should be tried against a wall.

M. arachnoidea. 6. Red. July. Brazil. 1823. Syn., *M. speciosa*.

- *breviflora*. Chili. Gf. t. 1163, fig. 1.
- *Clematis*. Scarlet. New Grenada. 1859.
- *decurrens*. Orange. Chilian Andes. Hardy.
- *diversifolia*. 10. S. Amer. 1832.
- *latifolia*. 10. Pink, yellow. September. Valparaiso. 1832.
- *speciosa*. See *M. arachnoidea*.
- *versicolor*. Chili. Gf. t. 1163, fig. 2.
- *virgata*. Bright orange. Peru, Bolivia and Chili. 1837. Rev. Hort. 1891, p. 228.

My'agrum. (From *myia*, a fly, and *agra*, capture; referring to the clamminess of the plant. Nat. ord., *Cruciferae*; Tribe, *Isatideæ*. Allied to *Isatis*.)

Hardy annual. Seeds in open border, in April.

M. perfoliatum. †. Pale yellow. June. France. 1648.

Myan'thus. Flywort. (From *myia*, a fly, and *anthos*, a flower; its appearance when dried. Nat. ord., *Orchideæ*; Tribe, *Vandææ-Stanhopeæ*.) See *Catasetum*.

Flowers of *M. barbatus* and *Monachanthus viridis* has been produced on a spike of *Catasetum*, showing the uncertainty of the laws on which genera and species were founded in Orchids. The differences in this case are now known to be due to the difference in structure between the male and female flowers. *Catasetum* being the older name, *Monachanthus* and *Myanthus* have been united to it.

Mycara'nthes. (Same derivation as *Myanthus*. Nat. ord., *Orchideæ*; Tribe, *Epidendreae-Eriaceæ*.) A synonym of *Eria*.

M. obliqua. White. Singapore. 1840.

Myg'inda. (Named after *C. Mygind*, a German botanist. Nat. ord., *Celastreae*; Tribe, *Celastreae*. Allied to *Elæodendron*.)

Evergreen shrubs, all white-flowered but one. They require stove-treatment, and are propagated by ripe shoots in sand, under a bell-glass, in heat; loam and peat, sandy and fibry.

M. integrifolia. 4. Martinique. 1826.

— *latifolia*. 4. April. W. Ind. 1795.

— *myrsinifolia*. See *Pachystima myrsinites*.

— *Rhacoma*. 4. Jamaica. 1798. Jacq. Ic. t. 311.

— *uragoga*. 4. Purple. August. S. America. 1790.

Myloca'ryum. Buckwheat-tree. (From *myla*, a mill, and *karyon*, a nut; having four-winged seeds. Nat. ord., *Cyrtillaceæ*.) See *Cliftonia*.

M. ligustrinum. B. M. t. 1625. See *Cliftonia ligustrina*.

Myopo'rum. (From *myo*, to shut, and *poros*, a pore, or opening; referring to the transparent spots on the leaves. Nat. ord., *Myoporineæ*.)

Greenhouse, white-flowered, evergreen shrubs, from New South Wales. Cutting of the points of shoots, getting firm at their base, in sand, under a bell-glass, in April; loam and peat, fibry and sandy, with pieces of charcoal intermixed. Winter temp., 38° to 48°. *M. parvifolium* and others would, no doubt, succeed against a wall, where protection could be given in winter.

M. acuminatum. 3. 1812.

— *crassifolium*. 1½. New Zealand. 1822.

— *debile*. 1½. Pink. June. 1799. B. M. t. 1830.

— *diffusum*. 3. April.

— *elipticum*. 2. February. 1789.

— *insula're*. 3. February. 1800.

— *montanum*. 2. 1823.

— *oppositifolium*. 3. 1803.

— *parvifolium*. 3. 1803. B. M. t. 1693.

— *serratum*. 6. White, purple. May. B. G. 1845, t. 15.

— *tuberculatum*. 3. 1803.

Myosoti'dium. (From *Myosotis*, and *eidos*, resembling; the flowers being like those of the Forget-me-not. Nat. ord., *Boraginæ*; Tribe, *Borageæ*.)

Hardy herbaceous perennial.

M. noble. 1½. Blue, white. April. Chatham Islands. 1858. B. M. t. 5137.

Myoso'tis. Forget-me-not. (From *mus*, a mouse, and *otis*, an ear; resemblance of the leaves. Nat. ord., *Boraginæ*; Tribe, *Borageæ*.)

Seed 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. palustris* 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.

HARDY HERBACEOUS.

- M. alpestris*. †. Blue. July. Switzerland. 1818. Eng. Bot. ed. 3, t. 1109.
 — *azorica*. 1. Dark blue. August. Azores. 1846. B. M. t. 4122.
 — *azu'ra*. Blue. June. Corvo. 1842.
 — *cæspitosa*. ‡. Blue. June. Britain.
 — *macrocalyx*. ‡. Blue. June. Britain.
 — *disstiflora*. Blue, with yellow eye. Switzerland. 1868. The finest of the cultivated species.
 — *alba*. White. 1883.
 — *elegantissima*. Leaves edged with white.
 — *grandiflora*. February. Garden variety. 1886.
 — *splendens*. Garden variety. 1881.
 — *intermedia*. †. Blue. April. Britain.
 — *na'na*. †. Blue. July. Europe. 1800.
 — *obtusum*. See *Anchusa Barreheri*.
 — *palustris*. 1. Blue. Yellow. July. Britain. Eng. Bot. ed. 3, t. 1104.
 — *Reichensteineri*. A dwarf variety of *M. cæspitosa*. 1889.
 — *repens*. 1. Pale blue. June. Britain.
 — *rupicola*. Blue. Scotland.
 — *sericea*. 1. Purple, yellow. July. Siberia. 1802. Syn., *Anchusa sericea*.
 — *spariflora*. 1½. Blue. May. South France. 1822.

HARDY ANNUALS.

- M. arvensis alba*. †. White. June. Britain.
 — *australis*. Blue. June. N. S. Wales. 1824.
 — *californica*. 1½. White. August. California. 1837.
 — *cintra*. See *M. Welwitschii*.
 — *clava'ta*. Blue. June. Siberia. 1829.
 — *collina*. †. Blue. May. Britain.
 — *commutata*. Blue. June. Europe. Biental.
 — *litoralis*. Blue, yellow. April. Caspian Sea. 1836.
 — *macrophylla*. See *Anchusa myosotidiflora*.
 — *peduncularis*. 1½. Blue. June. Astracan. 1824.
 — *ungulata*. Blue. June. Siberia. 1822.
 — *Welwitschii*. †. Bright blue, yellowish-white. Portugal. Syn., *M. cintra*. Gd. 1890, p. 134, fig. 14.

Myrcia. (A name of Venus. Nat. ord., *Myrtaceæ*; Tribe, *Myrteæ*. 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 fibry loam, with charcoal nodules to keep it open. Winter temp., 50° to 60°; summer, 60° to 80°.

- M. acris*. B. M. t. 3153. See *Pimenta acris*.
 — *amplexicaulis*. 5. White. Brazil. 1869.
 — *bractea'ta*. 4. May. Brazil. 1824.
 — *cori'cea*. 4. Carribean Isles. 1769.
 — *crassinervia*. May. Guiana. 1780.
 — *pimento'des*. 20. May. W. Ind.
 — *psuedo'mini*. May. Brazil. 1822.
 — *soro'ria*. 5. May. Trinidad. 1822.
 — *splendens*. 12. May. Hispaniola. 1822.

Myria'ctis. (From *myrios*, a myriad, and *atkin*, a sunbeam; referring to the

florets. Nat. ord., *Compositæ*; Tribe, *Asteroidææ*. Allied to *Bellis*.)

Half-hardy herbaceous. 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. Gmelini. White. June. Persia. 1836.

Myriade'nus. (From *myrios*, a myriad, and *aden*, a gland; the leaves are thickly beset with glands. Nat. ord., *Leguminosææ*; Tribe, *Hedysarææ*.) See *Zornia*.

M. tetraphyllus. See *Zornia tetraphylla*.

Myri'ca. Candleberry Myrtle. (From *myrio*, to flow; inhabiting the banks of rivers. Nat. ord., *Myrtaceæ*.)

The berries of *M. cerifera* 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 *M. ga'le* is one of our hardest 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 *Cocculus Indicus*, and, when distilled while they are fresh, they yield an essential oil. All like rather moist, sandy peat.

HARDY SHRUBS.

- M. asplenifolia*. 4. Brown. April. N. Amer. 1714. Syn., *Comptonia asplenifolia*.
 — *californica*. 4. Green. July. California. 1848.
 — *cerifera*. 8. May. N. Amer. 1699. Deciduous.
 — *latifolia*. 6. May. N. Amer. 1730. Evergreen.
 — *ga'le*. 4. May. Britain. Deciduous. Eng. Bot. ed. 3, t. 1248.

GREENHOUSE EVERGREEN SHRUBS.

- M. esculenta*. 20. May. Nepal. 1817.
 — *hirsuta*. June. Cape of Good Hope.
 — *mexicana*. 8. February. Mexico. 1823.
 — *Na'g*. See *M. rubra*.
 — *quercifolia*. 3. June. Cape of Good Hope. 1752.
 — *rubra*. Greenish; fruit red, purple. China, Japan. 1868. Syn., *M. Nagi*. B. M. t. 5727. The *Yang-mae*; fruit eatable.

Myrica'ria. (From *myrike*, the Greek name of the Tamarisk. Nat. ord., *Tamariscinææ*; Tribe, *Tamariscinææ*.)

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. dahurica*. 6. Dahuria. 1816.
 — *germanica*. 8. July. Germany. 1582.

Myrioca'ropa. (From *myrios*, a myriad, and *karpos*, a fruit. Nat. ord., *Urticaceæ*.)

Stove shrub of bold habit.

- M. colibensis*. Flowers small, in pendulous spikes two feet long. Mexico. Syn., *M. stipitata*.

Myriophyllum. Water-Milfoil. (From *myrios*, a myriad, and *phyllon*, a leaf. Nat. ord., *Haloragacæ*.) Allied to *Hippuris*.)

Hardy perennial, British water-plants, except *M. proserpinacoides*, suitable for the margins of lakes, ponds, etc. Chiefly by division; ponds and ditches; interesting little aquatics.

- M. alterniflorum*. 1. July.
— *pectinatum*. Rose. July.
— *proserpinacoides*. Brazil, Chili, 1878. Syn., *Herpestes reflexa*.
— *spicatum*. 1. Red. July.
— *verticillatum*. 1. Green. July.

Myrio'pteris. (From *myrios*, a myriad, and *pteris*, a fern; the fronds being very minutely divided. Nat. ord., *Filices*—*Polypodiaceæ*.) Now united with *Cheilanthes*.

Stove fern. See FERNES.

- M. elegans*. 1½. Tropical America.
— *frigida*. Tropical America.
— *lندی'gera*. 1. Tropical America. 1823.
— *myriophylla*. Tropical America. 1841.
— *tomentosa*. Tropical America. 1841.
— *vestita*. Tropical America. 1841.

Myri'stica. Nutmeg. (From *myristicos*, sweet-smelling. Nat. ord., *Myristicaceæ*.)

Stove evergreens. Cuttings of ripened shoots insand, under a bell-glass, and in a sweet bottom-heat; sandy loam and fibry peat. Winter temp., 55° to 60°; summer, 60° to 85°.

- M. Beccarrii*. White. Australia. B. M. t. 6823.
— *fa'tua*. 30. Green, white. Surinam. 1812.
— *fragrans*. 30. Pale yellow. E. Ind. 1795. Syn., *M. moschata* and *M. officinalis*. B. M. t. 2756-7.
— *sebi'fera*. 10. Yellow, green. Guiana.

Myro'balan plum. *Pru'nus cerasi'fera*.

Myro'dia. (From *myron*, fragrant balsam, and *osme*, smell. Nat. ord., *Sterculiaceæ*; Tribe, *Helicteræ*. Allied to *Helicteres*.)

Stove evergreen. Cuttings of half-ripened shoots insand, under a bell-glass, and in heat; rich, sandy loam. Winter temp., 55°; summer, 60° to 85°.

- M. turbinata*. 6. White. W. Ind. 1793.

Myro'sma. (From *myron*, fragrant balsam, and *osme*, smell. Nat. ord., *Scitamineæ*; Tribe, *Marantææ*.)

- M. cannaefolia*. A synonym of *Calathea Myrosma*.

Myrospe'rmum. (From *myron*, myrrh, or aromatic balsam, and *sperma*, a seed; the seeds yield a strong-smelling resin. Nat. ord., *Leguminosæ*; Tribe, *Sophorææ*. Allied to *Sophora*.)

Stove evergreen trees. Cuttings of half-ripened shoots insand, 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. frutescens*. 10. Rose. May. Caraccas 1824.

M. peruvianum. See *Myrozyllon peruvianum*.

— *pubescens*. See *Myrozyllon pubescens*.

— *Toluiferum*. See *Myrozyllon Toluiferum*.

Myro'xylon. (From *myron*, fragrant balsam, and *xylon*, wood; the wood contains a sweet-scented balsam. Nat. ord., *Leguminosæ*; Tribe, *Sophorææ*. Syn., *Toluifera*.)

This is the genus which produces the Balsam of Tolu and Balsam of Peru, used in perfumery and in the preparation of lozenges. For culture, see MYROSPERMUM, in which the species were formerly included.

- M. peruvianum*. 40. White. Peru. 1824. Peru Balsam Tree.
— *pubescens*. 40. White. Carthage. 1820.
— *Toluiferum*. 40. Cream. S. Amer. 1733. Syn., *Toluifera balsamum*. Tolu Balsam Tree.

My'rrihis. Myrrh. (From *myrrah*, myrrh, or perfumed balsam. Nat. ord., *Umbellifereæ*; Tribe, *Ammineæ*. 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. odorata*. 2½. White. May. Britain.

Myrsi'ne. (The ancient name of myrrh. Nat. ord., *Myrsineæ*; Tribe, *Eumyrsineæ*. Allied to *Ardisia*.)

Greenhouse evergreens. Cuttings of stubby shoots before they are quite ripe, in sand, under a glass, in heat; fibry loam and sandy peat, Winter temp., 38° to 48°.

- M. africana*. 4. Brown. May. Cape of Good Hope. 1691.
— *retusa*. 2. White. Green. June. Cape of Good Hope. 1788.
— *bijaria*. 20. White, pink. January. Nepal. 1822.
— *canariensis*. 30. Whitish. Teneriffe. 1820. Syn., *Mangilla canariensis*.
— *capitellata*. 30. Green. January. Nepal. 1822. B. M. t. 3222.
— *coriacea*. 8. December. Jamaica. 1770.
— *Heberdenia*. A synonym of *Heberdenia excelsa*.
— *ilicifolia*. 1826.
— *melanophleas*. 3. White, green. Cape of Good Hope. 1783.
— *mitis*. 6. White. July. Cape of Good Hope. 1692. Syn., *Mangilla Milleriana*.
— *Sama'ra*. 3. White, green. Cape of Good Hope. 1770.
— *semiserrata*. 30. Pink. January. Nepal. 1822.
— *subspinosa*. 20. Nepal. 1823.
— *variabilis*. 3. July. N. S. Wales. 1824.

Myrsiphyllum. (From *myrsine*, myrrh, and *phyllon*, a leaf; aromatic leaves. Nat. ord., *Liliaceæ*; Tribe, *Asparagææ*.) Now united to *Asparagus*.

Greenhouse deciduous twiners, with greenish-white flowers, from Cape of Good Hope. Division of the root in spring; sandy loam and dried leaf-mould. Winter temp., 40° to 48°.

- M. angustifolium*. 6. July. 1752. A synonym of *Asparagus medeloides*, var. *angustifolium*.

- M. asparagoides*. 6. June. 1702. B. M. t. 5584. A synonym of *Asparagus medeloides*.
 — *falciformis*. See *Asparagus medeloides*, var. *falciformis*.

Myrtus. The Myrtle. (From *myron*, signifying perfume. Nat. ord., *Myrtaceæ*; Tribe, *Myrteæ*.)

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., 35° to 45°. The stove kinds merely require a higher temperature. The varieties of *communis* 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. biflora*. 10. May. Jamaica. 1759.
 — *buxifolia*. 6. Isle of Bourbon. 1826.
 — *dumosa*. 3. June. W. Ind. 1793.
 — *Gregii*. 6. Dominica. 1776.
 — *mespiloides*. 50. Isle of Bourbon. 1826.
 — *obovata*. 6. July. Maranhon. 1823. B. R. t. 1044.
 — *orbiculata*. 6. Mauritius. 1823. B. M. t. 4558.
 — *Pimenta*. See *Pimenta officinalis*.
 — *virgulosa*. 6. July. Jamaica. 1787.

GREENHOUSE EVERGREENS.

- M. affinis*. 6. Purple. June. China. 1823.
 — *bullata*. 18. White. July. New Zealand. Ic. Pl. t. 557.
 — *Cheken*. White. Chili. 1867. Syn., *Luma Cheken*. B. M. t. 5044. Half-hardy.
 — *apiculata*. 3. White. Chili. 1877.
 — *communis*. 6. June. South Europe. 1597. Sibth. Fl. Gr. t. 475.
 — *baetica*. 6. July. South Europe. 1597.
 — *belgica*. 6. July. South Europe. 1597.
 — *fore-pleno*. 6. July. South Europe. 1597.
 — *italica*. 6. July. South Europe. 1597.
 — *lusitana*. 6. July. South Europe. 1597.
 — *maculata*. 6. July. South Europe. 1597.
 — *mucronata*. 2. July. South Europe. 1597.
 — *romana*. 6. July. South Europe. 1597.
 — *tarentina*. 6. July. South Europe. 1597.
 — *variegata*. 6. July. South Europe. 1597.
 — *Luma*. 3. White. Chili. Syn., *Eugenia Luma*. B. M. t. 5040.
 — *apiculata*. 3. White. Chili. Syns., *Eugenia apiculata* and *E. Luma*, var. *apiculata*. Gf. t. 390.
 — *melastomoides*. 15. Moreton Bay.
 — *tenuifolia*. 5. N. Holland. 1824.
 — *tomentosa*. 6. Purple. June. China. 1776. B. M. t. 250.
 — *trinervis*. 5. N. Holland. 1824.
 — *Ugni*. 3. Pink. July. South Chili. 1861. Syn., *Eugenia Ugni*. B. M. t. 4626.

Mystacidium. (From *mustax*, a moustache; the column is furnished with a line of hairs at the top. Nat. ord., *Orchidææ*; Tribe, *Vandææ*—*Sarcandtheæ*.)

- Culture same as for *ANGRÆCUM*, which see.
M. distichum. †. Green, white. September. Sierra Leone. 1835. Syn., *Angræcum distichum*. B. R. t. 1781.
 — *filiciforme*. White. Natal. G. C. 1837. ii. p. 123, fig. 33.

N.

Nægelia. (Named in honour of Dr. *Nägeli*, an eminent German botanist. Nat. ord., *Gesneraceæ*; Tribe, *Gesneræ*. Allied to *Achimenes*.)

Stove herbaceous perennials. For cultivation, see *GESNERA*, under which genus the species were formerly included.

- N. achimenesoides*. Yellow, rose. Hybrid. 1836.
 — *ambilis*. A synonym of *N. multiflora*.
 — *cinnabarinæ*. 2. Scarlet. Mexico. 1856. Syn., *Gesnera cinnabarinæ*. B. M. t. 5036.
 — *fulgida*. Scarlet, white. Vera Cruz. 1867.
 — *bicolor*. Vermilion, white. Garden variety. Fl. Ser. t. 1755.
 — *Geroltiana*. 2. Orange-scarlet. Mexico. 1844. Syn., *Gesnera Geroltiana*.
 — *multiflora*. 2. White. August. Mexico. Syns., *Achimenes multiflora*, *A. ambilis*, *Gesnera amabilis*, B. M. t. 5083, and *G. multiflora*.
 — *zebrina*. 2. Scarlet, yellow. September. Brazil. 1840. Syn., *Gesnera zebrina*. B. M. t. 3940.

Nage'lia. (Named after *Nageli*, a German botanist. Nat. ord., *Rosaceæ*; Tribe, *Pomeæ*.) See **Cotoneaster**.

N. denticulata. See **Cotoneaster denticulatus**.

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 oil-less. 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 1,000 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, etc., 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., *Hydrophyllaceæ*; Tribe, *Malvaceæ*. Allied to *Wigandia*.)

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. jamaicensis. White, blue. June. Jamaica. 1812. Stove annual.

— *Parryi*. 4-5. Lilac-purple. California. 1881. Half-hardy herbaceous perennial.

— *undulata*. 1. Violet. June. Mexico. 1828. Greenhouse herbaceous.

Nandi'na. (From *nandin*, the Japanese name. Nat. ord., *Berberidææ*; Tribe, *Berberacæ*. 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. demuda'ta. 6. 1879.

— *domestica*. 6. White. July. China. 1804. B. M. t. 1109.

Na'nnorhops. (From *nannos*, dwarf, and *rhops*, a bush; referring to the habit of this plant. Nat. ord., *Palmææ*.)

Small stove palm. Sandy loam, leaf-soil, and a little charcoal, with thorough drainage. Seeds and offsets. Fans, baskets, etc., are made from the leaves.

N. Ritchea'na. 3-20. India.

Nano'des. (From *nanodes*, a pigmy. Nat. ord., *Orchidææ*; Tribe, *Epidendrea-Laeliææ*.) United with *Epidendrum* by Bentham and Hooker.

Stove orchid. See ORCHIDS.

N. di'scolor. †. Purple. August. Rio Janeiro. B. R. t. 1541.

— *Medu'sæ*. 1. Purple, green. Andes. B. M. t. 5723.

Napa'a. (From *ne*, not, and *paos*, shining. Nat. ord., *Malvaceæ*.)

Hardy, herbaceous perennial. Division. Seeds. *N. dio'ica*. 6. United States.

Napoleo'na. (Named after *Napoleon Bonaparte*. Nat. ord., *Myrtaceæ*; Tribe, *Lecythidææ*.)

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 fibry loam. Winter temp., 55° to 60°; summer, 60° to 90°, and moist.

N. cuspidata. Cream, crimson. 1886.

— *imperialis*. 6. Apricot, crimson. May. Sierra Leone. 1844. B. M. t. 4387.

— *Miersii*. B. M. t. 7199. Syn., *N. Whitfieldii*.

Napoleon's Weeping Willow. *Salix Napoleo'na*.

Narave'lia. (From *narawæl*, its Cingalese name. Nat. ord., *Ranunculaceæ*; Tribe, *Clematidææ*. Allied to *Clematis*.)

Stove evergreen climber. Cuttings of half-ripened shoots in sand, under a glass, in heat; sandy peat and fibry loam. Winter temp., 50° to 60°; summer, 60° to 85°.

N. zeyla'nica. 12. Yellow. Ceylon. 1796.

Narci'ssus. (Name of a youth, said to have been changed into this flower. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllææ*. Syn., *Chione*, *Corbularia*, *Ganymedes*, *Helena*, *Hermione*, *Illus*, *Jonguilla*, *Philogyne*, *Plateana*, *Prasiteles*, *Queltia* and *Tityrus*.)

This genus of hardy bulbs, like the *Rhododendron*, has so multiplied, that it is utterly impossible to make out what are, and what are not, true species. Of recent years names have been given to the slightest forms, one grower distinguishing about two hundred named forms of *N. Pseudo-narcissus*. To have included all such forms would have occupied too much space in a work of this kind; only the more distinct or widely known ones will, therefore, be found in the subjoined list. Salisbury and Haworth gave generic names, as above, 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. A form of *N. Pseudo-narcissus*.

— *albicans*. See *N. Pseudo-narcissus*, var. *moschatus*.

— *albus*. See *N. biflorus*.

— *anyustifolius*. See *N. poeticus*, var. *radiiflorus*.

— *aperticorona*. Yellow, orange. April. N. Africa. A *Tazetta* form.

— *aurantius*. See *N. incomparabilis*, var. *aurantius*.

— *Backhou'sei*. Sulphur and lemon-yellow. Garden hybrid.

— *Ba'ria*. See *N. Tazetta*, var. *Luna*.

— *Ba'rrii*. Varying from sulphur to orange-yellow. Garden hybrid.

— *bicolor*. See *N. Pseudo-narcissus*, var. *bicolor*.

— *bicrenatus*. See *N. intermedium*.

— *biflorus*. 1. White. Pale yellow. May.

— *bi'frons*. 1. Yellow. March. S. Europe. A form of *N. intermedium*.

— *bre'vistos*. B. M. t. 1187. See *N. Pseudo-narcissus*, var. *bicolor*.

— *Broussonetii*. 1½-2. Pure white. Morocco. 1888. Corona absent, or very rudimentary.

— *Bulbocodium*. †. Bright yellow. April. S. Europe and N. Africa. 1629. B. M. t. 88. Hoop peticocat *Narcissus*.

— *citrinus*. Sulphur-yellow. Flowers larger.

— *conspicuus*. †. Yellow. May. Syn., *N. conspicuus*.

— *Græ'vii*. †. Sulphur-yellow, green. Spring. Spain. 1879. Syn., *N. Grællvii*.

— *monophyllus*. White. January. Algeria. 1870. Syn., *N. monophyllus*. B. M. t. 5831.

— *nivalis*. White. Dwarf.

— *tenusifolius*. Swt. Fl. Gard. t. 114.

— *Burbi'dgei*. 1. White, yellow, red. Garden hybrid.

— *calathinus*. B. M. t. 934. See *N. odorus*.

— *ca'mbricus*. A form of *N. Pseudo-narcissus*.

— *canadensis*. Red. Lil. t. 188. See *N. Pseudo-narcissus*, var. *moschatus*.

— *ca'pax*. †. Pale yellow. May.

- N. cerinus*. 1. White. April.
 — *cernuus* of Swt. Fl. Gard. ser. 2, t. 101, is a form of *N. Pseudo-narcissus*, var. *moschatius*; of Salisbury, B. M. t. 48, is a form of *N. triandrus*.
 — *citrius*. 1. White, yellow. April. A form of *N. Bulbocodium*.
 — *compressus*. 1. Yellow. March. Spain. A form of *N. intermedius*.
 — *concolor*. A form of *N. incomparabilis*.
 — *conspicuosus*. $\frac{1}{2}$. Yellow. May. Swt. Fl. Gard. ser. 2, t. 326. A form of *N. Bulbocodium*.
 — *crenula*. 1. White. April. Spain.
 — *Curtisii*, B. M. t. 78. See *N. odoratus*, var. *trilobus*.
 — *cyclamineus*. B. M. t. 6950. See *Narcissus Pseudo-narcissus*, var. *cyclamineus*.
 — *Cypri*. 1. White, yellow. March. Cyprus. A *Tazetta* form.
 — — *corona plena*. 1. White, yellow. March.
 — *deficiens*. See *N. serotinus*, var. *deficiens*.
 — *du'bus*. White. April. France. A *Tazetta* form.
 — *Egystette'nsis*. Lemon-yellow. Double-flowered form of *N. Pseudo-narcissus*. For the history of this very old form, see G. C. 1883, xix. p. 412.
 — *Fenzli*. Garden hybrid. 1891.
 — *festuosus*. 2. White, yellow. April. A *Tazetta* form.
 — *floribundus*. $1\frac{1}{2}$. White, yellow. March. Spain. A *Tazetta* form.
 — *galanthifolius*. $\frac{1}{2}$. White. May.
 — *Gouani*. See *N. incomparabilis*.
 — *grandifolius*. $1\frac{1}{2}$. Yellow. April. B. R. t. 816.
 — *grandiflorus*. 1. White, yellow. April.
 — *Haworthii*. 1. Yellow. April. 1790.
 — — *plenus sulphureus*. Sulphur. April. 1829.
 — *heminalis*. 1. Yellow. March. A form of *N. odoratus*, var. *trilobus*.
 — *Horsfieldii*. See *N. Pseudo-narcissus*, var. *bicolor*.
 — *Hu'mei*. Sulphur and lemon-yellow. Hybrid.
 — — *albidus*. White, lemon-yellow.
 — *incomparabilis*. 1. Yellow. April. Portugal. 1829. B. M. t. 121. Syn., *N. Gouani*, Red. Lil. t. 220, and *Queltia fetida*.
 — — *alba*. White. Lemon-yellow.
 — *aurantiaca*. Pale yellow. The double form is known as Butter and Eggs.
 — — *Leedsii*. Rim of corona orange-red.
 — *concolor*. Pale lemon-yellow.
 — *nevada*. White, lemon-yellow.
 — *inflatus*. $\frac{1}{2}$. Yellow. March.
 — — *minor*. $\frac{1}{2}$. Pale sulphur. March. Spain. 1696.
 — *infundibularis*. $\frac{1}{2}$. Yellow. March.
 — *interjectus*. 1. Yellow. April. 1810. A form of *N. odoratus*.
 — *intermedius*. $1\frac{1}{2}$. Pale yellow. March. Pyrenees. Red. Lil. t. 427. Forms of this are:—*N. compressus*, *N. bifrons*, *N. primulina*, and *N. radiatus*.
 — *italicus*. 1. Pale yellow. March. South Europe. B. M. t. 1188. A *Tazetta* form.
 — — *plenus*. 1. Cream. March. Italy.
 — — *semiplenus*. 1. Cream. Italy.
 — *Jongqu'illa*. $\frac{1}{2}$. Pale yellow. April. Spain. 1596. B. M. t. 15.
 — — *stovrepleno*. 1. Yellow. April. Spain. 1596.
 — *juncifolius-murticus*. Lemon-yellow. Pyrenees. G. C. 1889, vi. p. 161, fig. 22. Natural hybrid.
 — *juncifolius*. Yellow. South Europe.
 — — *rupicola*. Yellow. April. South of France. B. M. t. 6478C. Syn., *N. apodanthus*.
 — *latifolius*. 1. Yellow. April.
 — *Leedsii*. White, sulphur. Garden hybrid. See also *N. incomparabilis*, var. *Leedsii*.
N. lobularis. A form of *N. Pseudo-narcissus*.
 — *longiflorus*. B. M. t. 924. See *N. Pseudo-narcissus*, var. *moschatius*.
 — *lorifolius*. 1. Yellow. March. B. M. t. 1187. A form of *N. Pseudo-narcissus*, var. *major*.
 — — *anceps*. 1. Yellow. March. 1800.
 — — *bre'viflorus*. 1. Yellow. April.
 — *lu'na*. 1. White. April. A *Tazetta* form.
 — *Macleri*. $\frac{1}{2}$. Cream. March. Smyrna. 1815. B. R. t. 987. A hybrid.
 — *maja'lis*. B. M. t. 193. See *N. poeticus*, var. *radiiflorus*.
 — *ma'jor*. 1. Yellow. March. Spain. 1692.
 — *Margaritae*. Garden hybrid. 1891.
 — *Mastersiana*. Creamy-white, pale primrose. 1882. Garden hybrid.
 — *maximus*. 1. Yellow. April.
 — *medio-luteus*. See *N. biflorus*.
 — *minimus*. A form of *N. Pseudo-narcissus*, var. *minor*.
 — *minor*. $\frac{1}{2}$. Yellow. March. Spain. 1629.
 — *monophyllus*. See *N. Bulbocodium*, var. *monophyllus*. B. M. t. 5831. A hybrid between this and *N. calathinus* was raised in 1890.
 — *montanus*. B. R. t. 123. See *N. poculiflorus*.
 — *moschatius*. B. M. t. 1300. See *N. Pseudo-narcissus*, var. *moschatius*.
 — *multiflorus*. 1. Yellow. April.
 — — *auratus*. 1. Yellow. April.
 — *na'nus*. A form of *N. Pseudo-narcissus*, var. *minor*.
 — *neglectus*. White, yellow. April. Naples. 1830.
 — *Nelsoni*. Lemon-yellow. Garden form.
 — *nevus*. 1. White. May. South Europe.
 — *no'bilis*. 1. Yellow. April. Syn., *Ajax nobilis*, Red. Lil. t. 158. A form of *N. Pseudo-narcissus*.
 — *notans*. 1. Yellow. April. South Europe. 1789.
 — *obsoletus*. A form of *M. serotinus*, var. *elegans*.
 — *obvallaris*. A form of *N. Pseudo-narcissus*, var. *major*.
 — *odoratus*. 1. Yellow. May. South Europe. 1629. Red. Lil. t. 157. Syn., *N. calathinus*. B. M. t. 934.
 — — *luteus*. A small form. Syn., *N. odoratus* of B. M. t. 78.
 — — *minor*. Yellow. Syn., *N. pseudo-juncifolius*.
 — — *rugulosus*. Yellow.
 — — *trilobus*. Yellow.
 — *pachybotrys*. See *N. Tazetta*, var. *vachybotrys*.
 — *pallidus*. B. M. t. 6473A. See *N. triandrus*.
 — *pallidus pro'cox*. A form of *N. Pseudo-narcissus*, var. *major*.
 — *papyraceus*. 1. White. March. B. M. 947. A *Tazetta* form.
 — — *jasmineus*. 1. White. April.
 — *patella'ris*. 1. White. May. A form of *N. poeticus*.
 — — *esse'rtus*. 1. White. May.
 — — *plenus*. 1. White. May.
 — *patulus*. 1. White. March. Spain.
 — — *albus*. 1. White. March. Spain.
 — *poculiflorus*. 1. Snow-white. April. Probably a hybrid. Syn., *N. montanus*. B. R. t. 123.
 — *poeticus*. 1. White. May. South Europe. Red. Lil. t. 160.
 — — *maja'lis*. White, edge of corona saffron.
 — — *patella'ris*. White, edge of corona saffron.
 — — *poetarum*. Corona yellowish. April.
 — *radiiflorus*. 1. White. March. South Europe. Syns., *N. angustifolius*, B. M. t. 193, and *N. majalis*.
 — — *recurvus*. 1. White. May. South Europe. Syn., *N. recurvus*. Swt. Fl. Gard. ser. 2, t. 188.

- N. poeticus stella'ris*. May. Syn., *N. stellaris*. Swt. Fl. Gard. ser. 2, t. 132.
- *verbane'nsis*. White, yellowish.
- *primuli'nus*. B. M. t. 1299. See *N. intermedium*.
- *pri'nceps*. A form of *N. Pseudo-narcissus*.
- *propi'nquus*. A variety of *N. Pseudo-narcissus*.
- *peu'do-junci'folius*. See *N. odorus*, var. *minor*.
- *Pseu'do-narci'ssus*. 1. Pale yellow. March. England. The Daffodil. Of this numerous varieties have been raised in gardens, the following being the chief.
- *bi'color*. Pure white; corona lemon yellow. *N. breviflorus*, B. M. t. 1187, and *N. Horsfieldii* are forms.
- *cyclami'neus*. Lemon and orange-yellow. Portugal. Syn., *N. cyclamineus*. B. M. t. 6950.
- *Johanni'ni*. Palesulphur. Portugal, 1887.
- *ma'jor*. Lemon-yellow. B. M. t. 51.
- *mi'nor*. Sulphur yellow; corona darker. Red. Lil. t. 480. Forms of this are *N. minimus*, *N. nanus* and *N. pumilus*.
- *moscha'tus*. 1. White. April. Western Europe. Syn., *N. moschatus*, B. M. t. 1300, and *N. candidissimus*, Red. Lil. t. 188. Forms of this are:—*N. albicans*, *N. cernuus*, Swt. Fl. Gard. ser. 2, t. 101, *N. longiflorus*, B. M. t. 924 and *N. tortuosus*.
- *pleni'ssimus*. 1. Yellow. March.
- *ple'nus*. 1. Yellow. March.
- *scoti'cus*. 1. Yellow. May. Scotland.
- *pulche'rillus*. 1. Yellow. April. Spain.
- *pu'milus*. A form of *N. Pseudo-narcissus*, var. *minor*.
- *radia'tus*. A form of *N. Tazetta*, var. *intermedium*.
- *recur'vus*. Swt. Fl. Gard. ser. 2, t. 188. See *N. poeticus*, var. *recurvus*.
- *rugilo'bus*. A form of *N. Pseudo-narcissus*, var. *intermedium*.
- *Sabi'ni*. 1. Yellow. April. B. R. t. 762. A hybrid.
- *scabe'rulus*. †. Yellow. Portugal. 1888.
- *semiparti'tus*. 1. Sulphur. March. A form of *N. incomparabilis*.
- *sero'tinus*. 1. Pure white; corona lemon-yellow. September. South Europe.
- *defici'ens*. Corona rudimentary. Syn., *N. deficiens*. B. R. 1847, t. 22, fig. 1.
- *e'legans*. 1. White, yellowish. September. Italy.
- *serra'tus*. †. Pale yellow. March. South Europe.
- *sua'vis*. Pale yellow. March. South Europe.
- *si'milis*. †. Yellow. April.
- *spu'rius*. A form of *N. Pseudo-narcissus*, var. *major*.
- *stella'ris*. Swt. Fl. Gard. ser. 2, t. 132. See *N. poeticus*, var. *stellaris*.
- *stria'tulus*. †. Yellow. April.
- *syri'acus*. White, yellow. Wien. Gart. Zeit. 1890, p. 362, fig. 80. A *Tazetta* form.
- *Taze'tta*. 1. March. Spain. 1759. Sibth. Fl. Gr. t. 358. The forms of this species are extremely numerous, and can be arranged in three groups thus:
- I. Perianth white; corona yellow.
- N. Cypri*, Swt. Fl. Gard. ser. 2, t. 92, *N. citrinus*, *N. floribundus*, *N. Trevianus*, B. M. t. 940, *N. ochroleucus*, B. M. t. 1298, *N. teretifolius*, Swt. Fl. Gard. ser. 2, t. 177.
- II. Perianth white; corona white.
- N. papyraceus*, B. M. t. 947, *N. dubius*, *N. canariensis*, *N. pachybolbos*, B. M. t. 6825.
- III. Perianth yellow; corona yellow.
- N. italicus*, B. M. t. 1188, *N. aureus*, *N. cupularis*, B. M. t. 925.
- N. Telamo'nus*. 1. Yellow. April. A form of *N. Pseudo-narcissus*.
- *grandiple'nus*. 1. Yellow. April.
- *ple'nus*. 1. Yellow. April.
- *te'nuior*. 1. White. May. 1789. B. M. t. 379. A form of *N. gracilis*.
- *Trewia'nus*. B. M. t. 940. A form of *N. Tazetta*.
- *tria'ndrus*. †. White. April. Portugal, 1629. Syns., *Ganymedes albus* and *Illus triandrus*.
- *calathi'nus*. Sulphur-yellow. Brittany. Red. Lil. t. 177.
- *cer'nuus*. Yellow. Syn., *N. triandrus* of B. M. t. 48.
- *co'ncolor*. Pale yellow. Syn., *Ganymedes concolor*. Swt. Fl. Gard. ser. 2, t. 113.
- *nu'tans*. Deep yellow. Syn., *N. trilobus*. B. M. t. 945.
- *pulche'rillus*. White, yellow. Syns., *N. triandrus*, var. *luteus*, B. M. t. 1262 and *Ganymedes pulchellus*, Swt. Fl. Gard. ser. 2, t. 99.
- *trilo'bus*. See *N. triandrus*, var. *nutans*.
- *tubiflo'rus*. 1. White, yellow. March.
- *variifo'rnis*. A form of *N. Pseudo-narcissus*.
- *Victo'rice*. Garden hybrid. 1891.
- *viridiflo'rus*. †. Greenish. September. Barbary. 1629. B. M. t. 1687.

Narcissus Fly. See Merodon.

Nardosta'chys. (From *nardos*, a sweet-scented shrub, and *stachys*, a spike. Nat. ord., *Valerianaceae*.)

Hardy perennial herb, said to be the spikenard of the ancients.

N. Jatama'nsi. 2. Pink. September. Himalayas. 1878. B. M. t. 6564.

Narthe'cium. (From *narthez*, a rod; referring to the flower-stems. Nat. ord., *Liliaceae*; Tribe, *Narthecieae*.)

Hardy herbaceous, Iris-like rushes, 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. †. Yellow. July. N. Amer. 1811.

— *ossi'fragum*. †. Yellow. July. Britain.

Na'rthex. (From *narthez*, the Greek name of an umbelliferous plant. Nat. ord., *Umbelliferae*.) Now united with **Ferula**.

N. Assafoe'tida. B. M. t. 5168. See *Ferula Assafoetida*. This plant is one of those from which the well-known medicinal gum is obtained.

— *Polla'ki*. See *Dorema ammoniacum*.

Naso'nia. (From *naso*, a nose; the column and anther, together, somewhat resemble a nose. Nat. ord., *Orchideae*.) See **Centropetalum**.

N. cinnabari'na, B. M. t. 5718, and *N. puncta'ta*. See **Centropetalum punctatum**.

Nastu'rtium. (From *nasus*, the nose, and *tortus*, tormented; referring to the hot, acrid smell. Nat. ord., *Cruciferae*; Tribe, *Arabideae*. 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 (*Tropaeolum*) Nasturtium. Hardy aquatics, with yellow

flowers, except *N. officinale*; seeds and division of the plant in common soil; but none are worth growing for their beauty. See WATER CRESS.

N. ainceps. 1. July. Britain.

— *erectum*. June. Siberia. 1837.

— *na'tans*. 4. July. Siberia. 1827.

— *officinale*. White. June. Britain. Water Cress.

Native oak. *Casuarina*.

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., *Rubiaceæ*; Tribe, *Naucleæ*. 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. Adina. See *Adina globiflora*.

— *Cada'mba*. 20. Orange. Bedd. Fl. Syl. t. 35.

— *cordiflora*. 40. Yellow. Bedd. Fl. Syl. t. 33.

Now included in *Adina*.

— *macrophylla*. Yellow. 1829.

— *orientalis*. 30. Yellow.

— *purpurea*. 10. Purple.

— *undulata*. 20. Yellow. 1820.

Naumbergia thyrsiflora. A synonym of **Lysimachia thyrsiflora**.

Nautilocalyx. (Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*.) See **Episcia**.

N. hastatus. A synonym of *Episcia bractescens*.

Navarre'ttia. (Named after a Spaniard. Nat. ord., *Polemoniaceæ*.) See **Gilia**.

N. cotulæfolia. See *Gilia cotulæfolia*.

— *eryngioides*. See *Gilia eryngioides*.

— *intertexta*. See *Gilia intertexta*.

— *pubescens*. See *Gilia pubescens*.

— *pungens*. See *Gilia pungens*.

— *squarrosa*. See *Gilia squarrosa*.

Navelwort. *Cotyledon*.

Navet, or Navew. (*Bra'ssica na'pus*.) The Colesat, or Rape.

Neapolitan Violet. *Viola odorata pallida plena*.

Nectarine. (*Persica la'vis*.) The following are the best varieties, and all require a south-aspect wall. We add the months in which the fruit ripens. *Hardwick Seedling*, August; *Ebruge*, August; *Violet hâtive*, August, September; *Late Newington*, September, October; *Pitmaston Orange*, September; *Humboldt*, August; *Rivers's white*, August, etc. For culture, see **Peach**.

Nectarosco'rdum. Honey Garlic. (From *nectar*, honey, and *skorodon*, garlic; referring to honey pores in the flower of this onion-like flower. Nat. ord., *Liliaceæ*; Tribe, *Alliææ*.) See **Allium**.

N. sc'culum. B. R. t. 1913. See **Allium Dioscorides**.

Nectou'xia. (Named after *M. Nectoux*, a German author. Nat. ord., *Solanaceæ*; Tribe, *Solanææ*. Allied to *Nicotiana*.)

Hardy herbaceous perennial. Division in spring; cuttings of shoots under a hand-light, in summer; rich, sandy loam.

N. formosa. 3. Yellow. July. Mexico. 1826.

Ne'ctria. A genus of minute Fungi, the best known species of which, *N. cinabari'na*, is of frequent occurrence on the branches of the Currant. It appears in the form of small knobs of a vermilion colour. On close examination these knobs will be found to be of two kinds, viz.: 1, Pale vermilion and smooth, which upon examination beneath a microscope will be found to consist of numerous slender filaments, at or near the tips of which are minute oblong bodies (*conidia*), which drop off and are capable of reproducing the plant. 2. Darker vermilion and rough. These also consist of numerous slender filaments, woven together and surrounding a cavity in each lobe, which communicates with the exterior by a minute pore. At the base of each cavity are numerous club-shaped cells, each containing eight spores, which escape on becoming mature, and also serve to reproduce the plant.

Ne'ctris pelta'ta. A synonym of **Cabomba aquatica**.

Needle furze. *Geni'sta anglica*.

Negro Fly. *Athalia*.

Negu'ndium americana'rum. A synonym of **Negundo aceroides**.

Negu'ndo. Box Elder. (Derivation is not known. Nat. ord., *Sapindaceæ*; Tribe, *Acerineæ*. Allied to the Maple.)

Hardy deciduous trees, with green flowers. Layers and seeds, which should be sown in autumn as soon as gathered; deep, moist, sandy loam. A short-lived tree, suitable for shrubberies and lawns.

N. aceroides. 40. May. North America. 1688.

Syns., *N. frazinifolium*, and *Negundium americanum*.

— *crispum*. 30. May. 1688.

— *laciniatum*. Leaves deeply cut.

— *variegatum*. Leaves variegated.

— *viola'ceum*. 30. May.

— *cissifolium*. 5-10. Japan. Syn., *Acer cissifolium*.

— *frazinifolium*. See *N. aceroides*.

— *niko'næe*. Japan. 1831.

Nei'llia. (After *Patrick Neill*, of Edinburgh. Nat. ord., *Rosaceæ*; Tribe, *Spirææ*. Syn., *Adenilenia*.)

Hardy shrubs, propagated by cuttings in sand under a bell-glass, or by seeds.

N. amurensis. 5. White. Summer. Amurland. Syn., *Spiræa amurensis*. Gfl. t. 489.

— *opulifolia*. 5. White. June. North America. 1690. Syn., *Spiræa opulifolia*.

- N. opulifolia aurea*. Leaves golden-yellow.
 — *rubifolia*. 6. White. Nepal.
 — *thyrsiflora*. 6. White. Nepal.
 — *Torre'sii*. 3. Rocky Mountains. G. and F.
 1889, ii. p. 4, fig. 84.

Ne'ja. (Probably the Mexican name. Nat. ord., *Compositæ*; Tribe, *Asteroidæc.*) United with *Hysterionica* in the Genera Plantarum.

A half-hardy herbaceous Composite, flowering in a bed or border from May to October. Seeds, divisions; common soil; protection in a pit in winter.

- N. gracilis*. 1. Yellow. Uruguay, not Mexico. 1828. Swt. Fl. Gard. ser. 2, t. 78. Syn., *Diplopappus stenophyllus*.

Neli'tris. (From *ne*, not, and *elytron*, a seed-case; referring to the berry having no partitions. Nat. ord., *Myrtacæ*; Tribe, *Myrtacæ*. Allied to the Pomegranate.)

Stove white-flowered, evergreen shrubs. Cuttings of half-ripened short shoots in sand, under a bell-glass, and in a gentle heat, in April or May; fibry loam, leaf-mould, peat, and sand, and a little charcoal to keep all open. Winter temp., 45° to 50°; summer, 60° to 85°.

- N. Jambosella*. 10. Society I. 1810.
 — *paniculata*. May. Moluccas. 1820.

Nelu'mbium. Water Bean. From *nelumbo*, the Indian name. Nat. ord., *Nymphaeacæ*; Tribe, *Nelumboneæc.*)

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 *lutium*, which are not unlike the sweet potato. Division of the root, either just before, but better still 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, 45° to 55°; when growing and approaching flowering, 70° to 95°.

- N. caespitum*. Pink. Caspian Sea. 1822. B. R. 1844, t. 14.
 — *flavescens*. Yellowish. June. Egypt. 1847.
 — *jamaicensis*. Pale blue. Jamaica. 1824.
 — *lutium*. Yellow. Carolina. 1810. B. M. t. 2753.
 — *speciosum*. Pink. July. India. 1787. B. M. t. 903.
 — — *roseum*. 3. Rose. June. India.
 — *Tamara*. Pink. Malabar. 1818.

Nema'stylis. (From *nema*, a thread, and *stylos*, a column; because of the slender style. Nat. ord., *Iridacæ*; Tribe, *Sisyrinchiacæ*.)

Half-hardy bulbs from N. America. For cultivation, see GLADIOLUS.

- N. acuta*. 3. Blue, yellow, black. California. 1875. B. M. t. 6666. Syn., *N. geminiflora*.
 — *caelestina*. 2. Bright blue. Florida and Carolina. Gf. t. 1081, fig. 1.

Nemata'nthus. (From *nema*, a thread, and *anthos*, a flower; the flowers of *longipes* hanging down from long, threadlike foot-stalks. Nat. ord., *Gesneracæ*; Tribe, *Cyrtandracæ*. Allied to *Columnæc.*)

Stove evergreen climber, 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. chloronema*. 1½. Scarlet. July. Organ Mountains. 1841. B. M. t. 4080.
 — *corticola*. Deep crimson. Tropical America. 1848. Syn., *N. ionema*. B. M. t. 4060.
 — *Guilleminia*. See *N. longipes*.
 — *ionema*. See *N. corticola*.
 — *longipes*. 2. Scarlet. December. Brazil. 1841. B. M. t. 4018. Syn., *N. Guilleminia*, *Columnæa grandiflora*, *C. longipedunculata* and *C. splendens*.

Nematoid Worms (*Anguillulidæc.*) A group of minute, thread-like worms, which attack the internal parts of many plants. Plants ascertained to be thus attacked should be burnt.

Nema'tus ribes'ii. The Gooseberry Saw-fly. See *Ribes*.

Neme'sia. (Name of a plant mentioned by Dioscorides. Nat. ord., *Scrophulariacæ*; Tribe, *Hemimeridæc.* Allied to *Hemimeris*.)

Natives of South Africa. Seeds sown in a slight holed 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. bicornis. 2. Purple. July. 1774.
 — *floribunda*. 1. White, yellow. July. B. R. 1838, t. 39.
 — *linearis*. 1. Rose. April. 1822.

- HERBACEOUS.
N. chamaerifolia. 2. Purple. June. 1787.
 — *cynanchifolia*. 1. Blue, yellow. Natal. 1879.
 — *caetens*. 2. Purple. June. 1798.
 — *frutescens*. 2. Yellow. May. 1816. Evergreen.

Nemopa'nthes. (From *nemos*, a grove, and *anthos*, a flower; it being generally found in groves. Nat. ord., *Ulicinacæ*. Allied to *Prinos*.)

An ornamental, hardy, deciduous, upright-growing shrub, very little known in England, but very desirable. It was called *Ulex canadensis* and *Prinos integrifolius*. 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 shrubby soil, but it will do better with an addition of sandy peat or leaf-mould.

- N. canadensis*. 3. May. N. Amer. 1812. Syn., *N. fascicularis*.

Nemo'phila. (From *nemos*, a grove, and *phileo*, to love; from their place of growth. Nat. ord., *Hydrophyllacæ*; Tribe, *Hydrophyllacæ*. Allied to *Hydrophyllum*.)

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 houghs, 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. atomaria*. $\frac{1}{2}$. White, purple. August. California. 1836. B. M. t. 3774.
 — *atropurpurea*. Ultramarine. 1884.
aurita. $\frac{1}{2}$. Purple. June. California. 1831. B. R. t. 1601.
insignis. $\frac{1}{2}$. Blue. August. California. 1833. B. M. t. 3485.
maculata. $\frac{1}{2}$. White, purple. June. California. 1848. Journ. Hort. Soc. III. p. 320.
Menziesii. The same as *N. atomaria*.

HERBACEOUS PERENNIALS.

- N. discoidalis*. Purple. June. N. Amer. 1843. Fl. Ser. t. 75.
paniculata. $\frac{3}{4}$. Pale blue. May. N. Amer. 1813.
parviflora. Blue. N. Amer. 1826.
phacelioides. 1. Blue. July. N. Amer. 1822. B. R. t. 740.

Neobenthamia. (From *neos*, new, and *Benthamia*; as a distinction from *Benthamia*, a genus now united with *Cornus*. Nat. ord., *Orchideæ*; Tribe, *Vandeeæ*.)

Stove orchid, with the habit of a bamboo.

- N. gracilis*. White. Zanzibar. G. C. 1891, x. p. 272, fig. 33. B. M. t. 7221.

Neodryas. (From *neo*, to assemble, and *dryos*, a wood; growing in woods or forests. Nat. ord., *Orchideæ*; Tribe, *Vandeeæ-Oncidieæ*.)

Stove epiphyte. For cultivation, see ONCIDIUM.

- N. densiflora*. Purplish. Fern. 1875.

Neottia. (From *neottia*, a bird's-nest; referring to the interlacing of the numerous roots. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Spirantheæ*. 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. æstivalis*. $\frac{1}{2}$. White. September. N. Amer. 1822.
autumnalis. $\frac{1}{2}$. White. September. Europe. 1800.
cernua. 1. White. July. N. Amer. 1796. B. M. t. 1563.
nidus avis. 1. Brown. May. Britain.

GREENHOUSE.

- N. australis*. $\frac{3}{4}$. Red. N. Holland. 1823. B. R. t. 602.
plantaginea. 1. Red. June. Nepaul. 1824.

STOVE.

- N. aphylla*. 1. Red. Pink. June. Trinidad. 1826. B. M. t. 2797.
bicolor. 1. White. February. Trinidad. 1823. B. R. t. 794.

- N. calcarea*. Greenish. W. Indies. B. M. t. 3403.

- *elata*. 2. Green. July. W. Indies. 1790. B. M. t. 2026.

- *glandulosa*. B. M. t. 842. See *Pontieva glandulosa*.

- *grandiflora*. White, green. April. St. Vincent. 1829. B. M. t. 2730.

- *macrantha*. White. March. W. Ind. 1827.

- *orchivodes*. Rose. November. Jamaica. 1826. B. M. t. 1036.

- *pieta*. 2. Green. April. Trinidad. 1805. B. M. t. 1562.

- *procera*. B. R. t. 639. See *Goodyera procera*.

- *pudica*. $\frac{1}{2}$. Pink. November. China. 1819.

- *speciosa*. Jacq. Ic. t. 600. See *Spiranthes*.

- *spiralis*. B. C. t. 931. See *Spiranthes æstivalis*.

Neottopteris. (From *neottia*, a bird's-nest, and *pteres*, a fern; founded on the Bird's-nest, or Spleenwort Fern. Nat. ord., *Filices*.) Now united with **Asplenium**.

Ferns, with brown spores, requiring rather shaded situations. See FERNS.

GREENHOUSE.

- N. australisica*. 3. Australia.
 — *nidus*. 4. E. Indies. 1822.
stipitata. May. E. Indies.
vulgaris. June. N. Holland. 1822.

STOVE.

- N. Grevillei*. May. E. Ind.
 — *muscivora*. May. E. Ind.
 — *philitidis*. May. E. Indies.

Nepe'nthes. Pitcher Plant. (From *nepenthes*, grief-assuaging; its supposed medicinal quality. Nat. ord., *Nepenthaceæ*.)

Stove evergreen climbers. Seeds, when they can be obtained, which require a strong, moist heat to vegetate in: but chiefly by little offsets, which come from near the base of the shoots; very fibry 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. albo-marginata*. Pitchers with a white ring at the mouth. Singapore. 1848.

- *ambilis*. Garden hybrid between *N. Hookeriana* and *N. Rafflesiana*.

- *ampullaria*. Green. June. Borneo. 1789. B. M. 5109.

- *pieta*. Pitchers light green, with reddish-brown stripes.

- *vittata major*. E. Indies. 1877.

- *angustifolia*. Pitchers green, with red spots. Sarawak. 1881.

- *atro-sanguinea*. Pitchers reddish-crimson, with yellow spots. G. C. 1882, xvii. p. 826, fig. 125.

- *bicalcarata*. Borneo. 1878. G. C. 1880, xiii. p. 201.

- *Burkei*. Pitchers green, with red blotches, wingless. Borneo. G. C. 1889, vi. p. 493, fig. 69.

- *excellentis*. Journ. Hort. ser. 3, xxi. p. 161, fig. 21.

- *prolifera*. Smaller than the type. 1890.

- *Cheloni*. Garden hybrid between *N. Doorniana* and *N. Hookeriana*.

- N. cincta*. Pitchers green and red, with purple blotches. Borneo. G. C. 1884, xxi. p. 576, fig. 110.
- *coccinea*. Pitchers crimson, speckled with yellow. Hybrid. G. C. 1882, xviii. p. 169, fig. 29.
- *compacta*. 1881.
- *Cou'rtii*. Pitchers green, with red spots. Garden hybrid. G. C. 1881, xvi. p. 844.
- *Curt'sii*. Pitchers dull green, mottled with purple. Borneo. G. C. 1887, ii. p. 689, fig. 133.
- *cylindrica*. Pitchers, pale green, with a very few dull crimson spots. Hybrid between *N. Veitchii* and *N. hirsuta*, var. *glabrescens*. G. C. 1887, ii. p. 521, fig. 103.
- *Dicksoniana*. Garden hybrid. G. C. 1888, iv. p. 541, fig. 78.
- *distillatoria*. Green. Ceylon. 1789. *N. distillatoria* of B. M. t. 2798 is *N. khasiana*.
- *rubra*. Pitchers blood-red.
- *Domina*. Pitchers deep green, with few spots. Garden hybrid.
- *Dormanniana*. Pitchers green, with dull crimson spots. Hybrid. G. C. 1882, xvii. p. 525.
- *excellentior*. Garden hybrid. 1883.
- *Findlayana*. Pitchers pale green, mottled with reddish-crimson. Garden hybrid.
- *Henryana*. Garden hybrid. 1881.
- *Hibberdii*. Garden hybrid. Fl. and Pom. 1883, p. 75.
- *hirsuta glabrescens*. Pitchers reddish, with green veins, or entirely green. Borneo. G. C. 1882, xvii. p. 398.
- *Hookeriana*. Pitchers green, with crimson spots. Sarawak. G. C. 1881, xvi. p. 812, fig. 157.
- *hybrida*. Pitchers dark green. Garden hybrid.
- *maculata*. Pitchers dark green, with reddish-purple streaks.
- *intermedia*. Pitchers green, with red spots. Garden hybrid. G. C. 1882, xvii. p. 178, fig. 29.
- *Kennedya*. Pitchers reddish. North Australia. 1879. G. C. 1882, xvii. p. 257, fig. 36.
- *khasiana*. Green, yellow. Pitchers green, with purplish marks. China. 1789. Syn., *N. distillatoria* of B. M. t. 2798.
- *laevis*. Java. 1848.
- *lanata*. Pitchers green. Borneo. 1876. This has been confused with *N. Veitchii*.
- *Lawrenciana*. Pitchers pale green, with numerous crimson spots. Hybrid between *N. phyllamphora* and *N. Hookeriana*. G. C. 1880, xiv. p. 40.
- *Lindleyana*. 8. Purple. Borneo. 1847.
- *Loddigésii*. Borneo. 1847.
- *madagascariensis*. Pitchers crimson. Madagascar. G. C. 1881, xvi. p. 685.
- *Mastersiana*. Pitchers claret-colour. Hybrid between *N. khasiana* and *N. sanguinea*. G. C. 1881, xvi. p. 473, fig. 148. Ill. Hort. t. 618.
- *Morganiana*. Pitchers bright red and pale green. Garden hybrid. 1882.
- *Northiana*. Pitchers green and red. Sarawak. G. C. 1881, xvi. p. 717, fig. 144.
- *Obrieniana*. Pitchers green and red. Borneo. Ill. Hort. t. 116.
- *Outramiana*. Pitchers yellowish green, with blood-red spots. Hybrid between *N. Sedeni* and *N. Hookeriana*. 1880. G. C. 1880, xiv. p. 41, fig. 10. Flor. Mag. t. 384.
- *Paradisæ*. Garden hybrid.
- *phyllamphora*. 6. Green, yellow. Pitchers bright green. July. China. 1820. B. M. t. 2629.
- N. Raflesiana*. Yellow, brown. Pitchers greenish-yellow, with brown marks. September. Singapore. 1845. B. M. t. 4285.
- *insignis*. Pitchers green, with purplish-brown marks. Borneo. G. C. 1882, xviii. p. 425.
- *ni-gro-purpurea*. Pitchers purplish-brown, with a few paler spots. Borneo. 1882.
- *Rajah*. Pitchers dull purple. Borneo. G. C. 1881, xvi. p. 492.
- *Ratcliffiana*. Pitchers green, with red spots. Hybrid between *N. Hookeriana* and *N. phyllamphora*.
- *robusta*. Hybrid between *N. Hookeriana* and *N. phyllamphora*. G. C. 1880, xiv. p. 40.
- *rubra*. Pitchers bright red. Ceylon. 1868.
- *rubromaculata*. Pitchers pale yellowish-green, with claret-red spots. G. C. 1882, xvii. p. 143, fig. 24.
- *rufescens*. Garden hybrid. G. C. 1888, iv. p. 669, fig. 95.
- *sanguinea*. Pitchers deep blood-red. East Indies. G. C. 1884, xxii. p. 18. This name has sometimes been used for *N. Veitchii*.
- *Sedeni*. Pitchers pale green, with numerous brownish-crimson spots. Garden hybrid.
- *stenophylla*. Pitchers green, with reddish-purple spots. Borneo. G. C. 1890, viii. p. 240.
- *Stewartii*. Garden hybrid.
- *superba*. Hybrid. 1881. Flor. Mag. t. 434. Perhaps synonymous with *N. Henryana*.
- *Veitchii*. Pitchers greenish. Borneo. Syn., *N. sanguinea* of G. C. 1881, xvi. p. 781, and *N. villosa* of B. M. t. 5080. It has also been confused with *N. lanata*.
- *Viellardi*. New Caledonia. 1876.
- *villosa*. Pitchers dull green, with reddish-brown blotches. Borneo. 1855. *N. villosa* of B. M. t. 5080 is *N. Veitchii*.
- *Williamsii*. Pitchers green, with blood-red spots. Hybrid between *N. Sedeni* and *N. Hookeriana*. G. C. 1880, xiv. p. 40.
- *Wrightiana*. Pitchers pale green, with crimson spots. Hybrid. G. C. 1882, xvii. p. 143, fig. 23.

Nepeta. Cat Mint. (Named from *Nepet*, a town in Tuscany. Nat. ord., *Labiata*; Tribe, *Nepeteæ*. 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, *Nepeta glechoma*, 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. amethystina*. 1½. Blue. July. South Europe. 1816.
- *cærulea*. 1½. Blue. May. 1777.
- *croatica*. 1½. White. July. Hungary. 1821.
- *diffusa*. 1½. Purple. July. Siberia. 1824.
- *grandiflora*. 6. Blue. July. Caucasus. 1817.
- *graveolens*. 1½. Purple. July. South Europe. 1804.
- *hederaea*. 1. Blue. May. Britain.
- *rosea*. ½. Rose. May. England.
- *variegata*. ½. Blue. May. England.

- N. hirsuta*. 2. Pink. May. Hungary.
 — *imbricata*. 2. Blue. July. Spain. 1820.
 — *kokamirica*. 1. Blue. 1879. Gfl. t. 1030.
 — *latifolia*. 4. Purple. July. Pyrenees. 1816.
 — *longiflora*. 2. Violet. July. Persia. 1802. B. M. t. 923.
 — *macroura*. 4. White, purple. July. Siberia. 1820.
 — *malabarica*. See *Anisomeles malabarica*.
 — *marifolia*. See *Micromeria marifolia*.
 — *marrubioides*. 1½. Red. July.
 — *multibracteata*. 3. Purple. July. Algiers. 1817.
 — *Mussi*'ni. 2. Violet. July. Siberia. 1804.
 — *Nepetella*. 1. Red. July. South Europe. 1758.
 — *pannonica*. 4. Red. September. Hungary. 1833.
 — *scordatis*. 1½. Blue. July. N. Africa. 1817.
 — *sibirica*. 1. Purple. July. Siberia. 1804.
 — *spicata*. ½ to 1. Purple, white. September. W. Himalaya. 1878.
 — *suaveolens*. 1½. Blue. July. 1817.
 — *teucriifolia*. 1½. Purple. July. Armenia. 1816.
 — *tuberosa*. 2. Violet. July. Spain. 1683.
 — *violacea*. 2. Blue. August. Spain. 1723.

Nephelaphyllum. (From *nephele*, a cloud, and *phyllon*, a leaf; on account of the marks upon the leaves. Nat. ord., *Orchidaceæ*; Tribe, *Epidendree-Bleticeæ*. Syn., *Cytheris*.)

Small stove orchids. See ORCHIDS.

- N. pulchrum*. ½. Brown, yellow. Java. 1860. B. M. t. 5332.
 — *scapigerum*. Yellow, purple. Borneo. 1863. B. M. t. 5390.

Nephe'lium. (An ancient name for Burdock; applied in reference to the similarity of the heads of the flowers and seeds. Nat. ord., *Sapindaceæ*; Tribe, *Sapindaceæ*. Allied to *Cupania*.)

Stove evergreen fruit-trees. Seed sown in a hotbed in spring; layers and cuttings of half-ripened shoots in sandy soil, under a bell-glass; sandy loam and dried leaf-mould. Winter temp., 45° to 55°; summer, 60° to 80°.

- N. Litchi*. 15. White. May. China. 1786.
 — *Longana*. 20. White. May. China. 1786. B. M. t. 4096. This belongs to *Euphoria*, which is retained as a distinct genus in the Genera Plantarum.
 — *verticillata*. See *Sapindus Danura*.

Nephra'ndra. A synonym of *Vitex*.

Nephra'nthera. A synonym of *Renanthera*.

Nephródium. (From *nephros*, a kidney; the shape of the spore-cases. Nat. ord., *Filices*.) See also *Lastrea*.

For culture, see FERNS.

- HARDY.
N. aculeatum. 2. Brown. June. Britain.
 — *acrostichoides*. 1½. Brown. July. N. Amer.
 — *æmulum*. 1. Britain and Madeira. Syns., *N. foeniculi* and *Lastrea recurva*.
 — *angulare*. ½. Brown. July. Hungary. 1819.
 — *Barometz*. Yellow. Tartary. 1824.
 — *cristatum*. 1½. Brown. June. England.

- N. decursivo-pinnatum*. 1. Japan.
 — *erythrosorum*. 2. Japan. Syn., *Lastrea erythrospora*.
 — *filix-mas*. 3. Brown. June. Britain. Syn., *Lastrea filix-mas*. The forms of this are endless.
 — *fragrans*. ½. Brown. July. Siberia. 1820.
 — *Goldiana*. 2. Brown. August. N. Amer.
 — *hirtipes*. 3. Himalayas.
 — *lancastrænsis*. Yellow. July. N. Amer. 1825.
 — *lobatum*. 2. Brown. June. England.
 — *lonchitis*. ½. Brown. May. Britain.
 — *asprella*. 1. Brown. July. N. Amer.
 — *marginale*. 2. Brown. June. N. Amer. 1772.
 — *noveboracænsis*. 1½. Brown. July. N. Amer. 1812.
 — *obtusum*. Yellow. June. N. Amer. 1827.
 — *oreopteris*. 3. Brown. July. Britain.
 — *spinulosum*. 1. Brown. June. Britain. This has numerous varieties.
 — *thelypteris*. 1. Brown. July. Britain.

GREENHOUSE.

- N. catopteron*. 8. Cape Colony.
 — *coriaceum*. 1. Brown. June. Van Diemen's Land. 1821.
 — *Cunninghamii*. 1½. Brown. July. New Zealand.
 — *cyathoides*. 4. Sandwich Islands.
 — *decompositum*. ½. Brown. June. N. Holland. 1820.
 — *gabelium*. Syn., *Lastrea giabella*.
 — *drepanum*. 2. Brown. July. Madeira. 1837.
 — *elongatum*. 2. Brown. July. Madeira. 1779.
 — *inæquale*. 2. South Africa.
 — *intermedium*. 4. North India.
 — *latevrens*. 3. Brown. Madeira.
 — *lucens*. 1. Brown. August. Mauritius. 1831.
 — *podophyllum*. 2. Japan.
 — *rigidum*. ½. Brown. July. South Europe. 1816.
 — *Sieboldii*. 1. Japan.
 — *sparsum*. 2. N. India.
 — *truncatum*. 3. N. India. 1869.
 — *nitidum*. 2. Brown. August. N. Holland. 1793.

STOVE.

- N. abortivum*. 2. Java. 1857.
 — *abruptum*. Yellow. July. Isle of Luzon.
 — *amboinænsis*. 2. Philippine Islands.
 — *arbuscula*. 1½. Ceylon. Syn., *N. Hookeri*.
 — *articulatum*. 5. Ceylon. 1846.
 — *augeænsis*. Yellow. June. Cuba. 1841.
 — *auriculatum*. ½. Brown. July. E. Ind. 1793.
 — *Blumei*. Yellow. July. E. Ind. 1840.
 — *canæscens*. Brown, yellow. May. Isle of Luzon.
 — *caudiculatum*. Yellow. July. Isle of Luzon.
 — *chrysolobum*. 1. Brazil. 1840. Syn., *Lastrea chrysoloba*.
 — *cicutarium*. 2. Tropics. Syn., *Sagenia cicutaria*.
 — *cordifolium*. 1. Brown. July. Jamaica. 1824.
 — *crinitum*. 1. Brown. August. Mauritius. 1831.
 — *Cumingii*. 3. Yellow. February. Malacca. 1839.
 — *cuspidatum*. 3. India.
 — *decurrens*. 2-4. Tropical Asia. Syn., *Sagenia decurrens*.
 — *deltoidum*. 2. West Indies. Syn., *Lastrea deltoidea*.

- N. edule*. Yellow. July. Nepaul. 1826.
 — *exte'nsum*. 4. Ceylon.
 — *glandulo'sum*. Yellow. July. Isle of Luzon. 1840.
 — *hippocre'pis*. 2. Brown. May. Jamaica.
 — *hirsu'tum*. Brown, yellow. May. Isle of Luzon. 1842.
 — *Hook'ri*. See *N. arbuscula*.
 — *ind'o'sum*. 2. Polynesia. 1830. Syn., *Lastrea invida*.
 — *Kaulfu'ssii*. 1½. West Indies and Brazil.
 — *Leuzea'na*. 8. Philippines. 1874. Syn., *Pteonemia Leuzeana*.
 — *longicau'le*. New Grenada. 1881.
 — *lu'cidum*. Madagascar. 1877.
 — *mo'le*. 2. Yellow. July. S. Amer. 1820. This has numerous varieties.
 — *mucrona'tum*. 2. Brown. July. Jamaica. 1820.
 — *odora'tum*. 2. Tropical Asia. Syn., *N. eriocarpum*.
 — *Ota'ria*. 2. Philippine Islands.
 — *pa'lidi-ve'nium*. 3. Guinea.
 — *pa'lidum crista'tum*. Fronds crested. 1839.
 — *pahu'stre*. 4. Brazil.
 — *para'siticum*. 1. Brown. June. E. Ind. 1824.
 — *pa'tens*. Demerara.
 — *penni'gerum*. 6. Yellow. January. W. Ind.
 — *platyphy'lum*. Yellow. June. S. Amer. 1826.
 — *proli'ferum*. 1. Brown. Brazil.
 — *propi'nquum*. 2. Brown. August. E. Ind. 1793.
 — *ptero'ides*. 3. Tropical Asia. 1847.
 — *pube'scens*. Brown. July. Jamaica. 1817. Syn., *Pheopteris villosa*.
 — *pu'ngens*. 1. Yellow. January. W. Ind.
 — *refra'ctum*. 2. Brazil.
 — *Richa'rdsii multi'fida*. 3. South Sea Islands. 1881.
 — *Rodrigasia'num*. Samoa. III. Hort. t. 442.
 — *sa'nctum*. 1. West Indies. Syn., *Lastrea sancta*.
 — *se'rra*. 2. Brown. July. Jamaica. 1819.
 — *simplicifo'lium*. Yellow. E. Ind. 1840.
 — *subquinquefidum*. 1. S. Amer. Syns., *N. funestum*, *N. Vogelii*, and *Lastrea pilosissima*.
 — *te'rminans*. Yellow, brown. July. E. Ind.
 — *trunca'tum*. Sandwich Islands. 1869.
 — *tubero'sum*. 1½. Yellow. January. W. Ind.
 — *va'lde-pilo'sum*. New Grenada. 1881.
 — *venulo'sum*. 5. Fernando Po.
 — *venu'stum*. Jamaica.
 — *vesti'tum*. 3. South Brazil. Syns., *N. Raddianum* and *Lastrea vestita*.
 — *villo'sum*. 3. July. W. Ind. 1793.
 — *Voge'lii*. See *N. subquinquefidum*.

Nepbro'lepis. (From *nephros*, a kidney, and *lepis*, a scale; referring to the covering of the seed, or spore-cases. Nat. ord., *Filices*.)

Stove ferns, with yellow spores. See FERNS.

- N. acumina'ta*. June. W. Indies.
 — *acu'ta*. 3. E. Indies. Syns., *N. biserrata*, *N. ensifolia*, *N. punctulata*, and *N. splendens*.
 — *biserra'ta*. See *N. acuta*.
 — *corda'ta compa'cta*. 2. 1890.
 — *cordifo'lia*. 2. September. Tropical America. 1841. Syn., *N. tropicala*.
 — — *pectina'ta*. 2. Tropical America. 1841. Syn., *N. pectinata*.
 — *davallio'ides*. 4. Malay Archipelago. 1852.
 — — *fu'reans*. Polynesia. 1873.
 — *Duffi*. Duke of York Island. 1878.
 — *ensifolia*. See *N. acuta*.
 — *exalta'ta*. 4. Tropical America. 1793. Syn., *N. volubilis*.

- N. exalta'ta hirsu'tula*. June. Covered with brownish down. Syn., *N. hirsutula*.
 — *falcifo'rmis*. 2. Borneo.
 — *hirsu'tula*. See *N. exaltata*, var. *hirsutula*.
 — *obli'tera'ta*. See *N. ramosa*.
 — *pectina'ta*. See *N. cordifolia*, var. *pectinata*.
 — *phu'na*. Madagascar. 1873.
 — *punctula'ta*. See *N. acuta*.
 — *ramo'sa*. 1. Tropics of Old World. Syns., *N. obli'tera'ta* and *N. trichomanoides*.
 — *rufe'scens tripinnati'fida*. Tropical America. G. C. 1887, i. p. 476, fig. 90.
 — *sple'ndens*. See *N. acuta*.
 — *trichomano'i'des*. See *N. ramosa*.
 — *tubero'sa*. See *N. cordifolia*.
 — *volu'bilis*. See *N. exaltata*.

Nephrospe'rma. (From *nephros*, a kidney, and *sperma*, a seed. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

An elegant stove palm. Rich loamy soil. Seeds. *N. Va'n Houttea'na*. 25. Seychelles. 1868. Syns., *Areca nobilis* and *Oncosperma Van Houtteana*.

Nephty'tis. (After *Nephtys*, the wife of Typhon. Nat. ord., *Aroideæ*. Allied to *Richardia*.)

Stove aroids, requiring a hot, moist atmosphere, and light, rich soil.

- N. libe'rica*. Liberia. 1881.
 — *pictura'ta*. 2. Congo. 1887.

Neptu'nia. (After *Neptune*, the mythological deity of the sea; a water-plant. Nat. ord., *Leguminosæ*; Tribe, *Adenanthereæ*. Allied to *Desmanthus*.)

Stove water-plant, with pinnate, sensitive leaves like a *Mimosa*; seeds in strong heat; cuttings and divisions. Winter temp., 50° to 60°; summer, 60° to 90°.

- N. ple'na*. White, yellow. August. Mexico. 1733. B. M. t. 4695. Syn., *N. polyphylla*.

Nerine. (The daughter of *Nerius*, Nat. ord., *Amaryllidææ*; Tribe, *Amaryllææ*. Allied to *Brunsvigia*.)

Greenhouse bulbs, from South Africa, except when otherwise mentioned. 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 genera 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. ama'bilis*. Rosy. Hybrid between *N. pudica* and *N. humilis*. 1839.
 — *angustifo'lia*. See *N. flexuosa*, var. *angustifolia*.
 — *atrosangu'nea*. Hybrid between *N. Plantii* and *N. flexuosa*. 1882.
 — *Ca'mi*. Hybrid between *N. curvifolia* and *N. undulata*. 1832.
 — *cinnabari'na*. Hybrid between *N. Fothergillii* and *N. flexuosa*.
 — *coru'sca*. See *N. sarniensiis*, var. *corusca*.

- N. curvifolia*. 1. Bright scarlet. September. Cape Colony. 1788. Syn., *Amaryllis curvifolia*. Jacq. H. Schoenb. t. 64.
- *Fothergillii*. Crimson to scarlet. Syn., *Amaryllis Fothergillii*. Andr. Rep. t. 163.
- *e'legans*. Hybrid between *N. flexuosa* and *N. rosea*.
- *erube'scens*. Hybrid between *N. flexuosa* and *N. undulata*.
- *excellens*. Hybrid between *N. flexuosa* and *N. humilis*, var. *major*. Flor. and Pom. t. 567.
- *filifo'lia*. Bright red. October. Orange Free State. 1879. B. M. t. 6546.
- *flexuo'sa*. 4. Pink. September. Cape Colony. 1793. Syn., *Amaryllis flexuosa*. Jacq. H. Schoenb. t. 67.
- *angustifo'lia*. Pink. Orange Free State. 1835. Syns., *N. angustifolia* and *N. pulchella*, var. *angustifolia*. Ref. Bot. t. 329.
- *pulche'lla*. Pale pink, rose. B. M. t. 2407.
- *Sanderso'ni*. Perianth segments less crisped. Transvaal. 1885.
- *Fotherg'illii*. See *N. curvifolia*, var. *Fothergillii*.
- *Haylo'ckii*. Hybrid between *N. curvifolia* and *N. pulchella*.
- *hu'milis*. 2. Red. June. Cape Colony. 1795. Syn., *Amaryllis humilis*. Jacq. H. Schoenb. t. 629.
- *hu'milis-undula'ta*. Garden hybrid.
- *japo'nica*. A synonym of *Lycoris radiata*.
- *lu'cida*. Red. Cape Colony. Syns., *Amaryllis laticoma*, B. M. t. 497, *A. lucida*, and *Brunsvigia lucida*.
- *Manse'ttii*. Rose-red. Hybrid between *N. flexuosa* and *N. Fothergillii*. 1886.
- *margin'a'ta*. †. Bright scarlet. Cape Colony. Syns., *Amaryllis marginata*, Jacq. H. Schoenb. t. 65, *Brunsvigia marginata*, *Eisena marginata* and *Imhofia marginata*.
- *Meadoba'nkii*. Hybrid between *N. sarniensis* and *N. Fothergillii*.
- *Mitcha'mia*. Hybrid between *N. curvifolia* and *N. undulata*.
- *Moo'rei*. Bright scarlet. Cape Colony. 1886.
- *pancratio'des*. 2. White. Natal. 1891.
- *Pla'ntii*. See *N. sarniensis*, var. *Plantii*.
- *pu'dica*. 1‡. White, pink. Autumn. Cape Colony. 1868. B. M. t. 5901.
- *Elwe'sii*. Pale rose.
- *pulche'lla*. See *N. flexuosa*, var. *pulchella*.
- *angustifo'lia*. See *N. flexuosa*, var. *angustifolia*.
- *pu'mila*. 1. Scarlet. 1890.
- *ro'sea*. See *N. sarniensis*, var. *rosea*.
- *ro'seo-cr'ispa*. Hybrid between *N. undulata* and *N. flexuosa*.
- *sarnie'nsis*. 1. Red. September. Cape Colony. 1659. Syns., *N. insignis*, *Amaryllis sarniensis*, B. M. t. 294, *A. dubia*, *A. Jacquinii* and *Hæmanthus sarniensis*. The Guernsey Lily.
- *coru'sca*. 1. Scarlet. July. Cape Colony. 1809. Syns., *Amaryllis corusca*, and *A. humilis* of B. M. t. 1089.
- *Pla'ntii*. Dull crimson. Syn., *N. Plantii*.
- *profu'sa*. Bright scarlet. August.
- *ro'sea*. Rose-red. B. M. t. 2124. Syn., *N. rosea*.
- *venu'sta*. Bright scarlet. September. B. M. t. 1090.
- *Spyo'rrhthia*. Hybrid between *N. venusta* and *N. undulata*.
- *undula'ta*. 1. Pink. May. Cape Colony. 1767. Syns., *N. crispa*, *Amaryllis undulata*, B. M. t. 369, and *Hæmanthus undulatus*.

N. undula'ta ma'jor. Flowers larger.
— *venu'sta*. See *N. sarniensis*, var. *venusta*.

Ne'rium. Oleander. (From *neros*, moist; referring to their native places of growth. Nat. ord., *Apocynaceæ*; Tribe, *Echitidææ*.)

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. odo'rum*. 6. Pale red. July. E. Ind. 1633. B. M. t. 1799 and t. 2032.
- *ca'rneum*. 6. Pink. July. E. Ind. 1633.
- *ple'num*. 5. Pale red. July. E. Ind. 1633.
- *Olea'nder*. 3. Red. August. South Europe. 1596. B. C. t. 686.
- *a'lbum*. 8. White. August. South Europe. 1596.
- *spe'ndens*. 7. Red. August. South Europe. 1814.
- *variega'tum*. 8. Striped. August. South Europe.
- *thyrifo'rum*. 5. Pink. July. Nepaul. 1830. Paxt. Mag. iii. p. 73.
- *tincto'rium*. Wight Ic. t. 444. A synonym of *Alstonia scholaris*.

Ne'rtera. (From *nerteros*, lowly; in reference to the habit of the species. Nat. ord., *Rubiaceæ*; Tribe, *Anthospermeæ*. Allied to *Coprosma*.)

Hardy alpine perennial herb. The flowers are very insignificant, but when in fruit, and the berries are produced very freely, it is a very charming and attractive plant. Seeds; divisions. Light sandy loam.

- N. depr'essa*. One-twelfth. Green; berries orange. Antarctic Mountains. 1868. A charming rockwork plant. B. M. t. 5799.

Nesæ'a. (The name of a sea-nymph. Nat. ord., *Lythraceæ*; Tribe, *Lythreæ*. Syn., *Heimia*.)

Half-hardy evergreen shrubs, except *N. triflora*, which is an annual. Divisions in spring, as fresh growth commences; cuttings of young shoots in sandy soil, under a bell-glass; sandy loam and fibry peat. Winter temp., 45° to 55°; summer, 60° to 80°.

- N. myrtifo'ra*. 5. Yellow. South America. 1826. Syn., *Heimia myrtifolia*.
- *salicifo'lia*. 5. Yellow. August. Mexico. 1821. Syn., *Heimia salicifolia*.
- *grandifo'ra*. 5. Yellow. September. Syn., *Heimia salicifolia*, var. *grandiflora*, B. R. 1841, t. 40.
- *trifo'ra*. 2. Blue. August. Mauritius. 1802.

Nesopa'nax. (From *nesos*, an island, and *Panax*. Nat. ord., *Araliaceæ*.)

Small stove tree, with large digitate leaves on long stalks.

- N. vitie'nsis*. Green. Fiji Islands. 1887.

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 hot-house, 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.

Nettle-tree. *Celtis*.

Neuma'nnia. (Commemorative. Nat. ord., *Bixineæ*.)

N. arcuata. 3. Carmine, yellow. Andes of Columbia. 1886.
— *ni'gra*. Rev. Hort. 1881, p. 390. See *Pitcairnia*.

Neuro'dium. (From *neuros*, a nerve; the fronds being strongly veined. Nat. ord., *Filices—Polypodiaceæ*.)

Stove fern. See **FERNS**.
N. lanceolata. W. Indies.

Neurola'na. (From *neuros*, a nerve, and *laena*, a covering; the involucreal leaves are three nerved. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)

Warm greenhouse shrub. Loam, leaf-mould, and sand.

N. lobata. 2. Yellow. June. West Indies. Syn., *Calea lobata*, B. M. t. 1734.

Neviu'sa. (Derivation uncertain. Nat. ord., *Rosaceæ*; Tribe, *Spirææ*.)

N. alabamensis. White. May. Alabama. 1879. B. M. t. 6806.

Newbou'ldia. (In honour of the Rev. W. W. Newbould, an energetic British botanist. Nat. ord., *Bignoniaceæ*.)

A stove tree. Culture the same as for **TECOMA**.

N. laevis. Pale rose or purple. Tropical Africa. Syn., *Spathodea laevis*, B. M. t. 4537. Probably *Spathodea pentandra*, B. M. t. 3681, also belongs here.

New Jersey Tea. *Ceano'thus america'nus*.

New Zealand Flax. *Pho'rmium te'nax*.

New Zealand Spinach (*Tetrago'nia expan'sa*) 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 out 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 back in a shady spot.

Nica'ndra. (After *Nicander*, who lived about 150 A.D., and wrote on medicine and plants. Nat. ord., *Solanaceæ*.)

Hardy annual herb. Seeds in the open border in April; the seedlings to be thinned out, when large enough, to a considerable distance apart. *N. physaloides*. 2-4. Blue. Autumn. Peru. 1759. B. M. t. 2458.

Nicker-tree. *Guilandina*.

Nicotia'na. Tobacco. (Named after *Nicot*, a French ambassador in Portugal, who first obtained seeds from a Dutch merchant. Nat. ord., *Solanaceæ*; Tribe, *Cestrineæ*.)

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 *tabacum* and *macrophylla*, will yield their large leaves for fumigating purposes; *glauca* makes a fine appearance against a wall.

ANNUALS.

- N. affinis*. 2-3. White, greenish. G. C. 1881, xvi. p. 141, fig. 31.
 — *alata*. 2. Pink. September. N. America. 1829.
 — *angustifolia*. 4. Pink. August. Chili. 1819.
 — *brasiliensis*. 4. Rose. July. Brazil. 1825.
 — *chinensis*. 6. Pink. August. China. 1819.
 — *colosseae*. 7-10. Leaves reddish-violet when young. Brazil. 1888.
 — *dilatata*. 3. Pink. August. 1820.
 — *fragrans*. 3½. White. Isle of Pines.
 — *glutinosa*. 4. Scarlet. August. Peru. 1759. Andr. Rep. t. 484.
 — *longiflora*. 3. White. August. Buenos Ayres. 1832. Swt. Fl. Gard. ser. 2, t. 196.
 — *macrophylla*. 6. Pink. July. America.
 — *micrantha*. 1. Green, white. July.
 — *multibractea*. 2. White. July. Columbia. 1826. B. R. t. 1057.
 — *na'na*. B. R. t. 833. See *Hesperochiron californica*.
 — *nepalensis*. 4. Rose. July. Nepaul. 1829.
 — *noctiflora*. 2. Pink. August. Chili. 1826. B. M. t. 2785.
 — *persica*. 3. White, green. August. Persia. 1831. B. R. t. 1592. Persia or Shiraz Tobacco.
 — *petiolaris*. 4. Rose. July. S. Amer. 1829.
 — *plumbaginifolia*. 2. White. May. America. 1816.
 — *quadrivervialis*. 1. White. July. N. Amer. 1811. B. M. t. 1778.
 — *rotundifolia*. 2. White. August. Swan River. 1837.
 — *sanguinea*. 4. Crimson. July. South Brazil. 1829.
 — *tabacum*. 4. Pink. July. America. 1570. Bent. and Tr. t. 191.
 — — *alipes*. 4. Pink. July. S. Amer. 1570.
 — — *attenuata*. 4. Pink. July. S. Amer. 1570.
 — — *fruticosa*. 2. Pink. S. America.
 — — *gracilipes*. 4. Pink. July. S. Amer. 1570.
 — — *lingua*. 4. Pink. July. S. Amer. 1750.
 — *macrophylla*. 7. Pink. July. S. Amer. 1570.
 — — *pallidescens*. 4. Pink. July. S. Amer. 1570.
 — — *serotina*. 4. Pink. July. S. Amer. 1570.
 — — *Verdan*. 4. Pink. July. S. Amer. 1570.
 — *viscosa*. 3. Pink. July. Buenos Ayres. 1824.
 — *wigandii* des. Yellowish-white. Columbia. 1874.
 — *Ybarreensis*. 2. Pink. August. S. Amer. 1823.
- PERENNIALS.
N. acuminata. 3. Greenish. Summer. Valparaiso. B. M. t. 2919. Syn., *Petunia acuminata*.

- N. fruticosa*. 4. Pink. July. China. 1699. Evergreen.
 — *glauca*. 20. Yellow. August. Buenos Ayres. 1827. Evergreen. B. M. t. 2837.
 — *Langsdorffii*. 6. Yellowish-green. August. Brazil. 1819. B. M. t. 2221.
 — *undulata*. 2. White. July. N. S. Wales. 1800. B. M. t. 673.
 — *vincoflora*. 2. White. August. S. Amer. 1820.

Nidularium. (From *nidus*, a nest; referring to the nest form in which the leaves are arranged. Nat. ord., *Bromeliaceae*; Tribe, *Bromelieae*.) United with **Karatas** in the Genera Plantarum.

Stove perennials. Suckers. Sandy loam and peat. Summer temp., 60° to 85°; winter, 55° to 60°.

- N. acanthocarter*. Brazil. Belg. Hort. 1834, p. 140, t. 9.
 — *ampullaceum*. Brazil. 1880.
 — *Bino'ti*. White. Winter. Brazil. 1877.
 — *bivittata*. White. S. America. 1861. Syn., *Bilbergia bivittata*.
 — *cyaneum*. Blue, reddish-violet; bracts blood-red. Brazil. 1874.
 — *fulgens*. Brazil. 1859.
 — *Innocentii*. White. Brazil. 1862.
 — *Johannis*. Brazil. 1884.
 — *Laurentii*. Blue; leaves brown-variegated. S. America. 1867.
 — *Lindeni*. See *Canistrum eburneum*.
 — *Makoyanum*. Whitish, violet. Tropical America. 1887.
 — *Meyendorffii*. Blue. Brazil. 1860.
 — *picura*. Brazil. 1859.
 — *Pinetanum*. Blue. Brazil. 1860.
 — *priniceps magnificum*. Lower leaves vinous-purple, upper green with rosy tips. Garden variety. 1890. Gf. t. 1223.
 — *rutilans*. Vermilion. Brazil. 1885.
 — *Scheremetievii*. ¾. Blue; bracts red. Syn., *Caraguata serrata*.
 — *spectabile*. Violet, red. Brazil. 1873.
 — *striatum*. Leaves green, with white and creamy-yellow stripes. 1888.

Nierembergia. (Named after J. E. Nieremberg, a Spanish Jesuit. Nat. ord., *Solanaceae*; Tribe, *Salpiglossideae*. 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 eighteen to twenty-four 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. aristata*. ½. White, purple. July. Panama. 1832. Annual. Swt. Fl. Gard. ser. 2, t. 265.
 — *Atkinsiana*. Swt. Fl. Gard. ser. 2, t. 268. See *Petunia*.
 — *calycina*. ¾. White. July. Uruguay. 1834. Herbaceous. B. M. t. 3371.
 — *filicarinata*. I. Lilac. May. Buenos Ayres. 1832. Herbaceous. B. R. t. 1649.
 — *frutescens*. White, blue. Buenos Ayres. 1867.

- N. graecilis*. White, purple. July. Uruguay. 1831. Herbaceous. B. M. t. 3108.
 — *intermedia*. Swt. Fl. Gard. ser. 2, t. 237. See *Petunia intermedia*.
 — *linariifolia*. †. Whitish. July. Uruguay. 1831. Evergreen.
 — *phoenicea*. Swt. Fl. Gard. ser. 2, tt. 193 and 354. See *Petunia violacea*.
 — *rivularis*. Pale cream. July. River La Plata. 1866. B. M. t. 5608.
 — *Vet'chii*. Pale lilac. Tucuman, S. America. 1866. B. M. t. 5599.

Nigella. Fennel-Flower. (From *niger*, black; and the colour of the seeds. Nat. ord., *Ranunculaceæ*; Tribe, *Helleboreæ*. Allied to *Aquilegia*.)

Hardy annuals. Seeds in the open ground any time after the middle of March.

- N. aristata*. 2. Blue. August. Athens. Sibth. Fl. Gr. t. 510.
 — *ciliaris*. 1. Yellow. July. Levant.
 — *corniculata*. 1. Yellow. July. 1820.
 — *damascena*. 1½. Lilac, blue. July. South Europe. 1570. B. M. t. 22. Sibth. Fl. Gr. t. 509.
 — — *fl're-ple'no*. 1½. Lilac, blue. July. South Europe. 1570.
 — *hispanica*. 1½. Brown, white. July. Spain. 1629. B. M. t. 1265.
 — *orientalis*. 1½. Yellow. July. Syria. 1699. B. M. t. 1264.
 — *sativa*. 1½. Yellow. July. Egypt. 1548. Sibth. Fl. Gr. t. 511.
 — — *citrina*. 1½. Pale blue. July. South Europe.
 — — *cretica*. 1½. Pale blue. July. Crete.
 — — *indica*. 1. Pale blue. July. E. Ind.

Nightshade. *Solanum*.

Nightshade Enchanter's. *Circæa*.

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.

Nipa. (The Moluccan name. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

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 temperature.

N. fruticans. 10. White. E. Ind. 1822.

Niphæa. (From *niphos*, snow; flowers snow-white. Nat. ord., *Gesneraceæ*; Tribe, *Gesnerææ*. 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. albo-lineata. B. M. t. 4282. See *Phinæa albo-lineata*.

- *argyreneura*. Fl. Ser. t. 823. See *Phinæa albo-lineata*, var. *reticulata*.
 — *cu'preo-virens*. White. September. 1860.
 — *graecilis*. White. S. America. 1838.
 — *oblonga*. †. White. September. Guatemala. 1841.
 — *Roe'zlii*. White. Tropical America. 1877.
 — *rubida*. Fl. Ser. t. 251. See *Phinæa rubida*.
 — *rubra*. †. November. 1846.

Nipho'bolus. (From *niphobolus*, covered with snow; referring to the white covering of the spore-cases. Nat. ord., *Filices—Polypodiaceæ*.) A section of **Polypodium**.

Stove ferns, with brown spores. See **FERNS**.

- N. acrostichoides*. September. Isle of Luzon.
 — *adna'scens*. †. May. E. Ind. 1824.
 — *albicans*. 1. July. Ceylon.
 — *bicolor*. August. Malacca.
 — *collybens*. †. May. N. Holland. 1820.
 — *costatus*. July. Ceylon. 1824.
 — *focculosus*. August. Manilla. 1841.
 — *Gardneri*. Ceylon.
 — *glaber*. July. Malacca.
 — *lineare*. †. May. Japan. 1822.
 — *lingua*. †. May. Japan. 1817.
 — *corymbiferus*. Fronds much divided at apex. Japan. 1862.
 — *nummularifolius*. May. Isle of Luzon.
 — *pertus*. †. May. China. 1821.
 — *rupestris*. †. May. N. Holland. 1824.

- N. sine'nsis*. ½. September. China.
 — *sphaerocéphalus*. July. Malacca. Hook. Ic. Pl. t. 94.
 — *spic'ndens*. July. E. Ind.
 — *varius*. July. Malacca. 1845.

Nipho'psis. (From *niphos*, snow, and *opsis*, resemblance; the fronds being covered with a white stellate pubescence. Nat. ord., *Filices*—*Polypodiaceæ*.)

Stove fern. See FERNES.

N. angusta'tus. 1. Malay Archipelago.

Nisso'lia. (Named after *W. Nissole*, a French botanist. Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*. 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*. 6. White. 1823.
 — *micro'ptera*. 10. White. July. Teneriffe. 1820.
 — *robiniaefolia*. 6. St. Vincent. 1824.

STOVE EVERGREEN CLIMBERS.

- N. aculea'ta*. 12. Rio Janeiro. 1824.
 — *fruticosa*. 15. Yellow. August. S. Amer. 1766. Ic. Pl. t. 599.
 — *racemosa*. 15. White. July. W. Ind. 1800.
 — *retusa*. 6. S. Amer. 1819.

Nitrates. See Salts.

Nitta-tree. *Par'kia africa'na*.

Nive'nia. (Named after *J. Niven*, a botanical collector. Nat. ord., *Proteaceæ*; Tribe, *Proteaæ*. 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 fibry loam. Winter temp., 35° to 45°.

- N. crithmifolia*. 4. Purple. 1810. Syn., *N. lagopus* and *Protea lagopus*. Andr. Rep. t. 243.
 — *lagopus*. See *N. crithmifolia*.
 — *media*. 2½. 1786. Syn., *Protea epicata*. Andr. Rep. t. 234.
 — *scé'ptrum*. 2. 1790.
 — *spathulata*. 2½. 1790.
 — *spicata*. 2½. 1786.

Nohl-kohl. See Knohl-kohl.

Noise'ttia. (Named after *L. C. Noisette*, a French nurseryman. Nat. ord., *Violaceæ*; Tribe, *Violaæ*. 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. longifolia. 1. Cream. Cayenne. 1824.

Nola'na. (From *nola*, a little bell; the form of the flowers. Nat. ord., *Convolvulaceæ*; Tribe, *Nolaneæ*.)

Hardy trailing annuals, nearly 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. atriplicifolia*. ½. White, yellow. July. Peru. 1834. Swt. Fl. Gard. ser. 2, t. 305.
 — *grandiflora*. ½. July. Chili. 1829.
 — *lanceolata*. Blue, white, green. Chili. 1862.
 — *paradoxa*. 1½. August. Chili. 1825. B.R. t. 865.
 — *prostrata*. ½. August. Peru. 1761. B.M. t. 731.
 — *tene'lia*. ½. August. Chili. 1824.

Nolina. (Named after *P. C. Nolin*, an American botanist. Nat. ord., *Liliaceæ*; Tribe, *Dracæneæ*. Allied to *Cordylina*.)

An interesting, hardy, peat-border bulb. Offsets and cuttings; sandy, moist peat.

- N. georgia'na*. 2½. White. July. Georgia. 1812. G. C. 1881, xv. p. 697, fig. 126.

Nonate'lia. (From the South American name. Nat. ord., *Rubiaceæ*; Tribe, *Psychotriææ*. Allied to *Guettardia*.) See **Palicourea**.

- N. lu'tea*. See *Palicourea lutea*.
 — *racemosa*. See *Palicourea racemosa*.
 — *violacea*. See *Palicourea violacea*.

No'nea. (After *J. P. Nonne*, a German botanical author. Nat. ord., *Boraginææ*.)

Hardy annual. For culture, see ANCHUSA.

- N. rosea*. ½-1. Rose, yellowish-white. Summer. Asia Minor. Syn., *Anchusa latifolia*.
 — — *versicolor*. Red changing to blue. Syn., *Anchusa versicolor*. B. M. t. 3477.

Nopa'lea. (From *Nopal*, the Mexican name. Nat. ord., *Cactææ*.)

Fleshy stove shrubs. Well drained soil, mixed with lime rubbish; plenty of sunlight. Cultivated as food for cochineal insects.

- N. coccinellifera*. 10. August. W. Indies. 1688. Syn., *Cactus cochinellifera*, Andr. Rep. t. 533 and *Opuntia coccinellifera*.

Nora'ntea. (From its Guianan name. Nat. ord., *Ternstroemiaceæ*; Tribe, *Margraviææ*.)

Handsome stove evergreen shrubs, remarkable for their singular bracts. Culture same as for **PALICOUREA**.

- N. brasiliensis*. 4. Brazil. 1820.
 — *guianensis*. 4. Violet. Guiana. 1818.
 — *indica*. White. Mauritius. 1822.

Nordma'nnia. (In honour of *M. Nordmann*, a continental botanist. Nat. ord., *Thymelacææ*; Tribe, *Erthymeleææ*.) United with **Daphnopsis** in the *Genera Plantarum*.

Hardy herbaceous plant; by division in early autumn or early spring; light loam.

- N. coraifolia*. ½. Blue. April. 1846.

Norfolk Island Pine. *Arauca'ria excelsa*.

Normandy Cress. See **American Cress**.

Norway Maple. *A'cer platanoi'des.*

Norway Spruce. *Pi'nus exce'l'sa.*

Notelæ'a. (From *notos*, south, and *elaia*, the Olive; literally, the Australian Olive. Nat. ord., *Oleaceæ*; Tribe, *Oleineæ*.)

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. longifo'lia. 3. April. 1790. Syn., *Olea apeta'la.* Andr. Rep. t. 316.
— *ova'ta.* 2. June. 1824.
— *puncta'ta.* 3. June. 1826.

Notholæ'na. Sometimes written **Nothochlæna** or **Nothoclæna.** (From *nothus*, spurious, and *chlaina*, a cloak; some of the species appearing to have an involucre. Nat. ord., *Filices*.)

Stove ferns, all but one with brown spores. See FERNS.

N. argyrosti'gma. July. E. Ind.
— *canarie'nsis.* Island of Teneriffe.
— *cane'scens.* Mexico.
— *chryso'phy'lla.* ½. Khaysa.
— *de'nsa.* July. Isle of Luzon. 1840.
— *d'i'stans.* ½. July. N. Holland. 1823.
— *Ecklonia'na.* ½. August. 1838.
— *fla'vens.* See *Cincinnati's flavens.*
— *hypoleu'ca.* White underneath.
— *læ'vis.* 1. Mexico.
— *lanugin'o'sa.* ½. August. Madeira. 1778.
— *lent'i'gera.* May. S. Amer. 1822.
— *Mar'a'ntæ.* ½. July. N. Holland. 1820.
— *mo'llis.* S. Chili.
— *Muelle'ri.* 1. 1888.
— *n'va.* See *Cincinnati's nivea.*
— *pilosello'des.* ½. July. E. Ind. 1829.
— *pulvera'cea.* ½. Mexico.
— *pu'mila.* ½. August. N. Holland.
— *ru'fa.* May. S. Amer. 1841.
— *sinua'ta.* Peru. 1831.
— *te'nera.* See *Cincinnati's tenera.*
— *toment'o'sa.* May. Mexico. 1841.
— *trichomano'i'des.* June. Jamaica. 1844.
— *vesti'ta.* July. N. Amer. 1812.

Nothosco'rdum. (From *nothos*, spurious, and *scordon*, garlic. Nat. ord., *Liliacæ*; Tribe, *Alliæ*. Syn., *Calosco'rdum*.)

Hardy or half-hardy bulbs. For culture, see ALLIUM.

N. au'reum. 1. Yellow. July. California. 1869.
— *fra'grans.* 1½. White. W. Indies. Syn., *Allium fragrans.* Hardy.
— *ino'dorum.* 1½. White. May. Carolina. 1770. Syn., *Allium inodorum.* B. M. t. 1129. Hardy.
— *macroste'mon.* 1. White, or pale lilac. Summer. Buenos Ayres. 1875. Syn., *Milla macrostemon.* Half-hardy.
— *nerinifo'rum.* ½. Rose, purple. Chusan. 1843. Syn., *Calosco'rdum nerineo'florum.* B. E. 1847, t. 5. Half-hardy.
— *striate'llum.* Greenish-yellow. May. Chili. Syn., *Ornithogalum gramineum.* B. M. t. 2419. Half-hardy.
— *striat'u'm.* ½. White. S. America. Syn., *Allium striatum.* Hardy.

Noto'basis syr'aca. The Syrian Thistle.

Notospa'rtium. (From *notos*, southern, and *spartium*, Broom; a New Zealand plant resembling the broom. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*.)

Half-hardy or greenhouse shrub, resembling the Broom. Grows in peaty soil. Seeds.

N. Carmichaeliæ. 20. Pink. New Zealand. 1883. B. M. t. 6741.

Noty'lia. (From *notos*, the back, and *tylos*, a hump; referring to a singular lump on the column. Nat. ord., *Orchideæ*; Tribe, *Vandæ-Notyliciæ*. Allied to *Cirrheæ*.)

Stove orchids. For culture, see CIRRHÆA.

N. al'bidæ. ½. White. Spring. Central Amer. 1851.
— *Barkeri.* Straw. Mexico. 1837.
— *bi'color.* Lilac, greenish-white. Guatemala. 1866.
— *biparti'ta.* 1880.
— *Bungero'thi.* Yellowish-green. Tropical America. Venezuela? 1887.
— *incu'ra.* Pale straw. Trinidad.
— *læ'za.* Brazil. 1881.
— *laxifo'ra.* ½. Pale yellow. Para. 1839.
— *micra'ntha.* Pale green. Demerara.
— *puncta'ta.* ½. Yellow, green. Trinidad. 1822. B. R. t. 759. Syn., *Pleurothallis punctata.*
— *te'nuis.* Pale straw. Demerara. 1836.

Novæ'lia. (After *M. A. A. Nouel*, director of the Musée d'Orleans. Nat. ord., *Compositæ*.)

Half-hardy shrub, or small tree.

N. insi'gnis. White. Yunnan, China. Rev. Hort. 1889, p. 229, fig. 60.

Nunnezharia. This is an older name for the genus **Chamædorea**, but until it becomes more generally adopted we prefer to keep up the more familiar name of **Chamædorea**, under which the species are placed.

Nu'phar. (From *neufar*, the Arabic for water-lily. Nat. ord., *Nymphæacæ*; Tribe, *Nymphæacæ*.)

A beautiful family of hardy, yellow-flowered water-plants. Seeds merely thrown in the pond where it is desired to grow them, and propagated by divisions of the roots.

N. adve'na. July. N. Amer. 1772. Syn., *Nymphæa advena.* B. M. t. 684.
— *Kalmi'da'na.* See *N. pumila.*
— *hi'tea.* June. Britain. Eng. Bot. ed. 3, t. 54.
— *pu'mila.* July. Scotland. Syns., *N. Kalmiana* and *Nymphæa Kalmiana.* B. M. t. 1243.
— *sagittæfo'lia.* 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. *Myristica*.

Nutta'lia. (Named in honour of *Thomas Nuttall*, a celebrated N. American botanist. Nat. ord., *Rosaceæ*; Tribe, *Prunææ*. Allied to *Spiræa*.)

Half-hardy shrub. Seeds, suckers, or cuttings in sandy loam under a hand-glass. Rich light soil. Needs protection from frost.

N. cerasif'ormis. 5. White. Early spring. California. 1848.

This must not be confounded with a genus of the same name, but belonging to *Malvaceæ*, which is now referred to **Callirhoe**, as follows:

N. corda'ta. B. R. t. 1938. See *Callirhoe tri-angulata*.

— *digita'ta*. B. M. t. 2612. See *Callirhoe digi-tata*.

— *grandif'ora*. Paxt. Mag. v. p. 217. See *Callirhoe digitata*.

— *Papa'ver*. B. M. t. 3287. See *Callirhoe Pa-paver*.

— *peda'ta*. See *Callirhoe pedata*.

Nut Tree. *Corylus*.

Nut Weevil. *Curcu'tio nucum*.

Nuy'tsia. Fire-tree. (Called after *T. Nuyts*, a Dutch navigator. Nat. ord., *Loranthaceæ*; Tribe, *Euloranthææ*.)

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 fibry loam. Winter temp., 40° to 48°.

N. floribu'nda. 15. Orange. 1837. Syn., *Loranthus floribundus*.

— *liquistr'na*. Orange. 1837.

Nycta'nthes. (From *nyctos*, night, and *anthos*, a flower; the flowers open in the evening. Nat. ord., *Oleaceæ*; Tribe, *Jasmineææ*. 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 fibry peat, kept open by sand and charcoal. Winter temp., 55° to 60°; summer, 70° to 90°. A most atmosphere when growing.

N. arbor tri'stis. 15. White. E. Ind. 1781. B. M. t. 4900.

Nycteri'nia. See *Zaluzianskia*.

Nycte'rium. See *Solanum*.

Nycto'calos. (From *nyx*, night, and *calos*, beautiful; because the handsome flowers of the first species discovered open in the evening and fade in the morning. Nat. ord., *Bignoniaceæ*.)

A handsome stove climber. For cultivation, see **BIGNONIA**.

N. Thoms'o'ni. Climber. White. Assam. 1868. B. M. t. 5678.

Nymphæa. Water-Lily. (From *nymphæ*, a water-nymph. Nat. ord., *Nymphæaceæ*; Tribe, *Nymphæææ*.)

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 tubers 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°.

N. adve'na. See *Nuphar advena*.

— *a'liba*. White. Summer. Britain. Syn., *N. Casparyi*, var. *alba*.

— *canade'nsis*. White. June. Canada. 1820.

— *ro'sea*. Rose-pink. Sweden. 1878. Syn., *N. Casparyi*.

— *amaz'o'num*. Yellowish-white. Jamaica. B. M. t. 4823. Greenhouse.

— *ampla speci'o'sa*. White. July. Jamaica. 1801. Syn., *N. ampla* of B. M. t. 4469. Stove.

— *biradia'ta*. July. 1846. Greenhouse.

— *bla'nda*. White. July. Trinidad. 1820. Stove.

— *cæru'lea*. See *N. stellata*.

— *candidi'ssima*. White. Flowers 16 to 18 inches in diameter.

— *Ca'sparyi*. See *N. alba*, var. *rosea*.

— *Cæpa'ryi a'liba*. See *N. alba*.

— *cy'anea*. See *N. stellata*, var. *cyanea*.

— *dentata*. See *N. Lotus*, var. *dentata*.

— *Devont'e'nsis*. Scarlet. Spring. Stove hybrid between *N. Lotus* and *N. rubra*. B. M. t. 4665.

— *e'dulis*. White. July. E. Indies. Syn., *Castalia edulis*. Stove.

— *e'legans*. Yellowish-white, purplish. June. New Mexico. 1860. Stove. B. M. t. 4604.

— *fla'va*. Canary yellow. Summer. S. United States. 1881. Half-hardy.

— *giga'ntea*. Blue. Australia. 1852. B. M. t. 4647. Stove or greenhouse.

— *Kalmia'na*. See *Nuphar pumila*.

— *kewe'nsis*. Rose-carmine. Hybrid between *N. Denoniensis* and *N. Lotus*. 1887.

— *Lotus*. Red or white. July. Egypt. 1802. Syn., *N. rubra*, B. M. t. 1280 and 1864, and *Castalia mystica*. Stove.

— *dentata*. White. Sierra Leone. 1845. Syn., *N. dentata*, B. M. t. 4267.

— *Ortgiesia'na*.

— *Maria'cea*, and var. *chromate'lla*. See *N. tuberosa*, var. *flavescens*.

— *mexica'na*. Shining yellow. 1889. Half-hardy.

— *miera'ntha*. White. August. W. Africa. Stove.

— *mi'nor*. White. July. N. America. 1812.

— *ni'tida*. White. July. Siberia. 1809. B. M. t. 1359. Hardy.

— *odora'ta*. White, tinged with red. July. N. America. 1786. B. M. t. 819. Hardy.

— *ro'sea*. Pinkish.

— *Ortgiesia'na Ade'le*. See *N. stellata*, var. *purpurea*.

— *pube'scens*. White. June. E. Indies. 1803. Stove. Indian Lotus.

— *pygma'ea*. White. Summer. Central and Northern Asia. 1806. B. M. t. 1525. Hardy.

— *renifo'rmis*. White. July. Carolina. 1823. Greenhouse.

— *ru'bra*. See *N. Lotus*

- N. scutifolia*. Bright blue. South Africa. 1792. Stove or greenhouse.
- *ro'sea*. See *N. stellata*, var. *purpurea*.
- *sphaerocarpa ro'sea*. Perhaps the same as *N. alba*, var. *rosea*.
- *stellata*. Blue. Summer. Tropical Africa. 1812. Syn., *N. cœrulea*, B. M. t. 552. Stove.
- *cyanea*. Blue. Summer. India. 1809. Syn., *N. cyanea*, B. M. t. 2058. Stove.
- *purpurea*. Purple. Syns., *N. Ortigiana*, var. *Adele*, and *N. scutifolia*, var. *rosea*.
- *versicolor*. White to red. Summer. Bengal. 1807. Syn., *N. versicolor*, B. M. t. 1189. Stove.
- *zanzibarensis*. Deep blue. Summer. Zanzibar. 1880.
- *no're rubro*. Deep rose purple. 1887. Gf. t. 1240.
- *sturtevantii*. Pale rose. Garden variety. Stove.
- *thermatis*. White. July. Hungary. 1802. Syn., *N. Lotus* of B. M. t. 797. Stove.
- *tuberosa*. White. July. Eastern N. America. B. M. t. 6536. Hardy.
- *flavescens*. Canary-yellow. Syns., *N. Mariiacea*, Garden, xxxiii. p. 292, and *N. Mariiacea*, var. *chromatella*. Jard. 1889, p. 43.
- *versicolor*. See *N. stellata*, var. *versicolor*.
- *voalfo'ka*. White. Madagascar? Said to be a variety of *N. stellata*. Stove.
- *zanzibarensis*. See *N. stellata*, var. *zanzibarensis*.

Ny'ssa. Tupelo-tree. (From *Nyssa*, a water-nymph. Nat. ord., *Cornaceæ*.)

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 deepscarlet; 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. biflora*. 6. May. 1739. Syn., *N. aquatica*.
- *capitata*. 20. 1806. Syn., *N. canalicans*. Ogechee Lime.
- *grandidentata*. May. 1736. Syns., *N. denticulata* and *N. tomentosa*.
- *multiflora*. 10. May. 1824. Syns., *N. sylvatica* and *N. villosa*. Sour Gum.

O.

Oak. *Quercus*.

Oak-galls. Although the galls produced on British Oaks are exceedingly numerous, both in individuals and species, yet in general they seem to occasion very little harm to the trees, and we should not, therefore, mention them in this place, but for the fact that some few of the kinds are of such common occurrence as to be noticed by almost every observant person living in a neighbourhood where there are Oak trees; and gardeners and others frequently want to know something about

them. We therefore give a brief account of a few of the commonest species.

The large spongy gall, commonly known as the *Oak-apple*, or *King Charles's apple*, which is found upon the Oak about the middle of May, is produced by a small Hymenopterous insect named *Andricus terminalis*. The gall is somewhat spherical, and an inch or more in diameter; it is of a pale yellowish colour, tinged with rosy where exposed to the sun. The outer substance is of a soft, fungus-like nature; in the interior are a number of small oval larva-cells, in which the larvæ live and undergo their transformations, the perfect insects emerging at the end of May or beginning of June. After the gall-makers have left the gall, it is taken possession of by a great variety of other insects, some of which eat the spongy external substance; others live in the empty gall-cells that remain.

The *Silk-button gall*, so called from its resemblance to a small silk button, is produced on the under side of the leaf in July; usually several are congregated

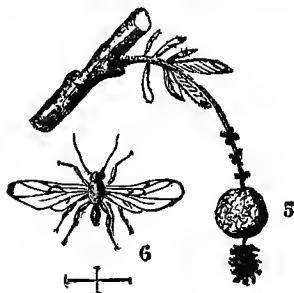


together (Fig. 1). It forms a small disc, depressed in the centre, of a pale brown colour, clothed with silky hairs. Fig. 2 represents the gall in section, magnified, exposing the small central larva-cell. In October or November the galls fall to the ground, where they remain until February or March, when the perfect insect—*Neuroterus numismatis*—comes forth.

The *Oak-spangle* (represented at Fig. 3, on the lower part of the leaf, and in

section at Fig. 4, magnified) is a small disc-like gall with raised centre. In colour it is more or less reddish, and is covered with short hairs. This gall is produced by *Neuroterus lenticularis*, and, like the Silk-button gall, it falls to the ground in October, the perfect insect emerging in March.

The *Currant-gall* (Fig. 5) is a small globose gall, produced by *Spathogaster baccarum*, on the catkins and under side



of the leaves in May; it is green or reddish, translucent, and watery. About the middle of May or beginning of June the perfect insect comes forth (Fig. 6, magnified, the crossed lines beneath showing the natural size), and the galls shrivel up, unless tenanted by other insects. It has been stated by a German entomologist that the Oak-spangle gall, mentioned above, is produced by the second brood of *Spathogaster baccarum*, and although this is not at all improbable, it still requires confirmatory proof.

The *Marble* or *Devonshire gall* is so common, and so conspicuous from its large size, as to be well known to almost every one living in the country; we need therefore say nothing about it, beyond stating that it is caused by a brown Hymenopterous insect, named *Cynips Kollarî*.

Oat. *Ave'na*.

Obero'nia. (After the Fairy King, *Oberon*. Nat. ord., *Orchidæ*; Tribe, *Epidendrææ-Lipariææ*.)

Stove epiphytal orchids. For culture, see LIPARIS.

O. acari'lia. Orange. Spring. E. Bengal. B. M. t. 5056.

— *iridifolia*. See *O. tahitensis*.

— *rustia'bris*. Yellow. Assam or Burmah. 1881.

— *tahitensis*. Yellow. June. Pacific Islands. 1840. Syn., *O. iridifolia*, B. M. t. 4517.

Oblionker Tree. *Æsculus Hippocastanum*.

O'ca. The tubers of *Oxalis tuberosa* are so called in Bolivia, where they are cooked and eaten like potatoes.

O'chna. (From *ochne*, the wild pear-tree; resemblance of the leaves. Nat. ord., *Ochnaceæ*.)

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 fibry 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. 20. Cape of Good Hope. 1832.

— *atro-purpurea*. 4. Purple. Cape of Good Hope. 1816. B. M. t. 4519.

— *lucida*. 6. E. Ind. 1819.

— *mauritia'na*. 8. Mauritius. 1822.

— *multiflora*. 8. Sierra Leone. 1820. Garden, Dec. 30th, 1833.

— *nitida*. 6. Cape of Good Hope. 1815.

— *obtusata*. 4. E. Ind. 1790.

— *zeylanica*. A synonym of *Gomphia zeylanica*.

Ochra'nthe. (From *ochros*, pale yellow, and *anthos*, a flower. Nat. ord., *Cunoniaceæ*.) See **Turpinia**.

O. argu'ta. B. R. t. 1819. See **Turpinia**.

Ochroca'rpus. (From *ochros*, yellow, and *karpus*, fruit; the fruits are yellow. Nat. ord., *Guttiferæ*. Syn., *Calyssaccion*.)

Stove tree. Sandy loam. Cuttings of ripened wood in sand, under a bell-glass and kept moist.

O. africa'nus. 60. Greenish. W. Tropical Africa. 1823. Syn., *Mammea africana*

Ochro'ma. (From *ochros*, pale; referring to the flowers. Nat. ord., *Malvaceæ*; Tribe, *Bombaceæ*. 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. 40. Jamaica. 1804.

— *tomentosa*. 20. S. America. 1816.

Ochro'pteris. (From *ochros*, pale, and *pteris*, a fern. Nat. ord., *Filices*.)

A beautiful stove fern, requiring a very moist, warm atmosphere. Peat, sand, and a little loam.

O. pa'llens. 4. Mauritius.

Ochro'sia. (From *ochros*, pale yellow. Nat. ord., *Apocynaceæ*; Tribe, *Plumeriææ*. Allied to *Cerbera*.)

Stove evergreen trees. Cuttings of half-ripened shoots; treatment similar to *Ochroma*.

O. borbo'nica. 10. Cream. Bourbon. 1828.

Syn., *Cerbera borbonica* and *C. undulata*. Andr. Rep. t. 130.

— *elliptica*. Yellow. Queensland.

— *maculata*. 4. White. June. Bourbon. 1782. Syn., *Cerbera maculata*. Perhaps the same as *O. borbonica*.

O'cium. Basil. (From *ozo*, a smell; the powerful odour of the plant. Nat. ord., *Labiataæ*; Tribe, *Ocimoideæ*. Syn., *Lumnitzera* of Jacquin.)

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 *BASIL*.

- O. basi'licum*. 1. August. E. Ind. 1548. Common Basil. Hardy annual.
 — *glabra'tum*. July. E. Ind. 1817.
 — *pilo'sum*. 1. July.
 — *thyrsifo'rum*. 1½. June. E. Ind. 1806.
 — *bicolor*. 2. October. Abyssinia. 1842. Deciduous shrub.
 — *ca'num*. 1. July. Madagascar. 1822. B. M. t. 2452.
 — *com'o'sum*. Blackish-purple. Wien. Gart. Zeit. 1889, p. 485, fig. 76. Hardy annual.
 — *febrifugum*. See *O. viride*.
 — *flamento'sum*. 2. September. Africa. 1802. Syn., *Becium bicolor*, B. R. 1843, t. 15.
 — *grati'ssimum*. 2. July. E. Indies. 1751.
 — *menthoi'des*. 1. Annual.
 — *mini'mum*. ¾. May. W. Indies. 1825. Annual. Syn., *O. montanum*.
 — *monta'num*. See *O. minimum*.
 — *sa'nctum*. 1. Purple. E. Indies. 1703. Syn., *Lumnitzera tenuiflora*.
 — *scutellarioi'des*. B. M. t. 1446. See *Coleus scutellarioidea*.
 — *viride*. 2-4. Greenish-white. Autumn. W. Africa. 1816. Syn., *O. febrifugum*. B. R. t. 753.

Oco'tea. (The native name in Guiana. Nat. ord., *Laurineæ*. Syn., *Oreodaphne*.)

Greenhouse tree. Well drained loam. Cuttings of ripened wood in sandy soil, under a bell-glass, during summer.

- O. bulla'ta*. Green. South Africa. Syn., *Oreodaphne bullata*. B. M. t. 3931.
 — *califo'rnica*. See *Umbellularia californica*.

Octade'smia. (From *okto*, eight, and *desme*, a bundle; there are eight pollen masses. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Pleurothalleæ*.)

Stove epiphytal orchid. Compost of fibry peat, sphagnum and pieces of charcoal.

- O. monta'na*. ¾. White. October. Rio Janeiro. 1826. Syn., *Octomeria serratifolia*, B. M. t. 2823.

Octome'ria. (From *okto*, eight, and *meris*, a part; referring to the eight pollen masses. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Pleurothalleæ*.)

Greenhouse epiphytal orchids. Peat and sphagnum, with abundance of water during the growing period.

- O. cochlea'ris*. Pale ochre. Brazil. 1881.
 — *gramini'folia*. ¾. Pale yellow, red. May. W. Indies. 1793. B. M. t. 2764.
 — *Saundersia'na*. Ochre, purple. Winter. Brazil. 1880.
 — *serratifolia*. B. M. t. 2823. See *Octadesmia montana*.
 — *supragl'auca*. ¾. Pale green, yellowish, purple. 1887.
 — *tri'color*. White. Brazil. 1872.

O'cymum. See *Ocimum*.

Odontade'nia. (From *odous*, a tooth, and *aden*, a gland; the glands are five-toothed. Nat. ord., *Apocynaceæ*.)

Stove scandent shrub. Rich loamy soil. Seeds; cuttings.

- O. specio'sa*. Bright yellow. Trinidad. 1854. Syn., *Dipladenia Harrisii*, B. M. t. 4825.

Odontoglo'ssum. (From *odous*, a tooth, and *glossa*, a tongue; tooth-like processes on the lip, or labellum. Nat. ord., *Orchideæ*; Tribe, *Vandee-Oncidieæ*. Allied to *Oncidium*.)

Stove orchids. Division of pseudo-bulbs; fastened to a block of wood, and then the block fastened across the mouth of a pot, with fibry peat, sphagnum, and potsherds placed round it, or grown in baskets. Winter temp., 55° to 65°; summer, 65° to 90°.

- O. acuminati'ssimum*. Orange, crimson, cinnamon. A hybrid (?) G. C. 1882, xvii. p. 256.
 — *acumi'na'tum*. See *O. Rossii*.
 — *Alexa'ndrae*. White, purple, yellow. Santa Fé de Bogota. 1864.
 — *Cutsemia'num*. See *O. crispum*, var. *Cutsemianum*.
 — *gutta'tum*. ¾. White, red, yellow. August. Columbia. 1887. Syn., *O. Alexandrae*, var. *Bowmani*.
 — *Outra'mii*. Spotted, and flushed with rosy-purple. Columbia. Warn. Orch. Alb. t. 403.
 — *roseum*. Rosy, brown. Columbia. 1872.
 — *Tri'a'ne*. White, rose, carmine, coppery. Columbia. 1868.
 — *virginal'e*. White. G. C. 1883, xx. p. 307.
 — *Warne'ri*. Rosy, brown, white, yellow. Columbia. 1869.
 — *a'nceps*. Yellow, white. July. Mexico. 1852. Perhaps the same as *O. maculatum*.
 — *Andersonia'num*. Cream-colour, brown. Columbia. 1868. Natural hybrid. Syn., *O. crispum*, var. *Andersonianum* and *O. Josephine*.
 — *imperia'le*. Straw-yellow, with chestnut-red blotches. G. C. 1891, ix. p. 330
 — *loba'tum*. Cinnamon spotted. 1879.
 — *Lemoi'nteria'num*. Sepals and petals bordered with yellow. G. C. 1888, iv. p. 378.
 — *sple'ndens*. Warn. Orch. Alb. t. 292. See *O. crispum*, var. *splendens*.
 — *te'nuis*. White, brown. 1878.
 — *gutta'tum*. G. C. 1882, xviii. p. 102.
 — *angusta'tum*. White, purple, Merida.
 — *styli'tes*. Variety with a styliform process each side of the callus. G. C. 1882, xvii. p. 588.
 — *antha'ca'nthum*. Sulphur-yellow. Peru. 1869.
 — *aspe'rum*. Yellowish, white, brown. 1879.
 — *spilogo'ssum*. Lip blotched with brown. G. C. 1886, xxv. p. 466.
 — *astra'nthum*. Yellow, red-brown. Andes of Ecuador. 1867.
 — *baphica'nthum*. Yellow, purplish. Columbia. 1876.
 — *Bergma'nii*. White, with large brown blotches. Lind. t. 286.
 — *bicolor*. Violet, yellow. Peru.
 — *Bictone'nse*. Lilac, green. April. Guatemala. 1837.
 — *al'bum*. Brown, white. April. Guatemala. 1843.
 — *roseum*. Perhaps a synonym of the following.
 — *ru'brum*. Brown, red. April. Oaxaca. 1843.
 — *specio'sum*. Dark purple, yellow; lip rosy-purple. 1887. Gf. t. 1250, figs. c-d.
 — *sulphu'reum*. Yellow; lip white.

- O. bla'ndum*. White, maroon-crimson. Columbia. 1873.
- — *Rossia'num*. Spotted with brown; lip yellow with red and purple spots. G. C. 1886, xxvi. p. 712.
- *Bleichröderia'num*. Rosy, with purple spots; lip white, purple. Lind. t. 177.
- *Bleu'i*. See *Miltonia Bleu'i*.
- *Blu'ntii*. White, yellow. New Grenada. 1865.
- *Boddærtia'num*. Yellow, brown; lip white, purple. Venezuela. G. C. 1888, iii. p. 296.
- *brachypterum*. New Grenada. G. C. 1882, xviii. p. 552.
- *Bra'ndtii*. Yellow, brown; lip white, purple brown. Columbia. 1889. Gh. t. 1880.
- *Bra'ssia*. Purple spotted. Natural hybrid. G. C. 1881, xxiii. p. 501.
- *brevisfolium*. See *O. coronarium*.
- *cærulea'num*. White, blue. Mexico.
- *ca'ndidum*. Guatemala. 1840.
- *carini'ferum*. Brown, yellow, white, violet. Central America. 1870. Syn., *O. hastilabium*, var. *fuscatum*.
- *Cervante'sii*. $\frac{1}{2}$. White, rose, yellow. March. Oaxaca. 1845. B. R. 1845, t. 36. Syn., *O. membranaceum*.
- — *lilaci'num*. Rosy-lilac. Lind. t. 172.
- — *ma'jus*. Mexico. 1879.
- *punctatissimum*. White, yellow, purple-dotted. 1878.
- *roseum*. Pale rose.
- *chætotro'na*. Yellow, with crimson spots. Natural hybrid (?). G. C. 1883, xix. p. 562.
- *cinnamo'meum*.
- *cirrho'sum*. White, purple, yellowish. Ecuador. 1876. B. M. t. 6317.
- — *gemma'tum*. White, with mauve or purple stains. 1881.
- — *Erubya'num*. Unspotted or nearly so.
- — *Klabo'o'num*. Flowers larger than the type. 1876.
- *citro'sum*. White; lip purple. May. Guatemala. 1840. Syn., *O. pendulum*.
- — *al'bum*. White.
- — *Devansayea'num*. White with reddish dots. Lind. t. 137.
- — *puncta'tum*. Pale rose with purple dots.
- — *roseum*. Lip deep rose.
- — *Clæssia'num*. White, with brownish-crimson blotches. Columbia. Lind. t. 271.
- *claviceps*. Brown, yellow. Ecuador. 1876.
- *Clow'e'sii*. A synonym of *Miltonia Clowesii*.
- *compa'tum*. Yellow, purplish. Columbia. 1875.
- *conf'e'rtum*. Ochre, brown, yellow, orange, purple. Ecuador. 1878.
- *constri'ctum*. Bright yellow, orange-brown, rose. Caracas. 1843. B. M. t. 5786.
- — *casta'neum*. Brown with greenish-white lines. 1885. Ill. Hort. t. 66.
- — *ma'jus*. Yellow, brown. May. La Guayra. 1843.
- — *pa'pens*. Sulphur, white. G. C. 1886, xxvi. p. 648.
- — *Sanderia'num*. Pale ochre, brown, white, sulphur. Columbia? 1881. Syn., *O. Sanderianum*.
- *Cookia'num*. Deep yellow, with chestnut blotches. Natural hybrid? G. C. 1891, x. p. 696.
- *Coradi'neti*. Sulphur, brown, white. Columbia. 1872. A natural hybrid between *O. crispum* and *O. Lindleyanum*.
- — *grandifo'rum*. Yellow, with chestnut-brown spots. New Grenada. 1887.
- — *hemileu'rum*. White spotted with cinnamon; lip light yellow. G. C. 1883, xix. p. 688.
- O. corda'tum*. 1. Greenish-yellow, brown. January. Mexico. 1837. Syn., *O. maculatum*. B. M. t. 4878.
- — *sulphu'reum*. Sulphur, white. 1880.
- *corona'rium*. Reddish-brown, yellow; lip golden-yellow. Peru. 1868. Syn., *O. brevifolium*.
- — *chiriqui'ense*. Chestnut-brown, yellow. Chiriqui. Syn., *O. chiriquense*.
- — *Daya'num*. Brown, yellow. Peru.
- — *minia'tum*. Chestnut-brown, yellow. Ecuador. Syn., *O. miniatum*.
- *costa'tum*. *Keinastia'num*. Lip dark brown in front. G. C. 1883, xxv. p. 456.
- *crini'tum*. Columbia. G. C. 1882, xviii. p. 40.
- — *sapphira'tum*. Lip white, with bluish-mauve spots. G. C. 1886, xxv. p. 762.
- *cri'spum*. Yellow, purple. May. Columbia. 1844. This has very numerous varieties.
- — *Alexa'ndræ*. See *O. Alexandræ*.
- — *Andersonia'num*. See *O. Andersonia-num*.
- — *guttula'tum*. Yellow with brown spots; lip white, yellow, brown.
- — *angusta'tum*. Narrower petals with larger spots.
- — *apia'tum*. Sepals stained violet-purple and with one large and two small brown blotches on each.
- — *Bluthia'na*. Pale mauve, unspotted. 1891. Gh. t. 1356.
- — *Chesterto'ni*. White, blotched reddish-brown; lip reddish-brown edged with yellowish-white.
- — *Cutsemia'num*. White with red spots. Syn., *O. Alexandræ*, var. *Cutsemianum*.
- — *Ea'thica*. Yellow, brown, rose, white. Columbia. Syn., *O. Ea'thica*.
- — *fastu'sum*. Lilac, white, yellow, violet. 1878.
- — *Jave'olum*. Yellow, white, red. Columbia. 1878.
- — *giga'nticum*. White with reddish-brown spots.
- — *Gonvillea'num*. White, blotched with brown. Rev. Hort. 1888, p. 132.
- — *gutta'tum*. See *O. Alexandræ*, var. *gutta'tum*.
- — *xanthoglo'ssum*. Lip yellow, blotched cinnamon. G. C. 1883, xix. p. 656.
- — *Erubya'num*. Centre brown. Columbia. Rchb. t. 115.
- — *hyperaxanthum*. Yellow. G. C. 1887, i. p. 477.
- — *Jenningsia'num*. Creamy-white, cinnamon, yellow. Syn., *O. Jenningsianum*.
- — *limba'tum*. Margin sulphur. G. C. 1882, xvii. p. 808.
- — *parcigutta'tum*. White, blotched brown. March. Natural hybrid. G. C. 1883, xix. p. 110.
- — *Kinlesidea'num*. Pale rose, red, white, yellow. 1888. Rchb. t. 45.
- — *latimacula'tum*. White, chocolate. Lind. t. 145. Syn., *O. latimaculatum*.
- — *Lehma'nni*. Purple, tinged with brown. South America. 1880.
- — *limba'tum*. Milk-white, lilac, violet. Columbia. 1870. Syn., *O. Umbatum*.
- — *viola'ceum*. Violet, white, brown. 1878.
- — *loba'tum*. See *O. Andersonianum*, var. *lobatum*.
- — *Mari'æ*. White, red, yellow. Columbia. 1879. Ill. Hort. new ser. t. 325.
- — *Mundya'num*. Purplish, blotched with magenta-purple. Rchb. ser. 2, t. 5.
- — *pluma'tum*. Flushed with rosy-purple, spotted cinnamon. Columbia. Warn. Orch. Alb. t. 414.

- O. crispum Pollettia* num. Purple, creamy white, spotted with reddish-brown. New Grenada. Warn. Orch. Alb. t. 280. Syn., *O. Pollettianum*.
- *reginae*. White, reddish-brown, yellow. New Grenada. Warn. Orch. Alb. t. 264.
- *Rothschildia* num. White, violet, yellow. G. C. 1884, xxi., p. 609.
- *Ruckeria* num. Creamy-white, violet, chestnut-brown. Syn., *O. Ruckertianum*. There is also a variety *splendens*. 1883.
- *superbum*. Tinged with rose. Rev. Hort. 1889, p. 60.
- *splendens*. White, tinged with rose, brown. Columbia. Syn., *O. Andersonianum*, var. *splendens*.
- *Steve'si*. White, brown, yellow.
- *sulphurum*. Sulphur-yellow. G. C. 1882, xvii. p. 182.
- *tenue*. See *O. Andersonianum*, var. *tenue*.
- *Tria'næ*. White, rosy, carmine. Columbia. 1888. B. M. t. 5691.
- *Veitchia* num. White, mauve, brown. 1884.
- *Warneri*. White, rose, purplish-brown, yellow. Columbia. 1869.
- *Wolstenholmei*. Mauve, ochre-brown, yellow. G. C. 1887, ii. p. 98.
- *xanthoglossum*. Lip yellow, marked with brown. 1883.
- *cristatum*. Yellow, brown. 1878. Hybrid? Syn., *O. cristatum*, var. *cristellum*.
- *cristatum*. Creamy-yellow, brownish-purple, white. Peru.
- *Argus*. Yellow, purple, white. Peru. 1868.
- *canaria*. Yellow, purple, white. Peru. 1868.
- *Daya* num. Honey-colour, white. Peru. 1868.
- *Lehma'nii*. Yellow, brown. Popayan. 1890. Gf. t. 1315, fig. 2.
- *crocatum*. Bright yellow. Peru. 1887.
- *crocidopterum*. Columbia. 1871.
- *cuspidatum*. Green, brown. May. Columbia.
- *platyglossum*. Lip broader.
- *xanthoglossum*. Lip yellow. Columbia. 1881.
- *Dawsonia* num. Rose, crimson. Mexico. 1866.
- *delle'nsæ*. Supposed to be a natural hybrid between *O. Pescatorei* and *O. triumphans*. G. C. 1891, ix. p. 521. A form of *O. excellens*.
- *deltoglossum*. Sulphur, orange, brown. G. C. 1881, xv. p. 202.
- *Denmis'niæ*. White, yellow. Columbia. 1872.
- *densiflorum*. Yellow, red. March. Tanja.
- *dieranophorum*. Yellow, brown. G. C. 1888, iii. p. 330.
- *Dormannia* num. White, red. G. C. 1884, xxi. p. 11.
- *Edithæ*. Warn. Sel. Orch. ser. 3, t. 25. See *O. crispum*, var. *Edithæ*.
- *Edwa'rdi*. Mauve, yellow. Ecuador. 1878.
- *Egerto'ni*. White. April. Guatemala. 1840.
- *Ehrenbergii*. Guatemala. 1842.
- *elegans*. Yellowish, brown, white. Ecuador. 1879.
- *elegantius*. Pale yellow, brown. Ocana. G. C. 1888, iii. p. 200.
- *epidendroides*. Yellow, purple. November. New Grenada.
- *euastrum*. White, mauve, brown, sulphur. G. C. 1857, ii. p. 71.
- *eugenes*. Yellow, white, brown. Columbia.
- *excellens*. Yellow, white, purple. G. C. 1881, xvi. p. 426. Garden, April 1, 1882.
- *chrysome'lanum*. Yellow, spotted. G. C. 1888, iii. p. 522.
- O. facetum*. Light yellow, blotched with cinnamon. G. C. 1881, xv. p. 562. A hybrid.
- *ferruginum*. Dark cinnamon, yellow. G. C. 1883, xix. p. 814.
- *Galeottia* num. White, brownish, yellow. Mexico. 1870.
- *Ghiesbreghtia* num. Mexico.
- *Gloneria* num. Lind. t. 151. See *O. odoratum*, var. *Glonerianum*.
- *gloriosum*. Yellow, brown. 1865.
- *Godseffia* num. Natural hybrid between *O. triumphans* and *O. Lindleyanum*. G. C. 1891, x. p. 728.
- *gracile*. Reddish-brown, white. Ecuador.
- *grande*. 1. Cream, brown. March. Mexico. 1849.
- *labell'o-album*. 1. Yellow, white. December. Guatemala.
- *splendens*. Lip white, with purplish bars. 1872.
- *Williamsia* num. Flowers smaller. 1881. Warn. Orch. t. 163. Syn., *O. Williamsianum*.
- *Grusonia* num. Pale yellow, with almost black spots.
- *Ha'llii*. Yellow, purple. November. Peru. B. M. t. 6237.
- *Linde'ni*. More richly coloured. Lind. t. 184.
- *superbum*. Dark yellow; lip white.
- *xanthoglossum*. Lip yellow. Columbia. 1879.
- *Harrya* num. Brown, yellow, white, mauve. G. C. 1886, xxvi. p. 486, and 1887, ii. p. 168, fig. 41.
- *flavescens*. Yellow. G. C. 1889, vi. p. 38.
- *pavoninum*. Richly marked and scented. G. C. 1889, v. p. 428.
- *hastatum*. Green, red. Mexico.
- *hastilabium*. 1. White, yellow, brown. August. Guatemala. 1848.
- *hebraicum*. Yellow, brown. 1879. Garden, June 3, 1882. Hybrid between *O. crispum* and *O. gloriosum*.
- *aspersum*. Slight variety. Rehb. ii. p. 69, fig. 79.
- *lineoligerum*. G. C. 1883, xix. p. 44.
- *Henni'sii*. Yellow, with brown spots; lip white, brown. Peru or Ecuador. G. C. 1891, x. p. 158.
- *hinnus*. Yellow, brown. G. C. 1891, x. p. 158.
- *histrionicum*. Pale ochre, brown. G. C. 1897, i. p. 512. Hybrid?
- *bellum*. Yellow, chocolate, white. G. C. 1882, xviii. p. 437.
- *Horema'ni*. Yellowish, cinnamon, orange. Columbia. 1879.
- *Hrubya* num. Brown, yellow, white. Peru. G. C. 1888, iv. p. 284.
- *Humea* num. White, brown, yellow. 1876.
- *Hunnevellia* num. Yellow, brown, creamy-white. Columbia. G. C. 1889, vi. p. 67. Greenhouse.
- *hystrix*. Yellow, brown; lip spiny. New Grenada. 1865.
- *serra'tum*. Sulphur-yellow, brown. 1880.
- *Imeschotia* num. Natural hybrid between *O. tripudians* and *O. Lindleyanum*. G. C. 1891, x. p. 758.
- *Inslea'yi*. Yellow, or yellowish-green, with reddish-brown bands. Winter. Mexico. 1840. Syn., *O. Lawrenceanum*.
- *leopardinum*. Flower spotted with purple-brown. Mexico. 1876.
- *pantherinum*. Chestnut-brown, red, yellow.
- *splendens*. Brown, yellow, purple. Mexico. 1868.
- *ioplocon*. Mauve, orange, white. G. C. 1884, xxi. p. 445.
- *Jenningsia* num. See *O. crispum*, var. *Jenningsianum*.

- O. Josephi* nœ. See *O. Andersonianum*.
 — *Kegele* nœ. Yellow, brown, white. Peru. 1877.
 — *Krameri*. Pale violet, yellow, brown-purple. Costa Rica, Mexico. 1868.
 — — *Smithia* num. Ivory white, sulphur.
 — *la* cerum. Yellow, brown. Peru.
 — *la* ve. White, yellow, brown. June. Guatemala. 1841.
 — *latimaculatum*. See *O. crispum*, var. *latimaculatum*.
 — *Laurencea* num. See *O. Inseleyi*.
 — *Lea* num. Yellow, cinnamon, white. G. C. 1882, xvii. p. 525. Hybrid?
 — *lepidum*. Yellow, white, brown. Columbia. G. C. 1883, xx. p. 526.
 — *Leroya* num. Hybrid between *O. crispum* and *O. luteo-purpureum*. Garden, xxxvii. p. 560. Orch. 1891, p. 112.
 — *ligulare*. Orange, brown, yellow, whitish. G. C. 1882, xvii. p. 558. Hybrid?
 — *limbatum*. See *O. crispum*, var. *limbatum*.
 — *Linde* nœ. 2. Yellow. New Grenada. 1852.
 — *Lindleya* num. Yellow, white. New Grenada. 1865.
 — — *Coradi* nei. See *O. Coradinei*.
 — — *ligula* re. See *O. ligulare*.
 — — *mira* ndum. Columbia. 1882. Syn., *O. mirandum*.
 — *Londesboroughia* num. Yellow, brown. Mexico. 1877. Syn., *O. oncidioides*.
 — *longifolium*. Peru.
 — *Lucenia* num. White, reddish-brown. Venezuela. 1886. Lind. t. 65.
 — *luteo-purpureum*. Purple, golden-yellow, white, brown. Winter. New Grenada. Syns., *O. hystrix*, *O. lyroglossum*, and *O. radiatum*.
 — — *Amesia* num. Pale yellow, green. G. C. 1891, ix. p. 344.
 — — *amplissimum*. Yellow, cinnamon. G. C. 1882, xvii. p. 525.
 — — *crispum*. Front part of lip plicate. G. C. 1889, v. p. 232, fig. 41.
 — — *cuspidatum*. Yellow, chestnut-brown. Columbia. 1881.
 — — *facatum*. Yellow. Cinnamon.
 — — *hinnus*. See *O. hinnus*.
 — — *magnificum*. Chestnut-brown. New Grenada. Warn. Orch. Alb. t. 254. Syn., *O. hystrix*, var. *magnificum*.
 — — *mulus*. Yellow, cinnamon-brown. New Grenada. 1878.
 — — *radia* tum.
 — — *scoptrum*. Chocolate-brown, yellow. New Grenada. 1872.
 — — *Vuykstekea* num. Syn., *O. Vuylstekecanum*.
 — *lyroglossum*. Yellow, blotched with brown. Columbia. Rchb. i. p. 65. *O. lyroglossum* of G. C. 1882, xvii. p. 632, fig. 99, is *O. Wilkeanum*.
 — — *macrospitum*. Light sulphur, cinnamon. G. C. 1885, xxiv. p. 70.
 — *maculatum*. 2. Yellow, brown. May. Mexico. 1838.
 — — *antenna* tum. G. C. 1881, xv. p. 688.
 — — *Duoviviera* num. Lemon-yellow, whitish-brown. G. C. 1888, iv. p. 352.
 — — *erosum*. Brown, yellow. Tropical America. 1879. Syn., *O. maculatum*, var. *polyodon*.
 — — *integra* le. Yellowish-white, brown. Mexico. 1871.
 — *matre* nœ. White, purple, yellow. Mexico. 1877.
 — *marginellum*. Light ochre, reddish-brown. G. C. 1882, xviii. p. 680.
 — *Marrriottia* num. White, light ochre, purple, yellow. Natural hybrid. G. C. 1881, xv. p. 168.
 — *Maserebia* num. Natural hybrid. G. C. 1888, iii. p. 618.
 — *O. maxilla* re. Flesh, red, yellow. September. Mexico. 1846.
 — — *membrana* ceum. $\frac{1}{2}$. White, brown. May. Mexico. 1838. G. C. 1881, xv. p. 753.
 — — *minia* tum. See *O. coronarium*, var. *miniatum*.
 — — *mira* ndum. See *O. Lindleyanum*, var. *mirandum*.
 — — *mulus*. See *O. luteo-purpureum*, var. *mulus*.
 — — *Murrellia* num. White, purple, yellow. Columbia. 1875.
 — — *cin* ctum. White, lilac, yellow, red. 1883.
 — — *myan* thum. Peru.
 — — *noevium*. 1. White, purple. June. Central America.
 — — — *ma* jus. May. Larger than the type.
 — — *nebulosum*. White. Spring. Mexico.
 — — — *candidissimum*. White. 1884.
 — — — *ca* nidum. White. 1867.
 — — — *gutta* tum. Spotted with reddish-brown. 1884.
 — — — *pard* num. White, brownish-purple, yellow. Columbia. 1873.
 — — — *Pattisonia* num. White, yellow. Mexico. 1868.
 — — *nevadense*. Chocolate-brown, yellow. Columbia. 1871. Warn. Orch. Alb. t. 131.
 — — *odora* tum. Yellow, chocolate-brown. Winter. Sierra Nevada. B. M. t. 6502. Syn., *O. gloriosum*.
 — — — *baphica* nthum. Yellow, purple. Columbia. 1876. Syn., *O. baphicanthum*.
 — — — *deltoideum*. Sulphur, orange.
 — — — *Gloneria* num. White, spotted with purple-brown. Venezuela. Lind. t. 151. Syn., *O. Glonerianum*.
 — — — *hebraicum*. Pale yellow, brown. Warn. Orch. Alb. t. 85. Syn., *O. hebraicum*.
 — — — *latimaculatum*. Golden, blotched crimson-brown. Columbia. 1871.
 — — — *Lea* num. Yellow, brown. Syn., *O. Leea* num.
 — — — *lineoligerum*. Spotted.
 — — — *stria* tum. Spots elongated. Venezuela. 1872.
 — — — *hemitericum*. White, yellow, cinnamon. G. C. 1883, xix. p. 784.
 — — *Oerste* dii. White, yellow, red. Costa Rica. 1877.
 — — — *ma* jus. Larger than the type. Costa Rica. Warn. Orch. Alb. t. 376.
 — — *oliganthum*. Yellow, brown. Guatemala. 1879.
 — — *oncidioides*. See *O. Londesboroughianum*.
 — — *orientale*. Yellow, brown. Eastern Andes of Ecuador. 1879.
 — — *orna* tum. Creamy-white, spotted red. Columbia. 1891.
 — — *Ortgesia* num. White, yellow, deep red. Columbia. 1891. Gf. t. 1360. Supposed to be a natural hybrid.
 — — *pard* num. Yellow, brown. Peru.
 — — *parvifolium*. Dark purple, white. August. Mexico.
 — — — *pe* ndulum. A synonym of *O. citrosum*.
 — — *Pescato* res. White, pink. April. New Grenada. 1852. G. C. 1884, xxii. p. 332.
 — — — *aurantiacum*. Yellowish.
 — — — *excellentis*. Yellow, white, purple. Garden xxi. p. 330.
 — — — *flavotum*. Yellow.
 — — — *Germinya* num. White, rose-purple, yellow. 1887. Warn. Orch. Alb. t. 305.
 — — — *Hyea* num. Large flowered. Lind. iv. p. 83.
 — — — *leucanthum*. White, orange. G. C. 1887, i. p. 606, fig. 114.
 — — — *limbosum*. Lip bordered with mauve spots. 1880. There is also a variety *splendens*.

- O. Pescadorei* Lindenia' num. White, rose, yellow, blood-red, purple. Lind. t. 178.
- *Lowia* num. Light mauve with darker spots. G. C. 1884, xxi. p. 638.
- *macula* tum. White, lilac, yellow. 1882.
- *Schroderia* num. G. C. 1883, xx. p. 588.
- *stupe* num. White, mauve-purple. G. C. 1887, ii. p. 188.
- *Thomsonia* num. A richly coloured form. G. C. 1889, vi. p. 534.
- *Veitchia* num. White, mauve. Garden, Aug. 9, 1884.
- *Phalæno* psis. See *Mitonia Phalæno* psis.
- *sola* re. Yellow, purple. 1879.
- *pictura* tum. Yellow, spotted with brown. 1891.
- *platy* odon. Yellow. Columbia. 1871. Syn., *O. platyotum*.
- *Pollettia* num. Warn. Orch. Alb. t. 280. See *O. crispum*, var. *Pollettianum*.
- *polyza* nthum. Yellow, brown. Ecuador. 1880. Flor. Mag. t. 453.
- *grandiflo* rum. Deep yellow, brown, whitish. Ecuador. Warn. Orch. Alb. t. 258.
- *præni* tens. Yellow, brown. April. Columbia. 1875.
- *præ* stans. Yellow, brown. Columbia. 1875.
- *præ* st num. Green, blackish, whitish, violet, ochre. Ecuador. 1870.
- *pulche* rum. 1. White, lemon-yellow, purple. Spring. Mexico. 1841. B. M. t. 4104.
- *ma* jus. Larger than the type.
- *pu* rum. Yellow, brown, white, purple. Columbia. 1872.
- *radia* tum. Chocolate, yellow, white. New Grenada. 1865.
- *ramos* ssum. White, with violet, purple, or lilac spots in different varieties. Venezuela. 1875.
- *littiflo* rum. Pale rose-purple, white. New Grenada.
- *viride*. Green. 1880.
- *xanthi* num. Yellow, mauve. 1880.
- *ramulo* sum. Yellowish, spotted with purple-black. Columbia. 1855.
- *retu* sum. Deep yellow. March. Peru.
- *la* tro. Cinnabar-red. Ecuador. 1868.
- *rhynda* nthum. Yellow, brown. G. C. 1887, i. p. 380.
- *rigidum*. Yellow. Peru.
- *ringens*. Yellowish, dark purple. Peru. 1870.
- *Roc* zii. White, blood-purple, yellow. Columbia. 1873.
- *a* lbum. White, yellow. Columbia. 1875.
- *ro* seum. See *Cochlioda rosea*.
- *Ro* ssi. White, lemon yellow. Winter. Mexico. 1839. B. R. 1839, t. 48. Syn. *O. acuminatum*.
- *a* lbens. White, yellow. Mexico. Warn. Orch. Alb. t. 434.
- *Amesia* num. Greenish-white, brown, yellow. Mexico. Warn. Orch. Alb. t. 343.
- *aspe* rum. Pale yellow, brown. 1879. Syn., *O. aspersum*.
- *cærule* scens. White, blue. May. Mexico. Syn., *O. cærulescens*.
- *Ehrenbe* rgii. Rose, crimson. Mexico. 1866. Syns., *O. Dawsonianum* and *O. Ehrenbergii*.
- *Humea* num. White, brown, yellow. 1876. Syns., *O. Humeanum*.
- *ma* jor. Brown, white. Mexico. 1874.
- *ma* jus. Rev. Hort. 1886, p. 496. See *O. Rossii*, var. *rubescens*.
- *Momia* num. White, blood-red, rosy. Mexico. Lind. t. 179.
- *musai* cum. Violet, green, yellow, brown. 1880.
- *pa* llens. Pale ochre. 1880.
- *ru* be scens. Crimson. November. Nica-
ragua. 1849. Syns., *O. rubescens* and *O. Rossii*, var. *majus*.
- O. Ro* ssi *Smead* num. Brown, white, yellow. G. C. 1887, i. p. 799.
- *vir* e scens. White with green spots.
- *Warneria* num. Cream, chocolate, white. Mexico. 1865. Syn., *O. Warnerianum*.
- *ru* be scens. See *O. Rossii*, var. *rubescens*.
- *Ruckeria* num. See *O. crispum*, var. *Ruckerianum*.
- *Sandera* num. See *O. constrictum*, var. *Sandarianum*.
- *sc* e p trum. Yellow, dark purple. 1882.
- *Schilleria* num. Yellow, brown, purple, white. Venezuela. 1884. Lind. t. 82.
- *Schlesingeria* num. A handsomely spotted form of *O. crispum*. Lind. t. 240.
- *Schlieperia* num. Pale yellow with darker spots. Autumn. New Grenada. 1856. Flor. Mag. t. 461.
- *Schröderia* num. White, mauve-purple, yellow. G. C. 1882, xvii. p. 700. One of the many hybrids derived from *O. crispum*. *O. Schröderianum* of G. C. 1887, ii. p. 364, is *Mitonia Schröderiana*.
- *Seri* nga. White, yellow, brownish-red. Seringa, Columbia. 1891.
- *Shuttlewo* rthii. White, reddish-brown, yellow. Hybrid. 1884.
- *spilola* nthum. Whitish, brown. Ecuador. 1872.
- *staura* strum. Yellowish-green, brown, white, mauve. Columbia. G. C. 1887, i. p. 313.
- *staur* o des *Gravesia* num. Ochre, purple-brown, yellow. G. C. 1887, ii. p. 154.
- *stella* tum. White, green. April. Mexico. 1839.
- *stell* micans. Yellow, reddish-mauve, brownish-purple. Natural hybrid. G. C. 1884, xxii. p. 680.
- *stenochi* tum. Yellow, brown. Ecuador. 1872.
- *tentacula* tum. Yellow, white. 1883.
- *tetrapla* sium. White, purplish. Peru. 1875.
- *tripu* dians. Brown, yellowish-green, white, purplish-violet. Columbia. 1871. B. M. t. 6029.
- *Harrya* num. Blackish, pale yellow, mauve. 1883.
- *leucoglo* ssum. Lip whitish.
- *ocula* tum. Brown, yellow, white, violet. Columbia. 1872.
- *xanthoglo* ssum. Canary-yellow, mauve, white. 1881.
- *triu* mphans. Yellow, brown. Tropical America. 1867.
- *ci* nctum. Yellow, maroon, white, brown. 1883.
- *Marsha* llii. Yellow, brown, white, yellow. Columbia. 1869.
- *volu* tile. Flowering axis $4\frac{1}{2}$ feet long. Flowers paler than in the type. Ocaña. 1888.
- *Wilso* ni. Yellow, brown. Columbia. 1869.
- *ulo* pterum. Yellow, brown, white, purplish. Ecuador. 1872.
- *Uroski* nneri. Green, brown, purple. Guatemala. 1859.
- *ve* lleum. 1. Yellow, brown, whitish, violet. Ecuador. 1874.
- *vezati* num. Chestnut-brown, white, olive-green, yellow. Mexico. 1877.
- *vezilla* rum. See *Mitonia vezillaria*. In addition to the varieties mentioned under that genus, the following have been described.
- *a* lbum. White, light yellow. Columbia. Warn. Orch. Alb. t. 227.
- *fastuo* sum. Rosy; lip white.
- *Hillia* num. Rose, purple, yellow. 1880.
- *Larrencea* num. Pink; lip blood-red. 1884.

- O. vesilla'rium* Lehma'nni. Light rose; flowers large. Columbia. 1880.
 — *leucoglossum*. Lip white. 1880.
 — *roseum*. Rosy. 1882.
 — *rube'llum*. White, pink. 1881.
 — *Wiotia'num*. White, light yellow, reddish purple. G. C. 1882, xviii. p. 71.
 — *Victor*. Yellow, brown, white. G. C. 1883, xix. p. 532.
 — *vimina'le*. 1. Brown, white, sulphur, yellow. G. C. 1885, xxiii. p. 108.
 — *virginal'e*. See *O. Alezandrae*, var. *virginal'e*.
 — *Vuysteke'a'num*. Sulphur, orange. 1884.
 — *macula'tum*. Spotted variety. 1884.
 — *Wall'sii*. Red-brown, yellow, white. Columbia. 1870.
 — *Warneria'num*. See *O. Rossii*, var. *Warneria'num*.
 — *Warocque'a'num*. White, purple-brown. Lind. t. 180.
 — *Warzewiczii*. White, purple, Costa Rica. 1862.
 — *Wattia'num*. Yellow, purple, white, claret. G. C. 1890, vii. p. 354. Rchb. ser. 2, i. t. 9.
 — *Weirii*. White, purple. Columbia. 1875.
 — *Wettoni*. A synonym of *Miltonia Warszewiczii*.
 — *Wendlandia'num*. Yellow, spotted with brown. New Grenada. 1889. G. C. 1889, vi. p. 7.
 — *Wilckea'num*. Whitish-yellow. Hybrid between *O. crispum* and *O. luteo-purpureum*. 1878. G. C. 1879, xii. p. 298. Syn., *O. hyroglossum* of G. C. 1882, xvii. p. 632, fig. 97.
 — *albens*. White, reddish-brown, yellow. Garden hybrid. Lind. t. 35.
 — *atro-purpureum*. Red, edged with yellow. Columbia. 1891. Syn., *O. Zaldua*.
 — *pa'llens*.
 — *pa'llidum*. Pale sulphur, brown. 1882.
 — *Rothschidia'num*. Yellow with reddish-brown blotches. Bogota. 1891. Rchb. ser. 2, i. t. 22.
 — *sulphureum*. Sulphur, red. G. C. 1884, xxi. p. 306.
 — *Williamstania'num*. See *O. grande*, var. *Williamstania'num*.
 — *Youngii*. Yellow, brown. Garden, xxxvii. p. 84. Warn. Orch. Alb. t. 406.
 — *Zaldua*. See *O. Wilckeanum*, var. *atro-purpureum*.

Odontoloma. (From *odous*, a tooth, and *loma*, an edge; fronds or leaves tooth-notched. Nat. ord., *Filices*.)

Stove ferns, with brownish-yellow spores. See FERNS.

- O. Borya'num*. May. Isle of Luzon.
 — *pulchellum*. May. Isle of Luzon.
 — *tenuifolium*. May. E. Ind.

Odontosoria. (From *odous*, a tooth, and *soros*, a leaf; allusive to the form of the sori. Nat. ord., *Filices*—*Polypodiaceae*.)

Stove ferns. See FERNS.

- O. aculeata*. W. Indies.
 — *tenuifolia*. Malay Archipelago.

Odontospermum. (From *odous*, a tooth, and *sperma*, a seed. Nat. ord., *Compositae*. Syn., *Asteriscus*.)

Hardy or greenhouse herbs, sometimes becoming shrubby. Seeds. Cuttings under a hand-light.

- O. aquaticum*. $\frac{1}{2}$. Yellow. July. S. Europe. 1731. Syn., *Euphthalmum aquaticum*. Hardy annual.
 — *maritimum*. Yellow. S. Europe. G. C. 1884, xxii. p. 392, fig. 70. Syn., *Asteriscus maritimus*.
 — *sericeum*. 4. Yellow. June. Canaries. 1779. Syn., *Euphthalmum sericeum*. B. M. t. 1836. Greenhouse evergreen shrub.
 — *stenophyllum*. 3. Yellow. June. Canaries. 1818. Syn., *Euphthalmum stenophyllum*. Greenhouse evergreen shrub.

Ceeco'clades. (From *oikeo*, to inhabit, and *klados*, a branch. Nat. ord., *Orchideae*; Tribe, *Vandee-Sarcantheae*.) In the Genera Plantarum the bulk of this genus is included in **Saccolabium**, the only species in cultivation, however, is referred to **Angræcum**.

Ce. falcata. See *Angræcum falcatum*.

Cedemo'ne. A synonym of **Herminiera**.

Cenocar'pus. (From *oinos*, wine, and *karpos*, a fruit; yields palm-wine and oil. Nat. ord., *Palmeae*; Tribe, *Areceae*. Allied to *Areca*.)

Stove palm. Seeds, but generally suckers; rich, loamy soil. Winter temp., 60°; summer, 60° to 90°.

- Ce. Bacaba*. 60. Para. 1849.
 — *Batana*. 40. S. Amer. 1820.
 — *caracasensis*. Venezuela. 1849.
 — *minora*. 10. Fruit blackish-purple.
 — *rubescens*. New Grenada. 1846.

Ceno'plea. (Nat. ord., *Rhamnaceae*.) A synonym of **Berchemia**.

Ce. lineata. See *Berchemia lineata*.

— *volvulifolia*. See *Berchemia volvulifolia*.

Ceno'thera. Evening Primrose. (From *oinos*, wine, and *thera*, imbibing; the roots of *biennis* supposed to be an incentive to drinking wine. Nat. ord., *Onagraceae*.)

Annuals and biennials, by seed in the open border, in April in light, rich soil; 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.

HALF-HARDY.

- Ce. acutifolia*. $\frac{1}{2}$. White. July. Chili. 1821.
 — *Herbaceous*. B. R. t. 763.
 — *cheiranthifolia*. $\frac{1}{2}$. Yellow. July. Chili. 1823. Evergreen.
 — *Drummondii*. $\frac{1}{2}$. Yellow. August. Texas. 1833. Herbaceous. B. M. t. 3361.
 — *rosea*. 1. Pink. June. Peru. 1783. Herbaceous. B. M. t. 347.

HARDY HERBACEOUS.

- Ce. anisoloba*. 2. White. June. Chiloe. 1828. Swt. Fl. Gard. ser. 2, t. 105.
 — *cæspitosa*. 1. White. June. N. Amer. 1811.
 — *cardiophylla*. 1. Yellow. California. 1833.
 — *eximia*. White. June. California. 1889. Syn., *Ce. marginata* of some gardens.
 — *Fraseri*. $\frac{1}{2}$. Yellow. June. N. Amer. 1811. B. M. t. 1674.
 — *variegata*. 1. Yellow. July. Gardens.

- Ce. fruticos* sa. 3. Yellow. August. N. Amer. 1737. B. M. t. 332.
 — *ambigua*. 1. Yellow. July. N. Amer. 1813.
 — *indica*. 1½. Yellow. July. India. B. R. 1841. t. 11.
 — *glauca*. 2. Yellow. June. N. Amer. 1812. B. M. t. 1606.
 — *variegata*. 2. Yellow. July.
 — *gracilis*. 1. Yellow. 1833.
 — *grandiflora*. Yellow. July. N. America. 1860. B. M. t. 2068.
 — *hybrida*. 1. Yellow. July. N. Amer. 1813.
 — *macrocarpa*. 1. Yellow. June. N. Amer. 1811. Swt. Fl. Gard. t. 5.
 — *missouriensis*. 1. Yellow. June. N. Amer. 1818. B. M. t. 1592.
 — *nervosa*. 2. Yellow. July. 1827.
 — *Nivertiana*. Blush-white, carmine. 1872. Syn., *Godetia Nivertiana*.
 — *Nutta* lili. White. June. N. Amer. 1811.
 — *paUlida*. 1½. White, red. June. America. 1826. B. R. t. 1142.
 — *pu'nila*. ½. Yellow. July. N. Amer. 1757. B. M. t. 355.
 — *pusilla*. ½. Yellow. July. N. Amer. 1817.
 — *Sello* wii. Monte Video. 1831.
 — *serotina*. 1½. Yellow. September. N. Amer. 1820. Swt. Fl. Gard. t. 184.
 — *serrulata*. 1. Yellow. June. N. Amer. 1824. Swt. Fl. Gard. t. 133.
 — *speciosa*. 1. White. June. N. Amer. 1821. B. M. t. 3189.
 — *ma'jor*. 6. White. July. N. Amer.
 — *tanacetifolia*. California. 1883.
 — *taraxacifolia*. ½. White. June. Peru. 1825. Swt. Fl. Gard. t. 294.
 — *tetragona*. 1½. Yellow. July. N. Amer. 1820.
 — *Whitneyi*. 1. Rosy, crimson. California. 1870. Syn., *Godetia Whitneyi*.
 — *You'ngii*. 2. Yellow.
- HARDY BIENNIALS.
Ce. albicans. 2. Whitish. June. Peru. 1823.
 — *albicaulis*. ½. White. June. N. Amer. 1811.
 — *biennis*. 4. Yellow. July. N. Amer. 1622.
 — *grandiflora*. Yellow. B. R. t. 1604. Syn., *Ce. Lamarckiana*.
 — *bifrons*. 1½. Purple. August. Texas. 1835. B. M. t. 3674.
 — *crucifolia*. 3. Yellow. July. N. Amer. 1824.
 — *erosa*. 2. Citron-coloured. July. Cape of Good Hope. 1828.
 — *globularis*. 3. Yellow. July. 1824.
 — *inca* na. 2. Yellow. July. N. Amer. 1820.
 — *Lamarckiana*. See *Ce. biennis*, var. *grandiflora*.
 — *longiflora*. 3. Yellow. August. Buenos Ayres. 1776. B. M. t. 365.
 — *media*. 2. Yellow. July. N. Amer. 1823.
 — *nocturna*. 2. Yellow. July. Cape of Good Hope. 1790. Jacq. Ic. t. 455.
 — *odora* ta. 2. Yellow. June. S. Amer. 1790. Jacq. Ic. t. 456.
 — *pubescens*. 1. White. July. S. Amer. 1825.
 — *salicifolia*. 2. Yellow. July. 1824.
 — *Simsia* na. 3. Yellow. July. Mexico. 1816.
 — *stria* ta. Yellow. July. 1822.
 — *villo* sa. 2. Yellow. July. Cape of Good Hope. 1791.

HARDY ANNUALS.

- Ce. amoena*. 1. Purple. July. N. Amer. 1825.
 — *clavata*. 1. White. July. Mexico. 1827.
 — *concinna*. ½-1½. Pink. September. Chili.
 — *corymbosa*. 3. Yellow. September. Mexico. 1816. B. R. t. 1974.
 — *decumbens*. 1½. Purple. August. California. 1827. B. R. t. 1221. Syn., *Godetia decumbens*.
 — *densiflora*. 3. Purple. August. California. 1880. B. E. t. 1953.
 — *humifusa*. Prostrate. Pink. Chili. B. R. t. 1829.
 — *lepida*. 1½. Pink. August. California. 1835. Syn., *Godetia lepida*. B. R. t. 1849.
 — *Lindleyi*. 1½. Purple. August. N. Amer. 1826. E. M. t. 2832. Syn., *Godetia Lindleyi*.
 — *linearis*. 1½. Yellow. June. N. Amer. 1822. Perennial.
 — *purpurea*. 1. Purple. June. N. America. 1794. B. M. t. 352. Syn., *Godetia purpurea*.
 — *Purshii*. White. July. N. Amer. 1811.
 — *quadrivulnera*. 1½. Pink. September. N. Amer. 1826. B. R. t. 1119. Syn., *Godetia quadrivulnera*.
 — *Romanzovii*. 1. Purple. June. N. Amer. 1827. Syn., *Godetia Romanzovii*. B. M. t. 562.
 — *rosea*. 1. Pink. Mexico. 1798. B. M. t. 347. Syn., *Godetia rosea*.
 — *alba*. 1. Red, white. May. Nepal. 1827. Swt. Fl. Gard. t. 268. Syn. *Godetia roseo-alba*. Perennial.
 — *rubicunda*. 2. Purple-flame-coloured. July. California. 1834. Syn., *Godetia rubicunda*. B. R. t. 1856.
 — *sinuata*. 3. Yellow. July. N. Amer. 1770. B. M. t. 3392.
 — *minima*. ½. Yellow. July. N. Amer. 1825.
 — *stricta*. 1½. Yellow. June. 1882.
 — *tenella*. ½. Purple. June. Chili. 1823. B. M. t. 2424. Syn., *Godetia tenella*.
 — *tenuifolia*. 1½. Purple. August. Chili. 1828. Syn., *Godetia tenuifolia*.
 — *triloba*. ½. Yellow. June. N. Amer. 1822. B. M. t. 2556. Perennial.
 — *vininea*. 2. Purple. July. California. 1826. B. M. t. 2873. Syn., *Godetia vininea*.
 — *vinosa*. 2. Blush. July. California. 1835. Syn., *Godetia vinosa*.
 — *virgata*. 1½. Purple, white. July. Peru. 1823.

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 *A'gave geminiflora*, in all which cases suckers are the result, is explicable on the foregoing principle."

O'ftia. (Derivation not explained. Nat. ord., *Myoporineae*. Syn., *Spielmannia*.)

Greenhouse evergreen shrub. Cuttings of young shoots in sand, under a bell-glass, at any time except winter; sandy loam and leaf-mould. Winter temp., 38° to 45°.

O. africa'na. 3. White. July. Cape of Good Hope. 1710. Syn., *Spielmannia africa'na*. B. M. t. 1839.

Ogechee Lime. *Nyssa candi'cans*.

Ohiggi'nsia. A synonym of **Hoffmannia**.

Ohlendo'rria. (In honour of Dr. C. F. Ohlendorff, of Holstein. Nat. ord., *Scrophulariaceæ*.)

Greenhouse undershrub. Sandy peat. Cuttings of half-ripened shoots; seeds.

O. procu'mbens. 2. Blue. August. South Africa. 1836. Syn., *Aptosimum depressum*. B. E. t. 1832.

O'idium. A group of minute fungi forming the "mildew" on some plants, c.g., *Oidium Chrysanthem*, on the *Chrysanthemum*. They consist of numerous interwoven filaments forming a white coating over the parts attacked. The ends of some of these filaments become erect, and divided by transverse partitions into spherical or barrel-shaped cells, which at length fall off and are capable of reproducing the *Oidium*. The investigation of the life history of some of the species has shown that reproductive bodies are also formed in special cells (*asci*) placed inside receptacles or *perithecia*. Other members of this group are:—*Erysiphe graminis*, on the leaves and stems of Grasses; *Oidium Tuckeri*, on grapes; *Sphaerotheca Castagnei* on Hops, etc. Being chiefly on the external parts of plants, they yield to the sulphur treatment.

Oil Nut. *Ricinus commu'nis*.

Oil Palm. *Elæ'is*.

O'lux. (From *olax*, furrowed; flowers partially furrowed, or imbricated. Nat. ord., *Olacineæ*; Tribe, *Olaceæ*.)

Stove, white-flowered, evergreen climbers, from the East Indies. Cuttings of ripened shoots in sand, under a bell-glass, in heat; sandy peat, fibry loam, and a little dried leaf-mould. Winter temp., 50° to 55°; summer, 60° to 80°.

O. imbrica'ta. 8. December. 1820.
— *sea'ndens*. 8. December. 1820.

Oldenla'ndia. (Named after H. B. Oldenland, a Danish plant-collector. Nat. ord., *Rubiaceæ*; Tribe, *Hedyotideæ*. Allied to *Hedyotis*.)

Slender stove or greenhouse shrubs. 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 hot-bed, 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. White. July. Cape of Good Hope. 1824. Annual.

— *corymbo'sa*. White. June. Jamaica. 1739. Annual.

— *Deppia'na*. 1. White. June. Mexico. 1835. Stove evergreen. Kn. and West, t. 1.

— *umbella'ta*. †. White. July. E. Ind. 1792.

Oldfie'ldia. (In honour of R. A. Oldfield, a merchant at Sierra Leone. Nat. ord., *Euphorbiaceæ*; Tribe, *Phyllanthheæ*.)

Stove evergreen tree. Cuttings under a bell-glass in heat. Sandy soil well drained.

O. africa'na. W. Africa. Its timber is believed to be the African Oak or Teak.

Old Man. *Artemi'sia abro'tanum* and *Kosmari'nus officina'lis*.

Old Man's Beard. *Cle'matis vi'ta'lba*, *Saxi'fraga sarmento'sa*, and *Til'la'ndsia usneo'ides*.

O'lea. Olive. (From *elaia*, the olive. Nat. ord., *Oleaceæ*; Tribe, *Oleineæ*.)

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, fibry 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.

HARDY EVERGREENS.

O. ilici'fo'lia. White. Japan.

GREENHOUSE EVERGREENS.

O. america'na. 6. June. N. Amer. 1758.

— *ape'tala*. Andr. Rep. t. 316. See *Natalœa longifolia*.

— *arbo'rea*. 20. August. 1825.

— *buzi'fo'lia*. 15. July. South Europe.

— *cape'nsis*. 5. July. Cape of Good Hope. 1780. B. E. t. 613.

— — *undula'ta*. See *O. laurifolia*.

— *europæ'a*. 5. July. Portugal 1821. Syn., *O. Oleaster*. Wild olive.

— — *sati'va*. August. South Europe. 1570.

— *exce'lsa*. 15. May. Madeira. 1784.

— *ferrugi'nea*. 15. July. Cape of Good Hope.

— *fra'grans*. B. M. t. 1552. See *Osmanthus fragrans*.

— *lati'fo'lia*. 15. July. South Europe.

— *lauri'fo'lia*. 6. July. South Africa. 1741. B. M. t. 3089. Syns., *O. capensis*, var. *undulata*, and *O. undulata*.

— *longi'fo'lia*. 15. July. South Europe.

— *obli'qua*. 15. July. South Europe.

— *Olea'ster*. See *O. europæa*.

— *panicu'la'ta*. 10. July. N. Holland. 1825.

— *undula'ta*. See *O. laurifolia*.

— *verruc'o'sa*. 6. April. Cape of Good Hope. 1814.

STOVE EVERGREENS.

O. dio'i'ca. 30. March. E. Ind. 1818.

— *la'ncea*. 20. August. Isle of France. 1819.

— *robu'sta*. June. Sylhet. 1824.

— *Roxburghia'na*. 15. August. E. Ind. 1820.

Oleander. *Ne'rïum*.

Olea'ndra. (The genus is founded on *O. nerifo'rmiss*, or oleander-like. Nat. ord., *Filices*.)

Stove ferns, with yellow spores. See FERNs.

- O. articulata*. June. India. 1837.
 — *Cumi'ngii*. June. Isle of Luzon.
 — *hirtella*. 1. Surinam.
 — *neriifolmis*. May. E. Ind.
 — *nodo'sa*. May. S. Amer. 1840.
 — *Walk'chii*. May. Nepaul.

Olea'ria. (From *olea*, an Olive-tree; because some of the species resemble the Olive-tree. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*. Allied to *Aster*.)

Greenhouse or hardy ornamental evergreen shrubs. Seeds, or cuttings of the young shoots in spring, in a gentle heat. Sandy loam. Summer temp., 50° to 80°; winter, 40° to 55°. The genus *EURYBIA* is a synonym of this.

- O. alpi'na*. 6. White. May. New Zealand. 1851.
 — *argophylla*. 10. White. March. New S. Wales. 1834. Syns., *Aster argophyllus*. B. M. t. 1563, and *Eurybia argophylla*.
 — *denta'ta*. Rosy. New S. Wales. 1872.
 — *Forst'eri*. White. New Zealand. 1866.
 — *furfura'cea*. 10. New Zealand.
 — *glutinosa*. Pale violet. Victoria. Syn., *Eurybia glutinosa*.
 — *gummo'sa*. Wien. Gart. Zeit. 1889, p. 123.
 — *Gunnia'na*. 8. White. September. Tasmania. Syn., *Eurybia Gunniana*, G. C. 1882, xvii. p. 732.
 — *Haa'stii*. White. New Zealand. 1872.
 — *ins'i'gnis*. White. New Zealand. B. M. t. 7034. Greenhouse.
 — *lyra'ta*. See *O. stellulata*, var. *lyrata*.
 — — *quercifolia*. See *O. stellulata*, var. *quercifolia*.
 — *macrodo'nta*. White. New Zealand. G. C. 1886, xxvi. p. 305, fig. 62. Syn., *O. dentata* of Hooker.
 — *myrsinoi'des*. 3. Pale purple. May. Victoria. 1835. Syns., *Aster myrsinoides* and *Eurybia myrsinoides*.
 — — *erube'scens*. 3. Red. May. New S. Wales. Syns., *Aster erubescens* and *Eurybia erubescens*.
 — *ni'tida*. White. New Zealand. G. C. 1886, xxvi. p. 45, fig. 10.
 — *panno'sa*. White. Australia. 1852.
 — *persooni'des*. 3. White. Tasmania. Syn., *Eurybia alpina* of Paxt. Fl. Gard. ii. p. 84.
 — *ramulo'sa*. 2. White. March. New S. Wales. 1818. Gf. t. 1073, figs. a-b. Syns., *Aster aculeatus*, *A. exasperatus* and *Eurybia aculeata*.
 — *stellula'ta*. 2. Violet. June. Tasmania. 1823. Syn., *Aster stellulatus*.
 — — *lyra'ta*. 3. White. September. New S. Wales. 1812. Syns., *O. lyrata* and *Aster lyratus*.
 — — *quercifolia*. Australia. Syns., *O. lyrata*, var. *quercifolia* and *Eurybia lyrata*, var. *quercifolia*. Gf. t. 884.

Oleaster. *O'lea europæ'a*.

Oleoba'chia. (Derivation unknown. Nat. ord., *Sterculiaceæ*.) See *Sterculia*.

O. macrophylla. } See *Sterculia rupestris*.
 — *palm'stris*. }

Olfersia. (Named after *Olfers*, a German botanist. Nat. ord., *Filices*.) Now united to *Acrostichum*.

Stove ferns, with yellowish-brown spores. See *FERNs*.

- O. a'podum*. June. W. Ind. 1824.
Blumea'num. April. Isle of Luzon

- O. callosifolium*. August. Java. 1840.
 — *cervi'na*. May. W. Ind. 1840.
 — *conforme*. August. Cape of Good Hope. 1841.
 — *coreovade'nsis*. May. Brazil. 1837.
 — *longifolium*. 1. W. Ind. 1841.
 — *obtusifolium*. June. Isle of Luzon.
 — *scelopendrifolium*. August. Brazil. 1841.
 — *si'mplicz*. 1. July. Jamaica. 1793.
 — *squamosum*. July. W. Ind.
 — *villo'sum*. 1. July. Jamaica. 1843.
 — *viscosum*. August. W. Ind. 1826.

Olibanum. *Boswe'llia*.

Olive. *O'lea* and *Elæa'gnus*.

Olive-Bark-tree. *Terminalia Cata'ppa*.

Olive-Wood. *Elæode'ndron*.

Omala'nthus. See *Homalanthus*.

Omime Plant. *Plecta'nthus*.

Omphalo'bium. (From *omphalos*, the navel, and *lobus*, a pod. Nat. ord., *Connaraceæ*.) See *Connarus*.

The beautiful zebra-wood of the cabinet-makers is that of *O. africa'num*.

- O. africa'num*. See *Connarus africanus*.
 — *indicum*. See *Connarus monocarpus*.

Omphal'odes. Venus's Navelwort. (From *omphales*, the navel, and *eidos*, like; referring to the seed. Nat. ord., *Boraginææ*.)

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*. Blue. April. Arabia. 1836. Biennial.
 — *linifolia*. 1. White. July. Portugal. 1748.
 — *littora'lis*. 1. White. July. France. 1826.
 — *scorpioi'des*. 1. Blue. July. Bohemia. 1825.

HARDY HERBACEOUS.

- O. amplexicaul'is*. 1. White. July. Spain. 1823.
 — *Lucifolia*. Pink, changing to blue. Asia Minor. 1873. B. M. t. 6047.
 — *myosotoi'des*. 1½. Brush. September. Russia. 1838.
 — *ni'tida*. 2. White. May. Portugal. 1812.
 — *sempervi'rens*. 2½. Blue. June. Britain.
 — *ve'rna*. ½. Blue. March. South Europe. 1833.
 — — *alba*. White. March. 1884.

Onci'dium. (From *ogkos*, a tumour; referring to excrescences on the base of the lip, or labellum. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidiææ*. 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, placed 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 fibry peat laid round the lower part of the plants, provided the base of the leaves is not covered. Hardy kinds, as *flexuosum*, 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. acina'ceum*. Violet, white, carmine. Peru. 1866.
- *ac'milum*. Reddish-brown and yellowish-brown, violaceous. Columbia. 1872.
- *alcic'o'rne*. Yellow. Columbia. 1872.
- *alti'ssinum*. 4. Yellow, brown. March. Panama. 1793. B. M. t. 2990.
- *am'ictum*. 1. Yellow, brown - blotched. April. Brazil. 1846. B. R. 1847, t. 66.
- *amphi'a'tum*. 2. Yellow, brown. March. America. 1832. B. R. t. 1699.
- — *maj'or*. 1. Yellow. March. Guatemala. 1840.
- *andi'genum*. Ochre, violet, orange. Ecuador. 1869.
- *annula're*. Yellow, brown. Columbia. 1875.
- *ascen'dens*. Yellow. April. Guatemala. 1837.
- *aurat'rium*. Yellow, brown. Bolivia. G. C. 1834, xxii. p. 394.
- *aur'o'sum*. 3. Yellow, brown. Peru. 1866.
- *Balderra'mæ*. Yellow, brown. Columbia. 1873. Syn., *O. Baldevianæ*.
- *barba'tum*. 1½. Yellow. April. Brazil. 1818.
- — *cilia'tum*. Brown, yellow. January. Brazil. 1818.
- *Barke'ri*. 1. Yellow. April. Mexico. 1840. Paxt. Mag. xiv. p. 97.
- *Batemania'num*. Yellow. April. Mexico. 1838. Kn. and West. t. 137.
- — *ram'o'sum*. Yellow. Brazil.
- — *spilo'pterum*. ½. Brown, yellow. February. Brazil. 1844.
- *Bau'e'ri*. Yellow, brown. April.
- *bicall'o'sum*. 1. Orange, brown. July. Panama. 1842. B. M. t. 4148.
- *bi'color*. ½. Yellow. September. Mexico. 1841. B. R. 1843, t. 66.
- *bicornu'tum*. 1. Yellow-spotted. June. Rio Janeiro. 1830. B. M. t. 3109.
- *bifo'tium*. ½. Yellow, purple. July. Monte Video. 1811. B. M. t. 1491.
- — *pa'llidum*. ½. Pale yellow. July. Monte Video. 1832.
- *brachya'ntrum*. Brown, yellow. Mexico. 1871.
- *brachyphy'llum*. Yellow, brown. July. Mexico. 1836.
- *Brav'ni*. Yellow, brown. 1886. Gfl. t. 1235, figs. a-c.
- *Brienia'num*. Yellow. Paraguay. G. C. 1831, xv. p. 40.
- — *sta'vida*. Yellow. Paraguay. 1881.
- — *ru'fida*. Cinnamon. Paraguay. 1881.
- *Brunleesia'num*. Greenish-yellow, purple-brown, white, red. G. C. 1883, xix. p. 340.
- *bryolo'photum*. Golden; the flowers stand singly among a moss-like mass of greenish abortive flowers. Central America. 1871.
- *cala'nthum*. Yellow. Ecuador. 1870.
- *caloglo'ssum*. Yellow, sepia, reddish-brown, purple. Tropical America. 1885.
- *ca'ndidum*. See *Palumbina candida*.
- *Carde'ri*. Brown, white, yellow, pink. Colombia. 1875.
- *carina'tum*. Brown, yellow. August. Kalapa. 1838.
- *carthagin'e'nse*. 4. Olive. May. Carthage. 1791. B. C. t. 662.
- — *sangu'i'neum*. Crimson. La Guayra.
- — *Sua'rtzii*. White, purple. Jamaica.
- *Cavendishia'num*. Yellow. Guatemala.
- *Cebolle'ti*. 1. Yellow. April. W. Ind. 1825. B. M. t. 3568.

- O. cheiro'phorum*. Yellow, white. Columbia. 1860.
- *chry'sopa*. Light brown, yellow. G. C. 1883, iii. p. 105.
- *chryso'rha'phis*. Pale yellow. Brazil. G. C. 1888, iii. p. 72.
- *chryso'rria*. Yellow, brown. Ecuador. 1880.
- *chrysothy'rsus*. Yellow, green, brown. S. Brazil. 1867.
- *cilia'tum*. ½. Yellow, red. January. Brazil. 1818. B. R. t. 1660.
- *citri'num*. 5. Yellow. August. Trinidad. B. R. t. 1758.
- *co'ncolor*. ½. Lemon. May. Organ Mountains. 1839. B. M. t. 3752.
- *confrago'sum*. Straw. July. Mexico. 1835.
- *corni'gerum*. ½. Yellow. July. Brazil. 1829. B. M. t. 3486.
- *cri'spum*. 3. Orange. June. B. M. t. 3499.
- — *lu'teum*. Yellow. May. Organ Mountains. 1838.
- — *oliva'ceum*. Olive-green, yellow, purple-black. 1877.
- — *subla've ochra'ceum*. Ochre-brown. G. C. 1888, iv. p. 756.
- *cri'sta-ga'lli*. Lemon-yellow, pink. Central America. 1870.
- *croco'di'nceps*. Greenish-sulphur, cinnamon. Mexico. 1885.
- *Cra'e'sus*. Dark-brown, yellow. Tropical America. 1872.
- *crucia'tum*. Yellow, red, white. Syn., *O. pubes*, var. *flavescens*.
- *cryptoco'pis*. Brown, yellow, whitish. Peru. 1870.
- *cuculla'tum*. Red, purple. February. Quindia. Paxt. Fl. Gard. t. 87.
- — *Daya'num*. White, purple. Columbia. 1871.
- — *giga'n'teum*. Larger than the type. Garden, August 19, 1882.
- *machrochi'tum*. Chocolate, rosy, yellow. 1867.
- — *phalæno'psis*. Brown, white, purple, yellow. Peru. 1868.
- — *spathula'tum*. Sepals and petals spotted, lip spotted at base.
- *cu'rtum*. Brown, yellow. Brazil. 1847. B. R. 1847, t. 66.
- *dactylo'pterum*. Yellow, brown. Columbia. 1875.
- *dasyta'lix*. Columbia. 1879.
- *dasyty'le*. ½. Pale yellow, brown-purple. Brazil. 1873.
- *deltoid'eum*. 1. Yellow. October. Luna. 1836. B. R. t. 2006.
- *deto'rsum*. Light brown, yellow. G. C. 1888, iii. p. 392.
- *Devonia'num*. 2. Yellow, brown. January. Guatemala. 1836.
- *diade'ma*. 3. Chocolate, yellow. Cool region of Equatorial America. 1866.
- *dimor'phum*. Yellow, brown. Brazil. 1870.
- *di'odon*. Brown, yellow. 1880.
- *divarica'tum*. 1½. Yellow, orange, brown. December. Brazil. 1826. B. R. t. 1050.
- — *cu'preum*. 1½. Yellow, copper. December. Brazil. 1836.
- *du'bium*. Brown, white, purple. 1874.
- *echina'tum*.
- — *Bachkousia'num*. Yellow. Mexico. 1875.
- *elegant'i'ssinum*. Brown, yellow, purplish-black. Brazil? 1877.
- *endo'charis*. Bright orange. G. C. 1884, xxi. p. 206.
- *eury'chine*. Pale reddish-ochre, yellow. G. C. 1883, xx. p. 812.
- *euzanthi'num*. Yellow, red. Brazil. 1869.
- *exaspera'tum*. Brown, yellow. Ecuador. 1871.
- *excava'tum*. Yellow. May. Guatemala. 1840.

- O. falcipetalum*. Brown. August. Merida.
— fimbriatum. Yellow. Brazil.
— flabelliferum. Brown, purple. July. Brazil. 1843. *Paxt. Mag.* xvi. p. 65.
— flexuosum. 1½. Yellow, brown. June. Brazil. 1818. *B. M. t.* 2203.
— — ma'jor. 1½. Yellow. June. Brazil. 1839.
— radiatum. Yellow, purple-brown. Brazil. 1872.
— Forbesii. 1. Scarlet, yellow. September. Organ Mountains. 1837. *B. M. t.* 3705.
— Borwickia'num. Lip blotched. 1879.
— ma'ximum. Large flowered variety. *Lind. t.* 164.
— Measuriesia'num. Golden-yellow, bordered with purplish-brown. *G. C.* 1891, x. p. 227.
— Forke'ii. Yellow, crimson. June. Mexico. 1844.
— Gardne'ri. Yellow, red-brown. Brazil. 1879.
— Gaultie'ri. Brown, yellow, red. Brazil. 1869.
— globuliferum. Yellow, red. Columbia.
— — costaricensae. Yellow, red. Costa Rica. 1871.
— glossomystax. Yellow, brown, white. Columbia. 1879.
— graminifolium. Yellow. Mexico. *Syn., Cyrtochilum graminifolium.*
— — fl'ipes. Brown, yellow. Guatemala.
— — Wra'yae. Brown, yellow. Mexico. 1838.
— grandiflorum. Yellow. Summer. Columbia. 1881. *G. C.* 1881, xv. p. 782.
— guttatum. Yellow, brown. April. Jamaica. 1838.
— — fulgens. Jamaica. 1838.
— — ma'jus. Jamaica. 1838.
— — roseum. Rose, yellow. Mexico. 1880.
— gyrolobon. Yellow, brown. Central America? 1869.
— haematocochilum. ½. Green, red. September. New Grenada. 1857. *Paxt. Fl. Gard.* t. 6.
— Harrisonia'num. 1. Yellow-spotted. October. Brazil. 1830. *B. R. t.* 1569.
— Hartwegii. Brown. Peru.
— — parviflorum. Ecuador. 1870.
— hasta'num. Brown, yellow. August. Mexico. 1840.
— — hemimelaenum. Blackish-purple, occasionally with whitish-green spots. *G. C.* 1887, ii. p. 127.
— — Roe'zii. Yellow, brown. Mexico.
— hebraicum. Yellow, maroon. Columbia. 1876.
— Henckmanni. Pale rose. May. Mexico. 1839.
— hi'ans. Brown, yellow. May. Brazil. 1837.
— holochrysum. A synonym of *O. onustum*.
— Hooke'ri. 1. Yellow. August. Brazil. *Syn., O. raniferum*, var. *najus*, *B. M. t.* 3712.
— Hrubya'num. Brown, yellow. *G. C.* 1883, xix. p. 562.
— Hu'bschii. Yellow, brown, orange. Ecuador. *G. C.* 1885, xxiv. p. 650.
— Huntia'num. Yellow, red. September. Brazil. *B. M. t.* 3806.
— hyphaematicum. Yellow, brown. Central America. 1869.
— incu'rum. Bluish-white. July. Mexico. 1839. *B. R.* 1845, t. 64.
— insculptum. Cinnamon, pale yellow. Tropical America. 1872.
— Insole'yi. Yellow, brown. July. Mexico. 1840. *Paxt. Mag.* viii. p. 265.
— intermedium. 2. Orange. March. Cuba. *Kn. and West.* t. 60.
— iridifolium. ½. Yellow. June. Mexico. 1835. *B. R. t.* 1911.
— Jamesoni. Yellow, violet-purple. Peru. 1877.
- O. Jonesia'num*. Pale ochre, brown, purple.
— — fl'orum. Ochre with green spots; lip yellowish. 1888. *Warn. Orch. Alb.* t. 360.
— — phaeanthum. Brownish. Paraguay. *Rchb. t.* 21.
— Kapple'ri. Yellow, brown. 1880.
— Kienastia'num. Yellowish, brown. Peru. 1878.
— Krameria'num. Yellow, brown. Ecuador. 1873.
— — respiciens. Yellow, white, purple, mauve. *G. C.* 1888, iii. p. 360.
— la'cerum. 1½. Yellow. April. Panama. 1844. *B. R.* 1846, t. 27.
— lamelligerum. Brown, yellow, violet. Ecuador. 1877.
— Lancea'num. 1½. Yellow, purple. August. Surinam. 1834. *B. R. t.* 1887.
— — Louvezia'num. Yellow, reddish-brown; lip white, violet. 1882.
— — ma'jus. Green, purple. August. Guiana. 1836.
— Lanabergii. Yellowish-green, brown. Venezuela. 1876.
— Larkinia'num. Chocolate-brown, bright yellow. Organ Mountains. *Warn. Orch. Alb. t.* 405. The same name was given in 1891 to a supposed hybrid between *O. curtum* and *O. Barclayanum*.
— Lemonia'num. ¾. Yellow-spotted. March. Havannah. 1836. *B. R. t.* 1789.
— Leopoldia'num. White, mauve-purple; yellow. Andes. *Lind. t.* 274. A panicle often bears 300 flowers.
— lepidum. Yellow, brown, purple. Ecuador. 1870.
— lepturum. Light yellow with brown spots. *G. C.* 1886, xxv. p. 41.
— leucochilum. 1. Yellow, brown. August. Guatemala. 1835. *Paxt. Mag.* vii. p. 241.
— — Dawsonia'num. Yellowish, blackish-purple. Mexico. 1878.
— — speciosum. Yellowish-green, brown, white. Mexico. 1874.
— leucotis. Yellow. Columbia. *G. C.* 1879, xii. p. 424.
— Lie'tzei. Deep ochre, tawny yellow. Brazil. *Gf. t.* 1044.
— — an'reo-maculatum. Spotted and barred with brown. 1888. *Gf. t.* 1279.
— — bi'color. Brown, blotched with yellow. *Gf.* 1888, p. 441.
— Limm'nghei. Yellow, brown. Brazil. 1868.
— Lind'e'ni. May. Guatemala. 1845.
— linguiflorum. Yellow, rose. July. Merida. 1840.
— li'tum. Brown, yellow. Brazil. *G. C.* 1883, xx. p. 328.
— longifolium. 3. Yellow, brown. March. Mexico. 1840. *B. R.* 1842, t. 4.
— lo'ngipes. ¾. Yellow, brown. April. Brazil.
— loxe'nae. Olive, cinnamon. Loxa. 1884.
— lu'dens. Rich brown, yellow, cinnamon, dark purple. 1885.
— luna'tum. 1. Orange. June. Demerara. 1836. *B. R. t.* 1929.
— lu'ridum. 2. Olive, brown. March. Jamaica. 1822. *B. R. t.* 727.
— — atra'tum. Olive, brown. Mexico.
— — guttatum. 2. Yellow, red. July. Jamaica. 1837. *B. R.* 1839, t. 16.
— intermedium. Yellow, brown. Cuba.
— Morre'ni. Pink, crimson, yellow.
— olivaceum. Olive-green, brown. Martinique.
— — purpuratum. 2. Crimson, purple-speckled. September.
— — lute'scens. Brown, yellow, greenish, purple. *G. C.* 1887, i. p. 799.
— macrantherum. *B. M. t.* 3845. See *Leiochilus oncidoides*.

- O. macranthum*. Yellow, purple. Spring. Peru. 1867.
 — *ma'cropus*. Yellow, brown. Ecuador. 1868.
 — *macula tum psittaci num.* Yellow, blotched. 1888.
 — *Manti'ni*. Chocolate-brown, yellow, reddish-brown. Brazil. 1888. Orch. 1888, p. 47.
 — *Marshallia num.* Yellow, maroon. S. America. 1866.
 — *Martia num.* Yellow. Brazil.
 — *bi'color*. Yellow, brown. September. Brazil. 1841.
 — *Massa'ngai*. Yellow, purple-brown. Central America. 1877.
 — *mei'raz*. Yellow, brown. Columbia. 1830.
 — *me'lanops*. Blackish-purple, yellow. Ecuador. 1880.
 — *melio'snum*. Yellow, cinnamon. Summer. G. C. 1882, xvii. p. 796.
 — *meta'llicum*. Chestnut, yellow. Columbia. 1876.
 — *microchi'tum*. Yellow, crimson. September. Guatemala. 1838. B. R. 1843, t. 23.
 — *Milia num.* Yellow, brown. Columbia. 1878.
 — *monachi'cum*. Cinnamon, sulphur, brown. New Grenada. 1838. G. C. 1883, xix. p. 368, fig. 54.
 — *mono'ceras*. 2. Yellow. January. Rio Janeiro. 1839. B. M. t. 3890.
 — *muri'num*. Yellow, dull crimson-purple. 1838.
 — *na'num*. White. La Guayra. 1842.
 — *nebulosum*. Yellow, brown. Guatemala.
 — *negra'tum*. Yellow, purple. Guiana.
 — *nodosum*. Yellow, red-brown. Columbia. 1874. Syn., *O. papilioniforme*.
 — *nubi'genum*. White, purple. June. Ecuador. 1867. Syn., *O. Denisonianum*.
 — *ru'dum*. Yellow, crimson. July. Caraccas. 1834.
 — *oblonga'tum*. Yellow. July. Guatemala. 1844.
 — *obryza'tum*. Yellow. Peru. 1863.
 — *octo'des*. Yellow, brown. Ecuador. 1871.
 — *oni'strum*. 2. Yellow. October. Peru. 1848.
 — *ornitho'podum*. 1879.
 — *ornithorhynchon*. 2. Pink, white. July. Mexico. 1826. B. M. t. 3912.
 — *albiflorum*. White, yellow. Guatemala. 1873. Syn., *O. ornithorhynchum*, var. *album*.
 — *pa'llidum*. 2. Pale purple. December. Guatemala. 1835.
 — *ortho'tis*. 2. Yellow, marked with brown. Ill. Hort. xxv. p. 91, pl. 69.
 — *pachyphyllum*. 2. Yellow, red. January. Mexico. 1839. B. M. t. 3807.
 — *panchry'sum*. Yellow. New Grenada.
 — *papi'tio*. 1½. Yellow, purple. June. Trinidad. 1823. B. R. t. 910.
 — *Eckha'ratii*. Flowers larger. Syn., *O. papilio*, var. *majus*. Lind. t. 138.
 — *tamba'tum*. 1½. Crimson, brown, yellow. October. Trinidad. 1823.
 — *pardoglossum*. Chestnut, yellow, brown, purple. G. C. 1886, xxv. p. 617.
 — *pectora'le*. Brown, crimson. April. Brazil. 1842. Lindl. Ser. t. 39.
 — *pelica num.* Yellow. October. Mexico. 1839. B. R. 1847, t. 70.
 — *poliogra'mma*. Pale yellow and brownish. Chiriqui.
 — *pe'ndulum*. Brown, yellow. September. Guatemala. 1840.
 — *pergame'neum*. Yellow. August. Guatemala. 1839.
 — *Phaleno'pis*. Cream colour, violet, orange. Ecuador. 1869.
 — *phylloglossum*. Chestnut-brown. Columbia. G. C. 1881, xv. p. 169.
 — *phymatochi'tum*. 2. White, yellow. April. Brazil. 1844.
 — *Pi'ctum*. Yellow, brown. Popayan.
 — *Pinellia num.* Brown, red. Brazil. 1841.
 — *plagi'anthum*. Brown. Columbia. 1873.
 — *planila'bre*. Brown, yellow. Brazil.
 — *plio'gerum*. Brown. Ecuador. 1873.
 — *Polletria num.* Yellow, brown. G. C. 1886 xxvi. p. 326.
 — *po'rrigens*. Brown, honey-colour, orange. Columbia. 1868.
 — *praestans*. Yellow, dark-brown. 1880.
 — *praetatum*. Brown, yellow. Brazil. 1873.
 — *be'llum*. Yellow, brown. G. C. 1884 xxi. p. 372.
 — *Lea num.* G. C. 1882, xviii. p. 494.
 — *pu'bes*. 1. Green, red. April. Brazil. 1824.
 — B. R. t. 1007.
 — *flavescens*. 1. Red, yellow. October. Brazil. 1839.
 — *pulche'llum*. ½. White-spotted. May. Jamaica. B. M. t. 2773.
 — *pulvina'tum*. 8. Yellow, brown. June. Brazil. 1836. B. R. 1839, t. 42.
 — *pu'milum*. ½. Yellow. May. Brazil. 1824. B. M. t. 3581.
 — *pa'llidum*. ½. Pale yellow. May. Brazil. 1840.
 — *pyzoid'phorum*. Yellow. 1879.
 — *rani'ferum*. 1. Yellow. August. Brazil. 1838. B. M. t. 3712.
 — *ma'jus*. See *O. Hookeri*.
 — *reflexum*. Yellow. October. Mexico. 1836. Maund Bot. iii. t. 16.
 — *pelica num.* Yellow, crimson. Mexico.
 — *Retemeyeria num.* Pale yellow, brown, violet. Mexico. 1870.
 — *retu'sum*. Brown, yellow. Peru.
 — *Rigbya num.*
 — *roseum*. Rose. July. Mexico. 1838.
 — *ma'jus*. Rose. March. Honduras. 1839.
 — *pa'llidum*. Pale rose. March. Honduras. 1839.
 — *ro'strata*. Columbia. 1875.
 — *rotunda'tum*. Brown, yellow. 1873.
 — *rupe'stre*. Yellow, brown. Peru.
 — *Skinne'ri*. 1. Peru. 1859.
 — *Russellia num.* 1. Purple, green. Rio Janeiro. 1835. B. R. t. 1830.
 — *pa'llidum*. 1. Olive-brown, lilac, white. Brazil. 1880.
 — *rusticum*. Green, brown, yellow, orange. Ecuador. 1870.
 — *sallabu'ndum*. Ochre, blotched with brown. New Grenada. G. C. 1883, xix. p. 720.
 — *sanguineum*. Crimson, red. La Guayra. Lind. Ser. t. 27.
 — *sarco'des*. Yellow, red. April. Brazil.
 — *discoida'le*. Lip not spotted. G. C. 1886, xxv. p. 488.
 — *Schli'mi*. Yellow, brown. November. Central America.
 — *Se'mele*. Yellow, purplish. Ecuador. 1870.
 — *serra'tum*. Brown, yellow. Peru. 1850. Syn., *O. diadema*.
 — *se'ssile*. 2. Yellow. May. Santa Martha. 1843. Paxt. Fl. Gard. t. 21.
 — *sphacelatum*. 2. Yellow, brown. February. Mexico. 1838. B. R. 1842, t. 30.
 — *grandiflorum*. Yellow, brown. February. Mexico. 1840.
 — *spilo'pterum*. 2. Brown, yellow. February. Brazil. 1844. B. R. 1845, t. 40.
 — *sple'ndidum*. Yellow, brown. Guatemala. 1862. Syn., *O. tigrinum*, var. *splendidum*.
 — *stelligerum*. Yellowish, brown. 1873.
 — *Erne'sti*. Pale yellow, brown, reddish-purple. Mexico. 1887. Warn. Orch. Alb. t. 260.
 — *stipitatum*. Yellow, crimson. April. Panama. 1844.
 — *platy'nyx*. 1878.
 — *strami'neum*. Straw, crimson. Vera Cruz. 1837. B. R. 1840, t. 14.

- *sua've*. Yellow. April. Mexico. 1835.
- *supèrbiens*. Chocolate, yellow. Columbia. 1872.
- *Sutto'ni*. Brown, yellow. August. Mexico. 1842.
- *Taylori'rii*. 2. Brown. August. Mexico. 1837.
- *te'ctum*. Yellow, brown. Columbia. 1875.
- *te'ruè*. $\frac{3}{4}$. Yellow, brown-spotted. August. Guatemala. 1841. Journ. Hort. Soc. iii. p. 77, and vii. p. 271.
- *teretifo'tium*. Bright yellow. Fl. and Pom. 1882, p. 90.
- *tetraco'pis*. Brown, yellow. Columbia. 1873.
- *tetrape'talum*. 1. Yellow, brown. Jamaica.
- *tigrinum*. 1. Yellow, brown. April. Mexico. 1840. *O. leopardinum* is a tall variety.
- — *albens*. Yellowish-white. 1877.
- — *luc'gens*. Reddish-brown, yellow, green. G. C. 1886, xxvi. p. 553.
- *tricolor*. $\frac{1}{4}$. Yellow, white. April. Jamaica. 1843. B. M. t. 4130.
- *tricuspidatum*. Orange, brown, sulphur. Costa Rica. G. C. 1884, xxii. p. 70.
- *trifurcatum*. Light yellow, crimson-lake. Columbia? G. C. 1883, xx. p. 556.
- *trilingue*. Brown, yellow. April. Peru. 1850. Paxt. Fl. Gard. t. 63.
- *trique'trum*. $\frac{3}{4}$. White, purple. September. Jamaica. 1793. B. M. t. 3393.
- *trulliferum*. Brown, yellow. September. Brazil. 1838. B. R. 1839, t. 57.
- *unguicula'tum*. 3. Yellow. October. Mexico. 1846.
- *unicor'ne*. Yellow. January. Rio Janeiro. 1839.
- — *læ'tum*. Lip white, purple, orange. G. C. 1882, xvii. p. 764.
- — *pl'ctum*. White, purple, yellow, brown. 1880.
- *unifo'tum*. $\frac{1}{4}$. Brown, yellow. November. Organ Mountains. 1841. B. R. 1843, t. 43.
- *urophyllum*. Yellow, brown. W. Indies. 1841. B. R. 1842, t. 54; Antigua. 1891.
- *ustula'tum*. Sepia, sulphur, reddish-brown, greenish. Columbia. 1833.
- *varico'sum*. Green, brown, yellow. October. Brazil. Lem. Jard. Fl. t. 206-7.
- — *Roger'sii*. Yellow, brown. 1869. Syn., *O. Roger'sii*.
- *variega'tum*. 2. Yellow. July. W. Ind. 1824. Paxt. Fl. Gard. t. 33.
- *vernizum*. Brown, yellow. Ecuador. 1870.
- *viperinum*. Pale yellow. July. Brazil. 1836.
- *virgula'tum*. Columbia. 1876.
- *volu'bile*. Yellow, brown. December. Brazil.
- *Warne'ri*. Crimson, yellow. Mexico. 1845.
- *Warszewiczii*. Yellow, white, brown. Costa Rica. 1870. Syn., *O. bifrons*.
- *Wells'ni*. See *Miltonia Warszewiczii*.
- *Wentworthianum*. Yellow, crimson. March. Mexico. 1839. Bate. Orch. t. 39.
- *Widgré'ni*. Bright yellow, reddish-brown. Brazil.
- *Wrayæ*. 2. Yellow, brown. Guatemala. 1838. B. M. t. 3854.
- *xanthoc'ntron*. S. America. G. C. 1880, xiii. p. 104.
- *xanthodon*. 2. Brown, yellow. November. Ecuador. 1868.
- *zebrinum*. White, violet-red, yellow. Venezuela. 1872.
- — *brunneum*. White, brown, yellow. 1876.

Oncocyclus. A synonym of **Iris**.

Oncosperma. (From *onkos*, a tumour, and *sperma*, a seed. Nat. ord., *Palmææ*; Tribe, *Areceæ*.)

Slender stove palms. For cultivation, see **ARECA**, to which it is allied.

- O. fascicula'tum*. Ceylon.
- *filamento'sum*. Java. 1847.
- *Van Houttei'num*. 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 realized 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 Epacris 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, etc., 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 mole-hill. 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. *Allium Cepa.*

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 pulverized.

Varieties.—1, Silver-skinned Onion, hardiest; 2, Early Silver-skinned; 3, True Portugal; 4, Spanish; 5, Strasburg; 6, Deptford; 7, Globe (white or red), best; 8, James's Keeping Onion; 9, Pale Red; 10, Yellow; 11, Blood-red; 12, Tripoli; 13, Two-bladed; 14, Lisbon; 15, Weathersfield red; 16, Yellow Danvers; 17, Welsh Onion; 18, Queen; 19, White Globe, etc.

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 consequences 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 *Phorbia cepeto-*
rum and *Eume rus cæneus*.

Oniscus. *O. asellus*, *O. armadillo*, 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 dung-hills, cucumber-frames, etc., and they are injurious to many plants, fruits, etc., by gnawing off the outer skin. Gaslime will expel them from their haunts, and two boards or tiles kept one-eighth of an inch apart form an excellent trap.

Onobroma. (From *onos*, the ass, and *broma*, food. Nat. ord., *Compositæ*; Tribe, *Cynaroidææ*. Allied to *Carthamus*.)

Cuttings and divisions, and seeds of perennials; annuals, by seed; common soil; *arborescens* requires the protection of a cool greenhouse in winter.

- O. arborescens*. 6. Yellow. July. Spain. 1731. Evergreen.
— *cæruleum*. 1. Blue. June. Spain. 1640. Herbaceous.
— *cynaroides*. 2. White. June. Caucasus. 1820. Herbaceous.
— *glaucescens*. 1½. Purple. July. Tauria. 1817. Annual.
— *leucocyanon*. 1. White. June. Greece. 1800. Herbaceous.

Onobrychis. Saintfoin. (From *onos*, the ass, and *brycha*, to gnaw; favourite food of the ass. Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*. 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. caput-galli*. 1½. Flesh. July. France. 1731. Syn., *Hedysarum caput-galli*. Swt. Fl. Gard. t. 723.

HARDY HERBACEOUS.

- O. arenaria*. 1. Red. July. Siberia. 1818.
— *carpathica*. 1. Purple. July. Carpathia. 1818.
— *conferta*. 1. Purple. July. Iberia. 1817.
— *cornuta*. 1. Red. July. Caucasus. 1816. Evergreen.
— *crinita*. Lilac. June. Levant. 1837.
— *echinata*. Flesh. June. Calabria. 1831.
— *fontanensis*. Red. July. Tunis. 1820.
— *glabra*. 1. Purple. July. Tauria. 1816.
— *gracilis*. 1. Pale red. July. Podolia. 1820.
— *Michauxii*. Pale red. July. Levant. 1820.
— *montana*. ½. Purple. July. South Europe. 1817.
— *Pallasii*. 1. Pale yellow. Iberia. 1820.
— *petraea*. 1. White, red. Caucasus. 1818.
— *procumbens*. ½. Purple. July. Iberia. 1819.
— *Ptolemaica*. 1. Yellow. Egypt. 1816.
— *radicata*. 1½. Pale yellow. Iberia. 1818. B. R. 1847, t. 37.
— *sativa*. 2½. Purple. Europe.
— *saxatilis*. 1. Lilac, yellow. South Europe. 1790.
— *supina*. ½. Pale red. Switzerland. 1819.
— *Tanaitica*. 1. Purple. July. Caucasus. 1817.

Onoclea. (*Onoclea* was the Greek name of a plant. Nat. ord., *Filices*.)

Hardy ferns. See FERNS.

- O. nuda*. See *Lomaria nuda*.
— *obtusiloba*. 1. Brown. July. N. Amer. 1812. B. C. t. 1578.
— *sensibilis*. 1½. Brown. August. Virginia. 1799.

Ononis. Restharrow. (From *onos*, an ass, and *onemi*, to delight; the ass delights to browse on the herbage. Nat. ord., *Leguminosæ*; Tribe, *Trifoliææ*. Allied to *Trigonella*.)

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 under-shrub kinds, if of a creeping nature, answer well for rock-works. 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. arboreascens*. 2. Red. June. Barbary. 1826.
- *arenaria*. $\frac{1}{2}$. Yellow. July. France. 1819.
- *arragoneasis*. $\frac{1}{2}$. Yellow. July. Spain. 1816.
- *capitata*. $\frac{1}{2}$. Yellow. August. Spain. 1820.
- *fruticosa*. 2. Pink. May. South Europe. 1680. B. M. t. 317.
- — *microphylla*. 4. Purple, red. June. Arragon.
- *Natrix*. 2. Yellow, red. September. S. Europe. 1683. B. M. t. 329.
- *procurrens*. 1. Purple. July Europe. 1820.
- *rotundifolia*. 2. Pink. May. Pyrenees. 1570. B. M. t. 335.
- — *aristata*. 2. Pink. June.
- *tribracteata*. $\frac{1}{2}$. Pink. June. South Europe. 1800.
- *tridentata*. $\frac{1}{2}$. Purple. June. Spain. 1752.

TENDER PERENNIALS.

- O. angustissima*. $\frac{1}{2}$. Pink. June. Spain. 1825.
- *cuspidata*. $\frac{1}{2}$. Yellow. June. Algiers. 1818.
- *emarginata*. Mauritius. 1825.
- *falca*. $\frac{1}{2}$. Yellow. July. South Europe.
- *glabra*. $\frac{1}{2}$. Yellow. July. Cape of Good Hope. 1824.
- *hispanica*. $\frac{1}{2}$. Yellow. July. Spain. 1799. B. M. t. 2450.
- *hispidata*. $\frac{1}{2}$. July. Barbary. 1818.
- *longifolia*. 2. Yellow. July. Teneriffe. 1816.
- *pedunculata*. 1. White, rose. April. Teneriffe. 1829. B. R. t. 1447.
- *pectinata*. 1. Purple, yellow. Barbary. 1820.
- *ramosissima*. $\frac{1}{2}$. Yellow. July. Sicily. 1819.

ANNUALS.

- O. alba*. 1. White. July. Barbary. 1823.
- *A'pula*. 1. Yellow. September. Naples. 1834. Biennial.
- *biflora*. $\frac{1}{2}$. Yellow. July. Barbary. 1818.
- *brachycarpa*. $\frac{1}{2}$. Yellow. June. Spain. 1823.
- *breviflora*. $\frac{1}{2}$. Yellow. August. South Europe. 1800.
- *capensis*. 3. Purple. Cape of Good Hope. 1800.
- *Denhardtii*. 1. Yellow. August. Naples. 1832. Biennial.
- *diffusa*. $\frac{1}{2}$. Purple. July. Italy. 1820.
- *foetida*. $\frac{1}{2}$. Pink. June. Morocco. 1818.
- *geminiflora*. $\frac{1}{2}$. Purple. July. Spain. 1817.
- *minutissima*. $\frac{1}{2}$. Yellow. June. France. 1818. Biennial.
- *otigophylla*. $\frac{1}{2}$. White. July. Naples. 1823.
- *pe'ndula*. $\frac{1}{2}$. Purple. July. South Europe. 1818.

Onopordion. Cotton Thistle.

(From *onos*, an ass, and *perdo*, to consume; eaten by that animal. Nat. ord., *Compositae*; Tribe, *Cynaroidae*. 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. acailon*. $\frac{1}{2}$. White. July. Pyrenees. 1739.
- *arabicum*. 8. Purple. July. South Europe. 1686.
- *cynaroides*. 10. White. June. Caucasus. 1823.
- *deltoidesum*. See *Carduus atriplicifolius*.
- *elatium*. 7. Purple. July. Greece. 1816.
- *illyricum*. 6. Purple. July. South Europe. 1640.

- O. macranthum*. 6. Purple. July. Barbary. 1798. Annual.
- *pyrenaicum*. $\frac{1}{2}$. White. August. Pyrenees. 1820.
- *uniflorum*. $\frac{1}{2}$. White. July. Spain. 1826.
- *viscosum*. 7. Purple. July. South Europe. 1818.

Onoseris. (From *onos*, an ass, and *seris*, Endive. Nat. ord., *Compositae*; Tribe, *Mutisiaceae*.)

Stove plants, except *O. Drakeana*. Seeds and cuttings, in heat; sandy loam and leaf-mould. Summer temp., 50° to 75°; winter, 50° to 55°.

- O. adpressa*. 2. Rosy. January. Peru. 1826. Syn., *Centroclinium adpressum*. B. M. t. 3115. Evergreen.
- *Drakeana*. Bright purple. New Grenada. 1833. Rev. Hort. 1833, p. 180. Greenhouse shrub.
- *reflexa*. 2. Rosy. August. Peru. 1830. Syn., *Centroclinium reflexum*. B. M. t. 3114.
- *rosiflora*. 3. Pink. New Grenada. 1859. Syn., *Isotypos rosiflorus*. L'Hort. Fr. 1864, p. 10.

Onosma. (From *onos*, an ass, and *osme*, smell; said to be grateful to that animal. Nat. ord., *Boraginaceae*; Tribe, *Borageae*. Allied to *Cerinthae*.)

Herbaceous perennials, 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. pyramidalis*. 2. Bright scarlet. Kumaon. 1888. B. M. t. 6987.
- *rigidum*. 1. July. Tauria. 1826.
- *rupe'stre*. $\frac{1}{2}$. May. Iberia. 1819. B. C. t. 1880.
- *trine'rvium*. 1. S. Amer. 1824.

HARDY.

- O. albo-roseum*. White, changing to deep rose. Asia Minor.
- *divaricatum*. 1. May. Caucasus. 1818.
- *echoides*. 1. White. May. South Europe. 1683. B. C. t. 1741.
- — *arenaria*. 1. June. Hungary. 1804.
- *emodi*. Pink. May. Nepal. 1851. Syn., *Maharanga emodi*.
- *giganteum*. 3. April. Tauria. 1818.
- *Gmelini*. 1. Striped. June. Altai. 1829.
- *montanum*. March. Levant. 1827.
- *orientale*. $\frac{1}{2}$. May. Levant. 1752.
- *polyphyllum*. 1. July. Tauria. 1829.
- *sericeum*. $\frac{1}{2}$. June. Iberia. 1752.
- *simplicissimum*. 1. April. Siberia. 1768. B. M. t. 2248.
- *stellulatum*. $\frac{1}{2}$. April. Hungary. 1819.
- *tauricum*. Yellow. Taurus. B. M. t. 889.

Onosmodium. (From *onosma*, the last genus, and *eidos*, like. Nat. ord., *Boraginaceae*; Tribe, *Borageae*. Allied to *Lithospermum*.)

Hardy herbaceous North American perennials, flowering in June; thriving in sandy loam, and propagated by seeds and division.

- O. carolinianum*. 1. Yellowish. 1759.
- *hispidum*. 1. Yellow. 1759.
- *molle*. $\frac{1}{2}$. White. 1812.
- *virginianum*. 1. Yellow. 1812.

Onychium. (From *onyx*, a claw ; shape of the lobes of the fronds. Nat. ord., *Filices*.)

Stove ferns, with yellowish-brown spores. See FERNs.

- O. auratum.* July. N. S. Wales.
- *capense.* July. Cape of Good Hope.
- *japonicum.* Japan.
- *lu'cidum.* July. Nepaul. 1844.

Opera Girls. *Mantiv'sia.*

Opercularia. (From *operculum*, a lid ; shape of calyx. Nat. ord., *Rubiaceae* ; Tribe, *Anthospermeae*. 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 fibry peat, and dried pieces of leaf-mould, and a few pieces of charcoal ; a dry, cold pit or greenhouse in winter.

- O. aspera.* 1. June. N. Holland. 1790.
- *hi'spida.* 1. July. N. Holland. 1790.
- *ocymifolia.* ½. July. E. Ind. 1824.
- *sessiliflora.* ½. June. Cape of Good Hope. 1824.

Ophe'lia. (From *opheleia*, service-bell ; medicinal. Nat. ord., *Gentianaceae*. Allied to the *Gentian*.) See **Swertia**.

- O. alata.* See *Suertia alata*.
- *angustifolia.* See *Suertia angustifolia*.
- *corymbosa.* B. M. t. 4489. See *Suertia corymbosa*.
- *paniculata.* See *Suertia paniculata*.
- *purpurea* scens. See *Suertia purpurascens*.
- *umbellata.* B. M. t. 5397. See *Suertia trichotoma*.

Ophiocaulon. (From *ophis*, a serpent, and *kaulos*, a stem ; in reference to its climbing habit. Nat. ord., *Passifloraceae* ; Tribe, *Modeceae*. Allied to *Modecca*.)

Stove climber. For cultivation, see **PASSIFLORA**.

- O. cissampeloides.* W. Tropical Africa. 1871. Syn., *Passiflora marnorea*.

Ophioglossum. (From *ophis*, a snake, and *glossa*, a tongue ; alluding to the shape of the spike of fructification. Nat. ord., *Filices*—*Polypodiaceae*.)

Stove and hardy ferns. See **FERNs**.

- O. lusitanicum.* ½. S. of Europe and Britain.
- *palmatum.* ½. Mexico. Stove.
- *pendulum.* 2. Mauritius. Stove.
- *reticulatum.* 1. Tropics. Stove.
- *vulgatum.* ½. Britain.—Adder's Tongue.

Ophiopogon. (From *ophis*, a serpent, and *pogon*, a beard. Nat. ord., *Hæmodoraceae* ; Tribe, *Ophiopogoneae*.)

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. All are hardy in dry, sheltered places, except *O. prolifer*, which requires the protection of a greenhouse.

- O. intermedium.* See *O. japonicus*, var. *intermedium*.
- *Jaburan.* 1. July. Japan. 1830. B. C. t. 1876.

O. Jaburan variegatus. Violet ; leaves white-edged. Japan. 1863.

- *japonicus.* 1½. Lilac, yellow. June. Japan. 1784. B. M. t. 1063.
- — *argenteo-marginatus.* White ; leaves white-edged.
- — *intermedium.* 1½. Lilac. Autumn. China. 1821. Syns., *O. intermedium* and *O. spicatus* of Don.
- *prolifer.* 1½. July. Penang. 1844.
- *spicatus* of Don is *O. japonicus*, var. *intermedium* ; of Ker is *Liriope graminifolia*.

Ophiop'teris. (From *ophis*, a serpent, and *pteris*, a fern ; referring to the flexuose, creeping rhizome. Nat. ord., *Filices*.) A synonym of **Oleandra**.

O. verticillata. A synonym of *Oleandra neritiformis*.

Ophioxylon. (From *ophis*, a serpent, and *xylon*, wood ; referring to its twisted roots. Nat. ord., *Apocynaceae* ; Tribe, *Plumeriaceae*.) See **Rauwolfia**.

- O. majus.* See *Rauwolfia majus*.
- *serpentinum.* See *Rauwolfia serpentina*.

O'phrys. (From *ophrys*, eyebrows ; referring to the fringe of the inner sepals. Nat. ord., *Orchideae* ; Tribe, *Ophrydeae*—*Serapieae*.)

Elegant little ground-orchids, chiefly natives of Europe, 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. *Apifera* 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 alpinists.

HALF-HARDY.

- O. arañifera-limba'ta.* 1. Brown. April. Rome. 1826. B. E. t. 1197.
- *atra'ta.* 2. Green, brown. May. Gibraltar. 1825. B. E. t. 1087.
- *ferum-equinum.* 2. Brown, rose. April. Corfu. B. R. 1847, t. 46.
- *fuciflora.* 2. Green, brown, pink. Zante. B. R. 1847, t. 25.
- *fucica.* 2. Brown. June. Gibraltar. 1825.
- *lilifolia.* Andr. Rep. t. 65. See *Liparis lilifolia*.
- *lu'tea.* 2. Yellow. April. Spain. 1818.
- *mammosa.* Green, pink. S. Europe.
- *monorchis.* See *Herminium monorchis*.
- *scopolax.* 2. Purple. May. Italy. 1825.
- *tenthredinifera.* 2. Yellow, brown. April. Barbary. 1815. B. M. t. 1930.
- — *major.* Green, whitish, purple. May. Barbary. B. R. t. 1093.
- — *minor.* 2. Yellow, brown. April. N. Africa. 1824.
- *vespifera.* Yellow, brown. Corfu.

HARDY.

- O. alpi'na.* B. C. t. 1188. See *Herminium alpinum*.
- *apifera.* 2. Purple. June. England. Eng. Bot. ed. 3, t. 1467.
- *arachni'tes.* 2. Brown. June. England. B. M. t. 2516.
- *arachnoides.* Brown, rose. April. Italy. 1805. Andr. Rep. t. 470.
- *arañifera.* 2. Green. May. England. Eng. Bot. ed. 3, t. 1460.

- O. cilia'ta*. Brown, white. April. Italy. 1826.
— cornu'ta. $\frac{1}{2}$. White, purple. June. Crimea. 1844. B. R. 1846, t. 52.
— exalta'ta. Rose, brown. April. Italy. 1825.
— fua'i'fera. $\frac{1}{2}$. Purple, green. June. England.
— grandiflo'ra. Red, yellow. April. Italy. 1828.
— musci'fera. $\frac{1}{2}$. Purple. May. England. Eng. Bot. ed. 3, t. 1471.
— speculum. Brown, black. April. South Europe. 1818. B. R. t. 370.
— tabani'fera. $\frac{1}{2}$. Chocolate, rose. April. Clarentia. B. R. 1847, t. 46.
- Oplismenus.** (From *hoplismenus*, awned; the glumes are awned. Nat. ord., *Gramineae*. Syn., *Orthopogon*.)
 Stove or greenhouse grasses. Divisions, or seeds. *Panicum variegatum* should be referred to this genus.
- O. Burma'nni albi'dulum*. Leaves white, with a central green stripe. India. G. C. 1886, xxvi. p. 776.
— hirtellus. June. West Indies. 1795. Syn., *Orthopogon hirtellus*.
— lotia'ceus. July. Trinidad. 1820. Syn., *Orthopogon lotiaceus*.
- Opopanax.** (From *opos*, juice, and *panax*, Panax. Nat. ord., *Umbelliferae*.) See *Malabaila*.
- O. chiro'nium*. See *Malabaila Opopanax*.
- Oporanthus.** (From *opora*, autumn, and *anthos*, a flower. Nat. ord., *Amaryllidaceae*; Tribe, *Amaryllaceae*.)
 A sub-genus of *Sternbergia*.
O. lu'teus. See *Sternbergia lutea*.
- Opuntia.** Indian Fig. (A Latin name, of which the derivation is not applicable to the species now placed under it. Nat. ord., *Cactaceae*; Tribe, *Opuntiaceae*.)
 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, fibry peat, each one part; lime-rubbish, cow-dung, and charcoal, one-third part each. *Vulgaris* 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. a'lbicans*. Mexico. 1835.
— alpi'na. Chili. 1836.
— america'na. S. Amer. 1835.
— Amyclae'a. Naples. 1825.
— and'cola. Andes of Chili.
— articula'ta. June. 1836.
— Au'berti. Cuba.
— auran'ti'aca. 3. Orange, yellow. Chili. 1824. B. R. t. 1606.
— Bonpla'ndi. July. Brazil. 1816.
— brasili'e'nsis. 25. July. Brazil. 1816. B. M. t. 3293.
— candela'brifo'rmi's. Mexico.
— clava'ta. Yellow. Chili. 1854.
— cochini'lli'fera. See *Nopalea cochinillifera*.
- O. corruga'ta*. Chili. 1824.
— cra'ssa. 2. Mexico. 1817.
— crini'fera. Brazil. 1846.
— curassa'vica. 6. June. Curassoa. 1690.
— elonga'ta. 3.
— lo'nga. 6. June. Curassoa. 1690.
— cylin'drica. 3. Scarlet. Peru. 1799. B. M. t. 3301.
— Davi'sii. New Mexico. 1883. B. M. t. 6652.
— deci'piens. Scarlet. June. Mexico. 1830.
— decuma'na. 10. S. Amer. 1768.
— decum'bens. $\frac{1}{2}$. June. Mexico. 1835. B. M. t. 3914.
— deje'cta. Havannah. 1836.
— dich'o'toma. Buenos Ayres. 1836.
— Dille'nii. 5. September. 1810.
— elat'ior. 6. July. S. Amer. 1731.
— Engelma'nni. Chihuahua. 1854.
— exte'n'sa. Lilac, yellow. 1824.
— exuvia'ta. June. Mexico. 1830.
— fe'ro'a. 3. S. Amer. 1817.
— ficus i'ndica. 2. June. S. Amer. 1731.
— flocco'sa. Bolivia.
— folio'sa. S. Amer. 1805.
— fra'gilis. 2. N. Amer. 1814.
— frute'scens. Yellow. Mexico. 1838.
— glaucophy'lla.
— glomer'a'ta. Brazil. 1829.
— gra'cilis. Mexico.
— Hernande'zi. Variegated. Mexico. 1827.
— horrida. July. S. Amer. 1795.
— imbrica'ta. 3. 1820.
— ine'rmi's. July. S. Amer. 1796.
— interme'dia. Mexico?
— Klei'næ. Mexico.
— lanceola'ta. 2. July. S. Amer. 1796.
— leptocaul'is. Mexico. 1845.
— leucaca'ntha. White. S. Amer. 1825.
— leuco'tricha. 4. White. Germany. 1836.
— longisp'i'na. Brazil. 1820.
— lu'cida. 3-4. Yellow. 1889.
— macrorrh'i'za. Santa Fé. 1850.
— ma'xima. 10. S. Amer. 1820.
— me'dia. N. Amer. 1827.
— megaca'ntha. Mexico. 1835.
— mexica'na. Mexico. 1835.
— microda'rys. Mexico. 1845.
— missouri'e'nsis. See *O. polyacantha*.
— monaca'ntha. 1. S. Amer. 1816. B. M. t. 3911.
— myriaca'ntha. Mexico. 1830.
— ni'gricans. 3. Pink. August. S. Amer. 1795.
— nopali'lo. Mexico. 1838.
— Otto'nii. June. Brazil. 1830.
— ova'ta. Andes of Chili. 1840.
— papyrac'a'ntha. Argentine Republic. 1872.
— Parmentie'ri. Paraguay. 1844.
— pa'rula. Chili. 1825.
— phoeaca'ntha.
— platyaca'ntha. 1814.
— Poeppi'gii. Chili. Gf. t. 1129.
— polya'ntha. 3. S. Amer. 1811.
— polyaca'ntha. 1. N. Amer. 1814. B. M. t. 7046. Syn., *O. missouriensis* of gardens.
— pseu'do-tu'na. 1811.
— pube'scens. June. Mexico. 1836.
— puberule'nta. Tropical America. 1850.
— pulvina'ta. June. Mexico. 1836.
— pusi'lla. $\frac{1}{2}$. S. Amer. 1805.
— Rajni'squii. 1. Yellow. N. America. 1868. Garden, Dec. 3, 1881.
— ramuli'fera. June. Mexico. 1836.
— re'ptans. Mexico. 1838.
— ro'sea. Rose. June. Mexico. 1830.
— rube'scens. Brazil. 1828.
— Salmi'na. 2. Yellow, red. September. Brazil. 1850. B. M. t. 4542.
— Seg'e'thi. Pale pink. Chili. 1884. Gf. t. 1129.
— seni'tis. 1837.
— seri'cea. 1. Chili. 1827.
— spinau'rea. Mexico. 1838.
— spinos'i'stima. 20. July. Jamaica. 1732.

- O. spinulifera*. Mexico. 1836.
 — *Stapelie*. June. Mexico. 1830.
 — *subinermis*. 2. 1819.
 — *subulata*.
 — *sulphurea*. 2. Chili. 1827.
 — *tomentosa*. 2. S. Amer. 1820.
 — *triacaantha*. 2. S. Amer.
 — *tuberculata*. 1. America. 1818.
 — *tu'na*. 3. July. S. Amer. 1731.
 — *tunica'ta*. Mexico. 1840.
 — *Turpinii*. Chili. 1844.
 — *vulgaris*. 2. July. South Europe. 1596.

Orach. (*Atriplex hortensis*.) 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 situation.

Sow about the end of September, and again in the spring for succession, in drills six inches apart. When the seedlings are about an inch high, thin to six inches apart, 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 open 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 eight 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. (*Citrus aurantium*.) See **Citrus**.

Orange Thorn. *Citriobatus*.

Orania. (From *ouranos*, heaven. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

Tall stove palms. For cultivation, see PHENIX.

O. macrocledus 40. Malacca. 1847.

— *no'va*. Leaves white beneath.

— *porphyrocarpa*. Java. 1847.

— *regalis*. 7. Java. 1847.

Orbe'a. A synonym of **Stapelia**.

Orchard is an inclosure 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, Herefordshire Pearmain, King of Pippins, and John Apple. For *Dessert*: Early Harvest, Early Red Margaret, Kerry Pippin, Early Nonpareil, Pitmaston, Pearson's Plate, 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 Butner's October Morello. Of *Plums*: Précoce de Tours, Morocco, Orleans, Drap d'Or, Greengage, Royal Hâtive, Reine Claude Violette, Coe's Golden Drop, St. Martin's Quetsche, Washington, Jefferson, Winesour, Magnum Bonum, St. Catherine, and Ixworth 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*, Doyenne d'Été. *August*, Benoist. *September*, Williams' Bon Chrétien, Beurré d'Amalis, Jalouse de Fontenay Vender. *October*, Duchesse d'Orleans, Marie Louise, Fondante d'Automne. *November*, Beurré Bosc, Thompson's, Doyenne Gris, Urbaniste. *December*, Hacon's Incomparable, Triomphe de Jodoigne. *January*, Beurré Langelier, Knight's Monarch. *February*, Inconnue Van Mons, Susette de Bavay, Duchesse de Mars. *March*, Beurré Bretonneau. *April*, Fortunée Parmentier, Bergamottée d'Esperen.

Orchard House. This is the name now applied to cheap glazed structures,

in which to grow 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 thirty feet long is required. A ground plan, thirty feet long and twelve feet wide, must be marked out, ten posts or studs of good yellow deal, four inches by three, and nine feet in length, or if larch poles, sixteen 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 two feet in the ground firmly, and the ground ends must be charred two feet four inches from the bottom, which adds much to their durability: it will thus be seen that this, the back line of studs, will stand seven feet in height clear from the surface. For the front wall, ten studs, four feet long, must be inserted in the ground one and a half feet, so that they stand two feet six inches clear from the surface; on these studs, both at front and back, must be nailed a plate four inches by two and a half, on which the rafters are to rest; the studs are thus far arranged in two lines. Now, then, for the rafters: these must be fourteen feet long, and four inches by two 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 half-inch board, three-quarters of an inch wide; this will leave half an inch and one-eighth 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 mortised, 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 three-quarter-inch deal board, six 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, one inch thick and six 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, seven feet three inches (with the plate) high at back, and two feet nine 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 $2\frac{1}{2}d.$ or $3d.$ per foot, and the best size twenty inches by twelve; putting the laps, as it prevents breakage by frost; placing it cross-wise, so that the rafters must be *about twenty inches asunder*. On and outside the back studs, half-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, two feet six inches by one foot, in grooves, must be fixed, for complete ventilation; two close to the roof, and two about eighteen inches from it.

The front must have, also, half-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 four feet nine inches in height, a person must be of very diminutive stature, the inquiry arises, How is head-room to be made? How simple is the answer! Make a trench two feet six inches wide, and two feet deep, in the centre of the ground plan; this will leave a border on each side four feet nine inches wide. The bottom of this trench forms the footpath; its sides must be supported with boards, or with four-inch brickwork. 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 four inches deep; they may then be forked over to about nine 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 trees 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.

Orchids. Amongst orchids are to be found flowers presenting a most striking contrast in general appearance, from the small green, inconspicuous ones of *Hermidium monorchis* to the large, richly coloured forms of *Cattleya labiata*, and yet all these can be referred to one type, so natural is the order. Each flower consists of a perianth of six segments arranged in two circles or whorls, each consisting of three members. The outer three are most frequently alike in shape, size, and colour. Of the three inner two are alike, but the third (originally superior, but at length inferior through the torsion of the ovary) is very different, generally much larger, often spurred, and differently, if not more brightly coloured, and is known as the lip or labellum. Rarely are the six perianth segments similar, except in a few Australian genera. Of the stamens only one is developed, except in the tribe *Cypripediæ*, where there are two. The stamen is adnate with the style to form the column. The pollen is usually waxy, and united into definite masses (pollinia), and escapes either by the falling off of a cap or operculum, or by longitudinal slits. On the face of the column opposite to the labellum are to be found the two united viscid stigmas, the third forms a special organ (rostellum) at the base of the anther. The ovary is inferior, one-celled with numerous ovules on three parietal placentas.

In no other order is the connection between the shape of the flower and its fertilization by insects so apparent as in orchids. For a full account of this the reader is referred to Darwin's "Fertilization of Orchids."

In Hooker and Bentham's *Genera Plantarum* the genera of Orchids are arranged in five tribes, characterized as follows:

1. **EPIDENDRÆÆ.** Anther 1, posterior, operculate, cells distinct, parallel. Pollinia waxy, one to four in each cell, in one or two rows, free, or those in each cell united by viscous matter, or by a granular appendage, very rarely affixed to the rostellum, *e.g.*, *Epidendrum*, *Laelia*, *Cattleya*, *Masdevallia*, etc.

2. **VANDÆÆ.** Anther 1, posterior, operculate, incumbent, or applied to the rostellum, cells generally confluent. Pollinia waxy, generally two or four in adjacent (anterior and posterior) pairs,

often stipitate, *e.g.*, *Odontoglossum*, *Oncidium*, *Phalaenopsis*, *Sarcanthus*, etc.

3. **NEOTTIÆÆ.** Anther 1, posterior, operculate or erect and persistent, cells distinct parallel. Pollinia granular, powdery or setlike. Stem not bulbous, *e.g.*, *Anæctochilus*, *Vanilla*, etc.

4. **OPHRYDÆÆ.** Anther 1, posterior, erect, prone or reflexed, cells parallel or divergent, adnate with the clinandrium, often continuous at the base with the rostellum. Pollinia granular, in each cell produced into a basal candle, which remains attached to them on dehiscence, *e.g.*, *Ophrys*, *Orchis*, etc.

5. **CYPRIPEDIÆÆ.** Anthers 2, sessile or stipitate at the sides of the rostellum, the posterior one often sub-petaloid, pollinia granular, *e.g.*, *Cypripedium* and *Selenipedium*.

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*. Many orchids, however, are now known to succeed, and indeed to thrive better in the temperatures of a greenhouse than in those of a stove. Among them are *Bletia verucunda*, *Cypripedium insigne*, *Odontoglossum grande*, *Phaius grandifolius*, *Lycaste Skinneri*, and *Cattleya Forbesii*, while others, such as *Cypripedium spectabile* are quite hardy.

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 equalized. 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 Hindostan, 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 stove species, 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 warmer 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 ten inches wide, inside measure. The diameter of the pipes should be three inches and a half. 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 mornings 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 eighteen 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 eighteen feet wide requires four tanks, a house fourteen feet will require three; nine 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 the saddle boiler.

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 nine 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.

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 two 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 plants stand, 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 catch-

ing 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 quite indispensable in the orchid-house. 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 *Stanhopeas*, *Gongoras*, 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 six or nine 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. *Zygopetalum violaceum* and *Z. meled-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 Indian 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—*Aerides*, *Angraecum*, *Phalænopsis*, *Renanthus*, *Saccobolium*, *Sarcanthus*, and *Vanda*. 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 the same temperature as that of the atmosphere of the house, 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 *Zygopetalum*. 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 fulness 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 “tiffany.” It is thin, yet just close enough in the mesh 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 two 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 three inches. These boards are about three quarters 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 $2\frac{1}{2}$ inches wide, and a quarter of an 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 *Cattleyas*. 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 com-

post 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 four 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 nine 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 three 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 quan-

tity 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 two or three inches above the level of the edge of the pot in proportion to its width. A small pot need not have the plant above one inch raised, a middling plant two inches, and for the largest-sized plant three 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 *Cattleyas* or *Dendrobiums*; 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 six 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 it 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 basket 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 the 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 *Stanhopeas*, 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, aerial 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 *Stanhopea insignis* and its varieties, *S. tigrina* and its varieties, and all that have, like these, short and few-flowered racemes. Such kinds as *S. oculata*, *Wardii*, and *quadrifloris*, 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, two inches wide at the bottom, three inches deep, and five 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 two-inch-wide pots at the bottom, the hole ought to be three-quarters 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 oxidized, 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 the 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. 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 seven inches wide, and three rods deep. In this size, small *Stanhopeas*, and small plants of *Aerides*, *Saccobium*, *Vandas*, *Gongoras*, etc., 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 *Aerides odorata*.

This plant is four feet high, and two and a half feet through. The rods used for it are nearly as thick as a moderate-sized man's wrist. The basket is two 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 six 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 one 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 eight inches above the top of the smaller-sized baskets, and from a foot to eighteen 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 pseudo-acacia*. Its wood is firm, and does not soon decay. The next best is the oak. 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 other 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.

Orchidium. A synonym of *Calypso*.

O'rchis. (From *orchis*, testiculate; referring to the two oblong, bulb-like roots of many of the species. *Nat. ord., Orchideæ*; *Tribe, Ophrydeæ-Serapieæ.*)

Chiefly an European genus of ground orchids. Seeds, as in *Ophrys*, when obtainable; division of the tuberous roots, though they do not relish transplanting well; it should be done when the plants are in a dormant state. The British species are chiefly found on chalky hills, and in pastures where calcareous matter abounds. The exotic kinds like an addition of fibry peat. The

tender ones, in fact all, when cultivated, should be treated as alpinæ; those found in rich pastures require a moister situation.

- O. acuminata*. 1. Purple. May. Barbary. 1815.
 — *coriophora*. 1. Brown. June. Switzerland. 1825.
 — *foliosa*. 1. Purple. May. Madeira. B. M. t. 5074.
 — *fuscescens*. $\frac{1}{2}$. Yellowish. June. Pennsylvania. 1831.
 — *globosa*. $\frac{2}{3}$. Purple. June. Austria. 1792.
 — *hircina*. 1. Dull-green, greenish-white, purple. June. Europe. Eng. Bot. ed. 3, t. 1448.
 — *roma'na*. Lip rosy-purple. Rome. 1871.
 — *iberica*. White. June. Caucasus. 1819.
 — *la'etea*. Purple. May. Barbary. 1815. B. M. t. 1932.
 — *latifolia*. 1. Pink. June. Britain.
 — *Barto'ni*. Ireland. 1880.
 — *lago'tis*. Purple; lip with darker purple bands. Alps of Piedmont. 1869.
 — *laxiflora*. $\frac{2}{3}$. Purple. June. Europe. 1820. Eng. Bot. ed. 3, t. 1456.
 — *longibractea'ta*. $\frac{1}{2}$. Purple. May. Sicily. 1818. B. R. t. 357.
 — *longico'rnis*. $\frac{2}{3}$. Purple. May. Barbary. 1815. B. M. t. 1944.
 — *ma'era*. Pale purple. May. Britain.
 — *macula'ta*. $\frac{1}{2}$. Flesh. June. Britain.
 — *ma'scula*. 1. Purple. May. Britain. Eng. Bot. ed. 3, t. 1455.
 — *milita'ris*. 1. Purple. May. Switzerland. 1825. Eng. Bot. ed. 3, t. 1452.
 — *ve'ra*. Purple. May. Switzerland. 1825.
 — *ma'rio*. $\frac{2}{3}$. Purple. May. Britain. Eng. Bot. ed. 3, t. 1454.
 — *pa'llens*. Pale yellow. May. Europe. 1825. Syn., *O. sulphurea*. B. M. t. 2569.
 — *papilionacea*. $\frac{1}{2}$. Purple. April. Rome. 1788. Syn., *O. rubra*.
 — *provincia'lis*. $\frac{2}{3}$. Purple, yellow. June. Switzerland. 1825.
 — *pauciflora*. $\frac{2}{3}$. Purple. July. Italy. 1825.
 — *pseu'do-sambu'cina*. $\frac{2}{3}$. Purple. April. Italy. 1828.
 — *lute'scens*. $\frac{2}{3}$. Yellow. June. Italy. 1828.
 — *quadripuncta'ta*. $\frac{2}{3}$. Purple. April. Italy. 1828.
 — *Roberta'na*. 1. Lilac. January. 1884.
 — *ru'bra*. See *O. papilionacea*.
 — *sacca'ta*. $\frac{2}{3}$. Purple. April. Sicily. 1828.
 — *sambu'cina*. $\frac{2}{3}$. Yellow. April. Switzerland. 1825. Syn., *O. Schleicheri*. Swt. Fl. Gard. t. 199.
 — *specta'bilis*. Pink. June. N. Amer. 1801. B. C. t. 78.
 — *Stabia'na a'uba*. White. 1883.
 — *sulphu'rea*. See *O. pallens*.
 — *tephrosia'nthos*. $\frac{1}{2}$. Purple. April. England. B. M. t. 3426.
 — *densiflora*. 1. Purple, white. May. Europe.
 — *tridentata*. $\frac{2}{3}$. Pale purple. May. S. Europe. 1818. B. R. t. 367.
 — *undula'ta*. 1. Pale purple. December. Sicily. 1818.
 — *undulatifolia*. Pale purple. May. Britain.
 — *ustula'ta*. $\frac{1}{2}$. Purple. May. England. Eng. Bot. ed. 3, t. 1450.
 — *variega'ta*. $\frac{2}{3}$. Pale purple. May. South Europe. 1818.

Orchis, Bee. *O'phrys api'fera*.

Orchis, Fly. *O'phrys musci'fera*.

Orchis, Humble-Bee. *O'phrys bombili'fera*.

Orchis, Lizard. *O'rchis hirci'na*.

Orchis, Marsh. *O'rchis latifolia*.

Orchis, Military. *O'rchis milita'ris*.

Orchis, Spider. *O'phrys arani'fera*.

Ore'lia. A synonym of **Allamanda**.

Oreoda'phne. (From *oreos*, a mountain, and *daphne*, mountain daphne. Nat. ord., *Lauraceæ*; Tribe, *Perseaceæ*.) *O. bullata*. See *Ocotea bullata*.

Oreodo'xa. (From *oreos*, a mountain, and *doxa*, glory; alluding to the lofty stature of some of the species. Nat. ord., *Palmææ*; Tribe, *Areceæ*.)
 Stove palms. For cultivation, see PHŒNIX.

- O. acuminata*. 50. Brazil. 1847.
 — *granate'nsis*. Columbia. 1879.
 — *olera'cea*. 100. Jamaica. 1844.—Cabbage Palm.
 — *re'gia*. 50. Cuba. 1836.
 — *Sano'na*. 100. Carthagen. 1847.
 — *ventricosa*. See *Gaussia Ghiesbreghtii*.

Oreopa'nax. (From *oreos*, a mountain, and *Panax*. Nat. ord., *Araliaceæ*.)
 Small evergreen stove trees. Cuttings under a hand-glass in heat. Sandy loam and peat.

- O. Andrea'num*. Andes of Ecuador. Rev. Hort. 1882, p. 523, fig. 117.
 — *capitata'um*. Green. August. W. Indies. 1779. Syn., *Hedera capitata*.
 — *dactylifolium*. Mexico.
 — *Epremesnilia'num*. Perhaps a variety of *O. dactylifolium*. 1882.
 — *Linde'ni*. Green. September. Mexico.
 — *pelta'tum*. Mexico.
 — *platanifolium*. White. Andes of Peru. Syns., *Arabis platanifolia* and *Hedera platanifolium*.
 — *Thibautii*. Green. November. Mexico 1862. Syn., *Arabis Thibautii*.
 — *zalapa'nse*. Greenish. Mexico. 1869. Syn., *Hedera zalapensis*.

Orgy'ia anti'qua. The Vapourer Moth. The caterpillar of this moth is extremely destructive, by feeding on the foliage of almost any tree, but especially of the Hawthorn, Pear and other Rosaceæ trees. It is of a dark grey colour, with reddish tubercles and numerous tufts of yellowish hairs. The male moths are brownish, with the fore wings clouded and having a white crescent-shaped mark near the hinder angle. The females, which are grey, have only rudimentary wings. The yellowish cocoons should be collected and burnt, the trees syringed with soft-soap during the caterpillar stage.

Origanum. Marjoram. (From *oros*, mountain, and *ganos*, joy; referring to the natural places of growth. Nat. ord., *Labiatae*; Tribe, *Satureiæ*.)

The following are all hardy herbaceous perennials. Seeds, division of the roots, and cuttings; sandy soil. See MARJORAM.

- O. ægyptiacum*. 1. Pink. July. Egypt. 1731.
 — *crassifolium*. Purplish. June. Levant.
 — *Dictamnus*. 1. Pink. July. Candia. 1551. B. M. t. 298.
 — *heracleoticum*. 1. White. August. South Europe. 1640.
 — *hortensis*. See *O. Majorana*.
 — *hybridum*. 1. Pink. August. Levant. G. C. 1838, iii. p. 232, fig. 37. Syn., *O. pulchellum* and *O. Tournefortii*.
 — *Majorana*. 1-2. Purplish. June. N. Africa. 1573. Syn., *O. hortensis*, *O. majoranoides* and *Majorana hortensis*.
 — *majoranoides*. See *O. Majorana*.
 — *Maru* of B. M. t. 2605. See *O. microphyllum*.
 — *microphyllum*. 1. Pink. June. Palestine. Syn., *O. Maru* of B. M. t. 2605.
 — *nerosum*. Pink. June. Egypt. 1823.
 — *normale*. 1. Blue. June. Nepaul. 1819.
 — *Ornites*. 1. Whitish. August. Mediterranean. 1759. Sibth. Fl. Gr. t. 572.
 — *pulchellum*. See *O. hybridum*.
 — *sipyllum*. 1. Pink. August. Levant. 1699. Sibth. Fl. Gr. t. 570.
 — *stoloniferum*. 1. Pink. June. Podolia. 1823.
 — *Tournefortii*. Andr. Rep. t. 537. See *O. hybridum*.
 — *vulgaris*. 2. Pink. August. Britain.
 — *flor-albo*. 1. White. June. Britain.
 — *humile*. 1. Purple. June. Asia. 1813.
 — *prismaticum*. White. July. Mediterranean.
 — *virens*. 1. Purple. June. Portugal.

Orithalia. A synonym of **Agalmyla**.

Orithyia. A synonym of **Tulipa**.

Orixa. (Derivation uncertain. Nat. ord., *Celastrineæ*.)

O. japonica. Green. Japan. Gf. t. 1232.

Ormoscopon. (From *ormos*, a chain, and *karpos*, a fruit; referring to the pods. Nat. ord., *Leguminosæ*. Syn., *Diphaca*.)

Stove or greenhouse shrubs. Old plants may be turned out into the borders in summer. Cuttings of half-ripened shoots, in April, in peat and loam.

O. coronilloides. Pale yellow. May. Tropical Africa.

— *sennoioides*. 3. White. China. Wight Ic. t. 297. Syn., *Diphaca cochinchinensis*.

Ormosia. Bead-tree. (From *ormos*, a necklace; referring to the seeds of *O. coccinea*, which are scarlet, with a dark spot, which are strung for necklaces. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ*. *Macrotropis* is regarded as a synonym of this by Bentham and Hooker. 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, fibry peat, and a little loam. Winter temp., 48° to 55°; summer, 60° to 85°.

O. coccinea. 10. July. Guiana. 1823.

— *dasycarpa*. 10. June. W. Ind. 1793.

Ornitharium. (From *ornitharion*, a small bird; alluding to the flowers.

Nat. ord., *Orchideæ*; Tribe, *Vandæo-Sarcantheæ*.) A synonym of **Sarcochilus**.

O. striatum. Paxt. Fl. Gard. i. p. 188, fig. 117. See *Sarcochilus teres*.

Ornithidium. (From *ornis*, *ornithos*, a bird, and *eidos*, like; the column is beak-like. Nat. ord., *Orchideæ*; Tribe, *Vandæo-Maxillariæ*.)

Stove epiphytal orchids, with rather small flowers.

O. album. See *Camaridium album*.

— *coccineum*. 1. Crimson. June. W. Indies. 1790. Syn., *Cymbidium coccineum*. B. M. t. 1437.

— *densum*. White, purplish. Mexico. 1836. Ref. Bot. t. 105. Syn., *Maxillaria densa*. B. R. t. 1804.

— *ochraceum*. Ochre, purple, white, mauve. New Grenada. 1887.

— *strumatum*. White. Costa Rica. 1875.

Ornithocephalus. (From *ornis*, a bird, and *kephale*, a head; in reference to the form of the column and anther. Nat. ord., *Orchideæ*; Tribe, *Vandæo-Oncidiæ*.)

Small stove epiphytal orchids. For cultivation, see EPIDENDRUM.

O. grandiflorus. White, yellow. 1832.

— *Oberonia*. Yellow, white. Trinidad. 1869.

Ornithochilus. (From *ornis*, a bird, and *cheilos*, a lip; in allusion to the shape of the lip or labellum. Nat. ord., *Orchideæ*; Tribe, *Vandæo-Sarcantheæ*.)

Stove epiphytal orchid. Culture the same as for *ÆRIDES*.

O. fuscus. Brownish-yellow, purple, reddish. Burmah. 1865. Syn., *Ærides difforme*.

Ornithogalum. Star of Bethlehem. (From *ornis*, a bird, and *gala*, milk. Nat. ord., *Liliaceæ*; Tribe, *Scilleæ*. Allied to *Scilla*.)

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. armeniacum. White, green. Armenia. 1879.

— *bulbiferum*. 1. April. Russia. 1821.

— *comosum*. 1. July. Austria. 1596. Jacq. Ic. t. 426.

— *divaricatum*. 2. July. California. 1841. B. R. 1842, t. 28.

— *exsepium*. 1. May. Italy. 1824.

— *fimbriatum*. 1. February. Crimea. 1820. B. M. t. 3077.

— *glaucocephalum*. White. Asia Minor. 1875.

— *marginatum*. 1. Greenish-white. March. Asia. 1843. B. R. 1845, t. 21.

— *montanum*. 1. May. Italy. 1824. B. R. 1838, t. 28.

— *narbonense*. 1. July. South Europe. 1810. B. M. t. 2510.

— *nutans*. 1. June. Britain. B. M. t. 269.

— *pyramidalis*. 2. June. Spain. 1752. Jacq. Ic. t. 425.

- O. pyrenaicum*. 2. Green. June. England. Red Lil. t. 234.
 — *sororium*. White. Taurus. 1875.
 — *stachyodes*. 2½. Lilac, yellow. May. South Europe. 1771.
 — *umbellatum*. 1. May. England.
- GREENHOUSE.
- O. acuminatum*. 2. White, green. Algoa Bay. 1862.
 — *albovirens*. 1. White, green. Natal. 1878.
 — *alliacum*. ½. September. Chili. 1821. B. C. t. 1818.
 — *anomalum*. Yellowish. S. Africa. 1862.
 — *apertiflorum*. 1½. Greenish-white. Oriental. 1889.
 — *arabicum*. 1½. May. Egypt. 1629. B. M. t. 728.
 — *aurantiacum*. ½. Orange. S. Africa.
 — *aurum*. ¾. Yellow. June. Cape of Good Hope. 1790. B. M. t. 190.
 — *barbatum*. 1. June. Cape of Good Hope. 1795. Jacq. H. Schoenb. t. 91.
 — *Bergii*. White, green. March. 1816.
 — *biflorum*. 1½. April. Peru. 1832. Swt. Fl. Gard. ser. 2, t. 246.
 — *biflorum*. ½. August. Chili. 1831. B. C. t. 1802.
 — *brachystachys*. March. Dahuria. 1821.
 — *calcaratum*. 1. White, green. September. S. Africa. 1872.
 — *capitatum*. White, purple. February. S. Africa. 1863.
 — *caudatum*. 3. White, green. May. Cape of Good Hope. 1774. B. M. t. 805.
 — *chloranthum*. 1. Greenish. S. Africa. 1875.
 — *chloroleucum*. 1. July. Valparaiso. 1834. B. R. t. 1853.
 — *clivatum*. ½. April. Cape of Good Hope. 1819.
 — *coarctatum*. 1½. White, green. June. Cape of Good Hope. 1804. Jacq. Ic. t. 435.
 — *concinnum*. ¾. May. Portugal. 1797.
 — *conicum*. 1. White, green. June. Cape of Good Hope. 1823. B. M. t. 3538.
 — *corymbosum*. 1½. White, green. May. Chili. 1823. B. R. t. 906.
 — *crenulatum*. ½. April. Cape of Good Hope. 1816.
 — *elatum*. 3. March. Egypt. 1804. Andr. Rep. t. 528.
 — *flavissimum*. 1. Yellow. June. Cape of Good Hope. 1804. Jacq. Ic. t. 436.
 — *fuscatum*. ½. Grey. June. Cape of Good Hope. 1820. Jacq. Ic. t. 429.
 — *geminiflorum*. 1. Greenish-white. Luna.
 — *gramineum*. B. M. t. 2419. See *Nothoscordium striatellum*.
 — *gracile*. Snow white. 1883. Supposed to be a form of *O. thyrsoides*.
 — *hispidum*. ½. June. Cape of Good Hope. 1824.
 — *humiflorum*. ½. White, green. March. S. Africa. 1874.
 — *ixoides*. ½. May. California. 1796.
 — *junciflorum*. ½. July. Cape of Good Hope. 1794. Jacq. H. Schoenb. t. 90.
 — *laetevum*. 1. June. Cape of Good Hope. 1796. Jacq. Ic. t. 434. B. M. t. 1134.
 — *latiflorum*. 1½. June. Egypt. 1629. B. M. t. 876.
 — *longibracteatum*. ½. May. Cape of Good Hope. 1817. Jacq. H. Vind. iii. t. 29.
 — *maculatum*. ½. May. Cape of Good Hope. 1823.
 — *miniatum*. Yellow. June. Cape of Good Hope. 1790. Jacq. Ic. t. 438.
 — *nanum*. ½. Greenish-white. March. Berbeck. 1843. B. R. 1845, t. 39.
 — *neveum*. ½. May. Cape of Good Hope. 1774. B. E. t. 235.
 — *notatum*. July. Cape of Good Hope. 1825.
 — *odoratum*. 1½. Pale yellow. May. Cape of Good Hope. 1795. Jacq. Ic. t. 432.

- O. ovatum*. 1. May. Cape of Good Hope. 1824.
 — *pilosum*. 1. May. Cape of Good Hope. 1826.
 — *polyphyllum*. ½. June. Cape of Good Hope. 1824. Jacq. Ic. t. 430.
 — *prasinum*. Pea-green. South Africa. B. R. t. 158.
 — *refractum*. White. Swt. Fl. Gard. ser. 2, t. 58.
 — *revolutum*. ½. White, yellow. March. B. M. t. 653.
 — *rupestre*. ½. May. Cape of Good Hope. 1795.
 — *Saundersiae*. 3. White, greenish. Transvaal. 1891.
 — *secundum*. ½. August. Cape of Good Hope. 1826. Jacq. Ic. t. 333.
 — *squilla*. 3. May. South Europe. 1829. B. M. t. 918.
 — *Sternbergii*. B. C. t. 1209. A synonym of *Gagea minima*.
 — *suaveolens*. ½. June. Cape of Good Hope. 1826. Jacq. Ic. t. 431.
 — *subulatum*. ½. White, green. September. S. Africa. 1872.
 — *tenuiflorum*. ½. June. Cape of Good Hope. 1818. Jacq. Ic. t. 427.
 — *tenuiflorum*. 1. April. Cape of Good Hope. 1819. Red Lil. t. 312.
 — *thyrsoides*. 1½. Yellow. June. Cape of Good Hope. 1757. Jacq. H. Vind. iii. t. 28.
 — *flavescens*. 1½. Yellow. June. Cape of Good Hope. 1800.
 — *trigynum*. White, green. June. 1825. Red Lil. t. 417.
 — *uniflorum*. ½. Green. June. Gibraltar. 1805.
 — *vittatum*. 1. Yellow, green. June. S. Africa. 1802. Syn., *Albua vittata*.

Ornithoglossum. (From *ornis*, a bird, and *glossa*, a tongue; referring to the shape of the petals. Nat. ord., *Liliaceae*; Tribe, *Anguillariceae*.)

Greenhouse bulbs.

- O. glaucum*. ½. Green, edged with purplish-brown. December. South Africa. 1825. Syns., *Cymation laevigatum*, *Lichtensteinia laevigata* and *Melanthium viride*. B. M. t. 994.
 — *undulatum*. ½. Green, purple. September. South Africa. 1825. Syns., *O. undulatum* and *Lichtensteinia undulata*.

Ornithopteris. (From *ornis*, a bird, and *pterus*, a fern. Nat. ord., *Filices*.) A synonym of *Pteris*.

Ornithopus. Bird's-foot. (From *ornis*, a bird, and *pous*, a foot; referring to the claw-like seed-pods. Nat. ord., *Leguminosae*; Tribe, *Hedysaraceae*.)

Low-growing, yellow, pea-blossomed, hardy annuals. Seed, sown in the garden-border in March.

- O. aurum*. ½. July. Spain. 1816.
 — *bracteatum*. ½. July. South Europe. 1700.
 — *perpusillus-nodosus*. ½. White, red. May. France.
 — *repandum*. ½. July. Barbary. 1805.
 — *scorpioides*. ¾. July. South Europe. 1506. Sibth. Fl. Gr. t. 715.
 — *tetraphyllum*. A synonym of *Zornia tetraphylla*.

Ornithoxanthum. A synonym of *Gagea*.

Ornitrophe. A synonym of **Schmidelia**.

Ornus. Flowering Ash. (From *oreinos*, ancient name of the Ash; applied on account of the resemblance and affinity. Nat. ord., *Oleinae*; Tribe, *Fraxineae*.) See **Fraxinus**.

O. americana. See *Fraxinus americana*.
— *europæa.* See *Fraxinus Ornus*.

O'robis. Bitter Vetch. (From *oro*, to excite, and *bous*, an ox; nourishing food. Nat. ord., *Leguminosæ*; Tribe, *Vicieæ*.) United with **Lathyrus** in the Genera Plantarum, but differing in the absence of a terminal tendril to the petiole.

Hardy herbaceous perennials, except *saxatilis*. Seeds; division of the plant in spring; sandy, deep loam.

- O. albus.* 1. White. April. Austria. 1794. Swt. Fl. Gard. t. 22.
— *alpestris.* 2. Purple. June. Hungary. 1817.
— *americana.* 2. Pale purple. Jamaica. 1731.
— *angustifolius.* 1. White. April. Siberia. 1766.
— *atro-purpureus.* B. R. t. 1763. See *Vicia sicula*.
— *aurantius.* 1½. Yellow. June. Iberia. 1818. Swt. Fl. Gard. ii. t. 198.
— *canescens.* B. M. t. 3117. See *O. filiformis*.
— *coactus.* 1. Scarlet. April. Vera Cruz. B. C. t. 833.
— — *unijugus.* 1. Scarlet. April. N. Amer.
— *divaricatus.* ¾. Purple. June. Pyrenees. 1816.
— *erectus.* 1. Yellow, red. July.
— *filiformis.* 1½. White, blue. May. France. 1016. Syn., *O. canescens*. B. M. t. 3117.
— *Fischeri.* Swt. Fl. Gard. t. 239. See *Vicia sicula*.
— *formosus.* ¾. Purple. June. Caucasus. 1818.
— *hirsutus.* 1. Red. May. Thrace. 1822. B. M. t. 2345.
— *humilis.* ¾. Purple. July. Dahuria. 1825.
— *Jordanii.* Blue. June. Lucania. 1830.
— *laetius.* 1½. White. April. Caucasus. 1820.
— *laevigatus.* 1½. Yellow. June. Hungary. 1820.
— *lathyroides.* 2. Blue. June. Siberia. 1758. B. M. t. 2098.
— *laxiflorus.* 1. Violet. June. Candia. 1820.
— *longifolius.* Lilac. June. Missouri. 1827.
— *luteus.* 1½. Lilac, yellow. June. Siberia. 1759. Swt. Fl. Gard. ser. 2, t. 115.
— *multiflorus.* 2. Pale red. July. Italy. 1820.
— *niger.* 3. Purple. June. Britain. B. M. t. 2261.
— *ochroleucus.* 2. Yellow, white. June. Hungary. 1816.
— *pallidus.* 1. White. April. Tauria. 1823.
— *pauciflorus.* 1. Purple. June. 1820.
— *pisiformis.* 1. Purple. May. S. Europe. 1822.
— *pyrenaicus.* 2. Purple. May. Pyrenees. 1699.
— *saxatilis.* 1. Purple. July. France. 1820. Annual.
— *sessilifolius.* 1. Purple. May. Tauria. 1823. Sibth. Fl. Gr. t. 692. B. M. t. 2796.
— *stipulatus.* 6. Purple. May. N. Amer. B. M. t. 2937.
— *sylvaticus.* 2. Crimson, purple. June. Britain. B. C. t. 1181.
— *tenuifolius.* ¾. Purple. June. Europe. 1810.
— *Tournefortii.* 1½. Yellow, purple. June. Hungary. 1821.

- O. tuberosus.* 1. Purple. June. Britain.
— *variegatus.* 1. Purple. July. Italy. 1821. Swt. Fl. Gard. ser. 2, t. 28.
— *varius.* 1½. Yellow, red. April. Italy. 1759. B. M. t. 675.
— *venetus.* 1. Purple. April. Germany.
— *venosus.* 1. Blue. June. Siberia. 1820.
— *verrucosus.* 1. Purple. March. Europe. 1629. B. M. t. 521.
— — *carneus.* 1. Flesh. March.
— *vicioides.* 1. Yellow. June. Hungary. 1819.

Oro'ntium. (The ancient Greek name for a plant supposed to grow on the banks of the river *Orontes*. Nat. ord., *Aroideæ*.)

Hardy aquatic perennial. Propagated by divisions.

- O. aquaticum.* Pale green. May. North America. B. C. t. 402.
— *japonicum.* B. M. t. 898. See *Rohdea japonica*.

Orotha'mnus. (From *oros*, mountain, and *thamnos*, shrub. Nat. ord., *Proteaceæ*.) A synonym of **Mimetes**.
O. Zeyheri. B. M. t. 4357. See *Mimetes Zeyheri*.

Oro'xylum. (From *oros*, a mountain, and *xylon*, wood. Nat. ord., *Bignoniaceæ*.)

Stove tree, requiring abundance of space for its roots to spread. Turfy loam, leaf-mould, and sand. Imported seeds, or cuttings.

- O. indicum.* 40. White, purple. India and Malayan Archipelago. 1775. Syn., *Calosanthus indica*.

Orphanide'sia. (Derivation not stated. Nat. ord., *Ericaceæ*.)

A dwarf, hardy shrub.

- O. gaultherioides.* Caucasus. Gfl. 1891, p. 469, fig. 87.

O'rphium. (After *Orpheus* of Greek mythology. Nat. ord., *Gentianeæ*.)

Greenhouse shrub. For culture, see **CHIRONIA**.

- O. frutescens.* 1-2. Red. South Africa. 1756. Syn., *Chironia angustifolia*, B. M. t. 818; *C. decussata*, B. M. t. 707, and *C. frutescens*, B. M. t. 37.

Orthocarpus. (From *orthos*, straight, and *karpos*, fruit. Nat. ord., *Scrophulariaceæ*; Tribe, *Euphrasieæ*.)

- O. purpureus.* Purple. California. Gfl. t. 1166.

Ortho'ceras. (From *orthos*, straight, and *keras*, a horn. Nat. ord., *Orchideæ*; Tribe, *Ophrydæ-Diseæ*.)

Greenhouse terrestrial orchid.

- O. Solandri.* 1-2. Greenish-yellow. Australia and New Zealand.

Ortho'chilus. A synonym of **Eulophia**.

Ortho'pogon. (From *orthos*, straight, and *pogon*, a beard. Nat. ord., *Gramineæ*.) See **Oplismenus**.

- O. hirtellus.* See *Oplismenus hirtellus*.
— *lobatus.* See *Oplismenus lobatus*.

Orgie'sia. See **Æchmea**.

Orthosiphon. (From *orthos*, straight, and *siphon*, a tube; referring to the tube of the flower. Nat. ord., *Labiatae*; Tribe, *Ocimoideae*. 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 fibry peat; common stove and greenhouse treatment.

- O. a'sperus*. White. May. E. Ind. 1827. Stove herbaceous.
 — *incu'rus*. 1. Pale scarlet. May. E. Ind. 1839. Stove evergreen. B. M. t. 3847.
 — *rubicu'ndus*. Purple. June. Nepal. 1826. Greenhouse evergreen. Ic. Pl. t. 459.
 — *stami'neus*. 2. Lilac. July. E. Indies. 1869.
 — *virga'tus*. Blue. June. Nepal. 1826. Greenhouse evergreen.

Orthostemma. (From *orthos*, straight, and *stemma*, a crown. Nat. ord., *Rubiaceae*.) A synonym of *Pentas*.

Orthotæ'nia turiona'na. See *Pine-bud moth*.

Orthrosanthus. (From *orthros*, morning, and *anthos*, a flower; flowers expand early in the day. Nat. ord., *Iridae*; Tribe, *Sisyrinchieae*. 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*. 1. Peru. 1876.
 — *multiflo'rus*. 1. Blue. June. N. Holland. 1820. Syn., *Sisyrinchium cyaneum*. B. R. t. 1090.

Orvala. (From *Orvale*, the French for *Salvia Horninum*. Nat. ord., *Labiatae*.)

Hardy, herbaceous perennial. Propagated by seeds, or division of the roots.

- O. lamioi'des*. 1½. Pale reddish-purple, white. April. South Europe. 1596. Syn., *Lamium Orvala*. B. M. t. 172.

Ory'za. Rice. (From *Erus*, its Arabic name. Nat. ord., *Gramineae*.)

Stove grass from swampy parts of the East Indies. It flourishes best in a pot plunged into a warm tank.

- O. sati'va*. Widely cultivated in the Tropics as a food plant, but of no horticultural value in this country.

Osage Apple. *Mach'ra*.

Osbeckia. (Named after *P. Osbeck*, a Swedish naturalist. Nat. ord., *Melastomaceae*; Tribe, *Osbeckieae*. Allied to *Melastoma*.)

Cuttings of side, firm, stubby shoots in sand, under a bell-glass, and in bottom-heat; sandy loam, fibry peat, a little dried cow-dung, and charcoal. Winter temp., 45° to 58°; summer, 60° to 85°.

STOVE DECIDUOUS SHRUBS.

- O. cané'scens*. 1838. B. M. t. 3790.
 — *glomerata*. 1. Pink. July. Trinidad. 1818. B. M. t. 2838.

- O. nepale'nsis albiflo'ra*. 1½. White. August Nepal. 1829. B. R. t. 1475.

STOVE EVERGREENS.

- O. angustifolia*. 2. Rose. May. Nepal. 1826.
 — *a'spera*. 2. Purple. July. E. Ind.
 — *chine'nsis*. 2. Purple. July. China. 1818. B. C. t. 665.
 — *glomerata albiflo'ra*. 1½. White. January. Brazil. 1821.
 — *nepale'nsis*. 1½. Purple. June. Nepal. 1821.
 — *octa'nara*. 1. Rose. April. Mauritius. 1815. Syn., *Melastoma osbeckioides*. B. M. t. 2235.
 — *rostrata*. Rosy-pink. Bengal. 1881. B. M. t. 6575.
 — *rubicu'nda*. Purple. Ceylon. 1865.
 — *stellata*. 1. Pink. July. Nepal. 1820. B. R. t. 674.
 — *ternifolia*. 3. Lilac. May. Nepal. 1825.
 — *Wightia'na*. Purple. E. Indies. 1863. Wight Ic. t. 998.
 — *zeyla'nica*. 2. Yellow. August. Ceylon. 1799. B. R. t. 565.

Osier. *Salix vimina'lis*, or any of the other species of willows, which are grown for basket-making.

Osmanthus. (From *osme*, perfume, and *anthos*, a flower; flowers being fragrant. Nat. ord., *Oleaceae*; Tribe, *Oleaceae*.)

Hardy evergreen shrubs. For cultivation, see CAMELLIA.

- O. america'nis*. 6. White. June. North America. 1758.
 — *aquifolius*. White. Japan. There are two varieties with white variegated leaves, one being a dwarf.
 — — *ilicifolius*. A dense, compact bush.
 — — *myrtifolius*. Leaves without spines.
 — *fra'grans*. 6-10. Yellowish or white. Summer. Japan and China. 1771. Syn., *Olea fragrans*. B. M. t. 1552.

Osmi'tes. (From *osme*, perfume; smells like camphor. Nat. ord., *Compositae*; Tribe, *Inuloideae*. Allied to *Relhania*.)

Greenhouse, white-flowered evergreens, from the Cape of Good Hope. 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*. 1. June. 1816.
 — *camphori'na*. 1½. May. 1794.
 — *denta'ta*. 1½. May. 1820.

Osmo'dium. A synonym of *Onosmodium*.

Osmu'nda. (The name of a Celtic deity. Nat. ord., *Filices*.)

Hardy, or greenhouse, brown-spored ferns. See FERNS.

- O. cinnamo'mea*. 2. June. N. Amer. 1772.
 — *Claytonia'na*. 2. August. N. Amer. 1772. Syn., *O. interrupta*.
 — *gra'cilis*. 1. June. N. Amer. 1827.
 — *hu'milis*. June. N. Amer. 1823.
 — *interru'pta*. See *O. Claytoniana*.
 — *japo'nica*. 1. Japan.
 — — *corymbi'fera*. Garden variety. 1883.
 — *java'nica*. 1-3. Eastern Coast of Asia. Syn., *O. Presliana* and *O. Vachellii*.
 — *patu'stris*. 2½. 1831.

- O. Prestia*'na. See *O. javanica*.
— *regalis*. 2. July. Britain.
— *spectabilis*. 2. July. N. Amer. 1811.
— *Vachelii*. See *O. javanica*.

EXCLUDED SPECIES.

- O. caroliniana*'na. See *Woodwardia angustifolia*.
— *crispata*. See *Cryptogramme crispata*.
— *humilis*. See *Anemia humilis*.
— *lunaria*. See *Botrychium lunaria*.
— *Phyllitidis*. See *Anemia Phyllitidis*.
— *proserpa*. See *Lomaria proserpa*.
— *Struthiopteris*. See *Onoclea germanica*.

Ossæ'a. (Named after *Ossa*, curator of the Havannah Botanic Garden. Nat. ord., *Melastomaceæ*; Tribe, *Miconieæ*. Allied to *Miconia*.)

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. fascicularis*. 6-10. White. Jamaica.
— *purpurascens*. 3. Purple. March. Jamaica. 1822.

Osteocarpus. (From *osteon*, bone, and *karpos*, fruit. Nat. ord., *Solanaceæ*.)

Greenhouse sub-shrub. Seeds; cuttings.

- O. rostratus*. Blue. Chili. Gf. t. 1175, figs. a-e. Syns., *Alona rostrata* and *Nolana rostrata*.

Osteomeles. (From *osteon*, bone, and *melon*, apple; the fruit. Nat. ord., *Rosaceæ*; Tribe, *Pomeæ*. Allied to *Amelanchier*.)

Hardy evergreen tree. For culture, see MEDLAR.

- O. ferruginea*. July. 1847.

Osteospermum. (From *osteon*, a bone, and *sperma*, a seed. Nat. ord., *Compositæ*; Tribe, *Calenduleæ*. 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 fibry peat. Winter temp., 40° to 45°.

- O. caeruleum*. 3. Blue. July. 1774. Jacq. Ic. t. 179.
— *calendulaeformis*. 2. July.
— *corymbosum*. 3. August. 1822.
— *ibicifolium*. 4. July. 1816.
— *incanum*. 3. August. 1815.
— *moniliferum*. 3. July. 1714.

Ostrich Fern. *Onoclea germanica*.

Ostrowskia. (After *Ostrowski*, a Russian botanist. Nat. ord., *Campanulaceæ*.)

Perennial herb, requiring the same culture as CAMPANULA.

- O. magnifica*. 4. Blue. Central Asia. 1837.

Ostrya. Hop Hornbeam. (From *ostryos*, a scale; scaly catkins. Nat. ord., *Cupuliferaæ*; Tribe, *Coryleæ*. 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 follow-

ing; layers, cuttings, and grafting on the common Hornbeam; good, deep, moist soil.

- O. carpinifolia*. Greenish-white. May. S. Europe. 1724. Syn., *O. vulgaris*.
— *virginica*. 20. April. N. Amer. 1622.
— *vulgaris*. Wats. Dendr. t. 143. See *O. carpinifolia*.

Oswego Tea. *Monarda didyma*.

Osyris. Poet's Cassia. (From *ozos*, a branch; referring to the numerous pliant branches. Nat. ord., *Santalaceæ*. Allied to *Santalinum*.)

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 conservatory wall.

- O. alba*. 3. White. South Europe. 1739. Sibth. Fl. Gr. t. 954.

Otacanthus. (From *ote*, sometimes, and *acantha*, a thorn. Nat. ord., *Acanthaceæ*; Tribe, *Ruellieæ*.)

Stove shrub. For cultivation, see RUELLIA.
O. caeruleus. Violet, blue. Brazil. 1862. Fl. Ser. t. 1526.

Otaheite Chestnut. *Inocarpus edulis*.

Otaheite Myrtle. *Securinega nitida*.

Otandra. A synonym of *Geodorum*.

Othe'ra. (Said to be from the Japanese name. Nat. ord., *Ilicineæ*. Closely allied to *Ilex*.)

Hardy shrub, requiring the same culture as ILEX.

- O. japonica*. White. Japan.

Othonna. Ragwort. (From *othone*, linen; referring to the soft, downy clothing of the leaves. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*.)

Greenhouse, yellow-flowered plants, from the Cape of Good Hope, except where otherwise mentioned. Seeds in a mild hotbed, in spring; annuals may be hardened off afterwards; perennials, by division of the plant; tuberos-rooted, by dividing them; shrubs, by cuttings of half-ripened shoots in sand, under a glass, in May; sandy loam, and a little fibry peat. Winter temp., 40° to 48°.

ANNUAL.

- O. tagetes*. 1. May. 1823.

HERBACEOUS.

- O. crassifolia*. Yellow. S. Africa. 1870. Trailing, basket plant.
— *linifolia*. 2. July. 1824.
— *pinnata*. 3. May. 1759. B. M. t. 768.
— *pinnatifida*. 1. July. 1523.

TUBEROUS-ROOTED.

- O. bulbosa*. 2. May. 1774.
— *filiculis*. 1½. April. 1791.
— *tuberosa*. August. 1842. B. M. t. 4038.

EVERGREEN SHRUBS.

- O. abrotanifolia*. 3. May. 1692. B. R. t. 108.
— *arborescens*. 2. July. 1723.
— *Athanasia*. 3. January. 1795.
— *carnea*. ¾. Yellow. S. Africa. 1867.
— *cheirifolia*. B. R. t. 266. See *Othonnopsis cheirifolia*.

- O. coronopifolia*. 2. August. 1731.
 — *denticulata*. 2. June. 1774. B. M. t. 1979.
 — *digitata*. 1½. July. 1824.
 — *labellifolia*. B. C. t. 728. A synonym of *Euryops virginicus*.
 — *furcata*. Pale yellow. January. Island of Ichaboe, Africa. 1844. Syns., *Ceradia furcata* and *Doria Ceradia*.
 — *heterophylla*. 2. May. 1812.
 — *pectinata*. B. M. t. 306. A synonym of *Euryops pectinatus*.
 — *perfoliata*. 1½. June. 1789. Jacq. H. Schoenb. t. 240.
 — *tenuissina*. 1½. May. 1759.
 — *triplinervia*. 5. Yellow. S. Africa. 1862.
 — *virginica*. A synonym of *Euryops virginicus*.

Othonno'psis. (From *Othonna*, and *opsis*, like; resembling the genus *Othonna*. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*.)

Greenhouse shrub. For culture, see OTHONNA.

- O. cheirifolia*. 1½. Yellow. May. Barbary. 1752. Syn., *Othonna cheirifolia*. B. R. t. 266.

Oti'dia. A section of **Pelargonium**.

Otorhynchus sulcatus. This insect pest is figured and described as *Curculio sulcatus* on p. 281, where it is only noted as being destructive to succulent plants; but it also attacks many shrubs and trees, peeling off patches of the bark, and doing other damage. The only remedy that is likely to have any effect in preventing their ravages is to lay a sheet, or any other white cloth, under the infected shrubs, which should be well shaken late at night, when the beetles are feeding; they will then fall down on the cloth and simulate death, when they should be at once killed.

Otochilus. (From *ous*, *otos*, the ear, and *cheilos*, a lip; the lip has ear-like appendages. Nat. ord., *Orchideæ*.)

Intermediate stove, epiphytal orchids. Peat fibre, charcoal, sphagnum.

- O. fra'grans*. White. June. Nepaul. 1836. Syn., *Tetrapeltis fragrans*.
 — *fu'sca*. Brownish; lip golden, rose. August. Nepaul. 1840. B. M. t. 3921.

Oto'ptera. (From *ous*, an ear, and *pteron*, a wing; referring to an ear-like process on the wing-petals. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*.) See **Vigna**.

O. Burchellii. See **Vigna Burchellii**.

Otostegia. (From *ous*, ear, and *stegos*, roof. Nat. ord., *Labiata*; Tribe, *Satureiæ*.)

Half-hardy evergreen. For culture, see CALAMINTHA.

- O. scario'sa*. ¾. Purple. August. Spain. 1752. Syn., *Calamintha fruticosa*.

Otostemma. (From *ous*, an ear, and *stemma*, a crown. Nat. ord., *Asclepiadaceæ*.) A synonym of **Hoya**.

O. lacuno'sa. A synonym of *Hoya lacunosa*.

Ottelia. (Supposed to be from *Ottel*, the native name in Malabar. Nat. ord., *Hydrocharideæ*.)

Stove or greenhouse aquatic herbs. Propagated by seeds.

- O. indica*. White. August. East Indies. 1800. Syn., *Damasonium indicum*. B. M. t. 1201.

- *ovatifolia*. Green, pale yellow. Summer. Australia. 1883. G. C. 1886, xxv. p. 753.

Otter Moth. *Hepialus Hu'muli*. Also known as the Ghost Moth, or Ghost Swift. These moths emerge from the dark-brown pupæ about the beginning of June. The males, which are about two inches across, are silvery above, fringed with brown and tawny beneath. The females are slightly larger, and yellow above with orange markings. Both after hiding amongst herbage during the day fly in the evening. Long grass, nettles, etc., should therefore be removed from the vicinity of the crops which they attack. The principal injury they occasion is to the Hops by their caterpillars, which are cream-coloured with brown heads, preying upon the roots. When their presence is suspected, the roots should be examined and the caterpillars destroyed, either by hand-picking (which can be readily done, on account of their large size—an inch and a half long) or by watering the crop with some insecticide.

Ouri'sia. (Perhaps from *ourios*, a beneficial breeze; natives of mountains. Nat. ord., *Scrophulariaceæ*.)

Hardy perennial, but best cultivated in a cold frame. For cultivation, see CHELONE.

- O. coeci'na*. Scarlet. Andes of Chili. 1862. B. M. t. 5385.

- *Pea'rcii*. Crimson, scarlet. Chili. 1863.

There are several other species, all beautiful, but we are not aware of their being in cultivation.

Ouvira'ndra. (From *ouvirandrano*, the native name, signifying water-yam, the roots being eatable. Nat. ord., *Naiadaceæ*; Tribe, *Aponogetoneæ*.) United with **Aponogeton** in the Genera **Plantarum**.

The Lattice or Lace-leaved plants are stove aquatics. Their leaves are merely a network of vascular tissue, resembling lace, or, as the specific name of one intimates, a lattice window. In Madagascar they grow on the margin of streams. In a stove aquarium, they require the water of a temperature from 70° to 75°; the soil for them to root in being sandy loam. Seeds and division of the roots.

- O. Bernieria'na*. 2. Pink. August. Madagascar. 1858.

- *fenestra'tis*. 2. White. August. Madagascar. 1855.

Ovary. That part of the flower in which the ovules, or young seeds are produced. Like the rest of the flower it

consists of one or more leaves modified for a special purpose, which in this case is that of bearing seeds. In a simple case this modified leaf, or *carpel*, is rolled over, its margins are turned in, united, and bear the *ovules*, e.g., the Pea. In *Helleborus* there are several such carpels, each distinct from the other. In the Violet these carpels are united by their in-turned margins, thus inclosing a central cavity on the wall of which are three lines of ovules; these lines representing the *placentas*, or swollen margins of two adjacent carpels. This arrangement is known as *parietal placentation*. The Lily presents a more complicated arrangement, in which the carpels unite, and then their margins grow towards the centre of the cavity thus formed, there unite and recurve to bear the ovules, thus forming three cavities, instead of one, as in the Violet. This is known as *axile placentation*. The portions of the carpellary leaves, which in the last case divided the ovary into several cells, occasionally becomes absorbed, leaving a one-celled ovary with the ovules attached to a central column, as in the Pink and other Caryophyllaceæ. This is termed *free-central placentation*. In a few cases the ovule is produced from the floral axis, instead of from the margins of the carpels. This occurs in Polygonum, where a solitary ovule is contained in an ovary formed of three united carpels as in the Violet. Other differences are produced by the calyx or perianth being united with the wall of the ovary or free from it. In the former case the ovary is said to be *inferior*, e.g., Umbelliferæ, Compositæ, Orchideæ, Irideæ, Amaryllideæ, and certain Rosaceæ (Pyrus); in the latter case it is *superior*, e.g., Violaceæ, certain Rosaceæ (Cerasus), Scrophulariaceæ and Liliaceæ.

Ovule. That structure contained in the ovary, which after fertilization develops into the seed. It is borne on a stalk (*funicle*) and surrounded (generally) by two coats, the *primine* and *secundine*, through which at one point a hole (*micropyle*) exists to facilitate the entrance of the pollen tube. The central portion is termed the *nucleus*, in which exists the *embryo sac*, containing the *embryo* (oosphere) and *endosperm*. It is by the development of this endosperm that the *albumen* of some seeds is formed, although in some plants it is formed outside the embryo sac and is then distinguished as *perisperm*; both kinds are present in the seeds of Nym-

phæa. The ovule may be straight, *orthotropous*, e.g., Polygonum, inverted with adnate funicle (*raphe*), *anatropous*, e.g., Ranunculus, or curved, *campylotropous*, e.g., Leguminosæ.

Oxalis. Wood Sorrel. (From *oxys*, acid; and the acid taste of the leaves. Nat. ord., *Geraniaceæ*; Tribe, *Oxalideæ*.)

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 fibry peat; all the bulbous kinds the least tender should be kept dry in winter, and the shrubby have the greenhouse.

HARDY ANNUALS.

- O. corniculata*. ½. Yellow. August. Britain.
Dillenit. 2. Copper. America. 1798.
 — *florida*. 2. Yellow. America. 1798.
lævigata. ½. Purple. June. 1813.
microphylla. ½. Pale red. N. S. Wales.
sensitivava. ½. Yellow. July. China. 1844.
 Stove. B. R. 1845, t. 68. A synonym of *Biophytum sensitivum*.

HARDY HERBACEOUS.

- O. Lycnii*. 1. Yellow. August. N. Amer. 1816.
stricta. 1½. July. N. Amer. 1658.

HARDY BULBS.

- O. alba*. ¾. White. May. America. 1836.
 Swt. Fl. Gard. ser. 2, t. 398.
americana. ½. White. April. N. Amer.
elegans. ½. Purple. July. Peru. B. M. t. 4490.
enneaphylla. ½. White, or pale rose. June. Fugia. 1876. Ic. Pl. t. 494.
violacea. ½. Violet. May. N. Amer. 1772. B. M. t. 2215.

GREENHOUSE HERBACEOUS.

- O. arenaria*. ½. Purple. Chili. 1875.
articulata. ½. Mauve-pink. South Brazil. 1870. B. M. t. 6748.
catharinensis. White. Santa Catharina. 1837.
Cumini ngui. ½. Golden. September. Chili. 1831. B. R. t. 1545.
discolor. Violet, crimson. July. Mexico. 1844.
floribunda. 1½. Red. July. S. Amer. 1827. B. R. t. 1123.
lasiandra. 1½. Pink. May. Mexico. 1840. B. M. t. 3996.
Martiana. Yellow. July. Brazil. 1829. Stove. B. C. t. 1523.
na'tans. ½. White. October. 1795. Aquatic.
Nee's glabrata. White. Mexico. 1872.
Ortigiesii. 1. Yellow. Andes, Peru. 1875.
Otto'nis. Yellow. May. Chili. 1840.
palustris. Lilac. May. Brazil. 1823. Stove.
perennans. 2. Yellow. July. N. S. Wales.
repens. 1. Yellow. May. 1793.
rosea. ½. Rose. March. Chili. 1826. B. M. t. 2145 and 2830.
rubro-cincta. 1. Yellow. September. Guatemala. 1841. B. R. 1842, t. 64.
Simsii. ½. Crimson. April. Chili. 1822.
tuberosa. 5. Bolivia. 1853.
ur'bica. White. August. Brazil. 1823.
valdiviensis. ½. Yellow. Chili. 1862.

GREENHOUSE BULBS.

- O. ambigua*. ½. White. October. 1790.
arcuata. ½. Violet. September. 1795.
asin'na. ½. Yellow. November. 1792.
bidala. ¾. Violet. September. 1791.
bifurca. 1. Pink. B. C. t. 1056.

O. bine'rvio. White. 1890.
 — *bipuncta'ta*. $\frac{1}{2}$. Lilac. May. Brazil. 1825. B. M. 2781.
 — *Bo'wiei*. $\frac{1}{2}$. Crimson. October. 1823. B. C. t. 1782.
 — *brasili'e'nsis*. $\frac{1}{2}$. Rose. October. Brazil. 1829. B. C. t. 1962.
 — *Burma'nm.* $\frac{1}{2}$. Purple. June. 1820.
 — *can'e'scens*. 1. Purple. March. 1821.
 — *capri'na*. $\frac{1}{2}$. Flesh. August. 1857. B. M. t. 237.
 — *carno'sa*. $\frac{1}{2}$. Yellow. October. Chili. 1826. B. C. t. 1647.
 — *ce'rnua*. $\frac{1}{2}$. Yellow. March. 1757. B. C. t. 1154.
 — — *fo're-ple'no*. Double-flowered. 1873.
 — *clia'ris*. $\frac{1}{2}$. Purple. October. 1793.
 — *Commerco'nis*. $\frac{1}{2}$. Yellow. October. Brazil.
 — *compre'ssa*. $\frac{1}{2}$. Yellow. December. 1794.
 — *conv'e'aula*. $\frac{1}{2}$. Pink. June. 1789.
 — *crena'ta*. $\frac{3}{4}$. Yellow. September. Lima. 1829. Swt. Fl. Gard. ser. 2, t. 125.
 — *cri'spa*. $\frac{1}{2}$. White. October. 1793.
 — *cruenta'ta*. $\frac{1}{2}$. Purple. October. 1826.
 — *cunea'ta*. $\frac{1}{2}$. Yellow, white. July. 1822.
 — *cuneifo'lia*. $\frac{1}{2}$. White. April. 1793.
 — *cu'prea*. $\frac{1}{2}$. Copper. May. 1822. B. C. t. 824.
 — *Darwallia'na*. $\frac{1}{2}$. Pale crimson. July.
 — *denta'ta*. $\frac{1}{2}$. Flesh. October. 1793.
 — *De'ppei*. $\frac{1}{2}$. Red. March. Mexico. 1827. B. C. t. 1500.
 — *di'sticha*. $\frac{1}{2}$. Pale yellow. May. 1818.
 — *dive'rgens*. $\frac{1}{2}$. White. July. Mexico. 1829.
 — *elonga'ta*. $\frac{1}{2}$. White. June. 1791.
 — — *amo'e'na*. $\frac{1}{2}$. Copper. September. 1810.
 — *faba'lo'bia*. $\frac{1}{2}$. Red. October. 1794.
 — *fo'liac.* $\frac{1}{2}$. Yellow. September. 1825.
 — *ferrugina'ta*. 4. Yellow. June. 1820. Jacq. Schoenb. t. 274.
 — *filicu'lis*. $\frac{1}{2}$. Violet. September. 1815. Jacq. Schoenb. t. 205.
 — *filifo'lia*. $\frac{1}{2}$. Pink. June. 1822. Jacq. Schoenb. t. 273.
 — *flabellifo'lia*. $\frac{1}{2}$. Yellow, red. August. 1789.
 — *fla'ccida*. $\frac{1}{2}$. White, red. September. 1812.
 — *fla'va*. $\frac{1}{2}$. Yellow. March. 1775. B. R. t. 117.
 — — *fo're-ple'no*. $\frac{1}{2}$. Yellow. March.
 — *fu'gida*. $\frac{1}{2}$. Crimson. October. 1820. B. R. t. 1073.
 — *furca'ta*. $\frac{3}{4}$. Red. September. 1823.
 — *fusca'ta*. $\frac{1}{2}$. Yellow. May. 1795.
 — *genicula'ta*. $\frac{1}{2}$. Yellow. October. Kn. and West. t. 21.
 — *glabra*. $\frac{3}{4}$. Purple. May. 1795.
 — *glandulo'sa*. $\frac{1}{2}$. White. October. 1822.
 — *hi'rtia*. $\frac{3}{4}$. Lilac. October. 1787. B. C. t. 213.
 — *hirta*. $\frac{1}{2}$. Red. March. 1823.
 — *imbrica'ta*. $\frac{1}{2}$. Rose-pink; double. Port Elizabeth. G. C. 1887. ii. p. 681, fig. 129.
 — *incarna'ta*. $\frac{1}{2}$. Flesh. May. 1789.
 — *laburnifo'lia*. $\frac{1}{2}$. Yellow. September. 1793.
 — *lana'ta*. $\frac{1}{2}$. White. October. 1791.
 — *lanco'so'lia*. $\frac{1}{2}$. Yellow. October. 1795.
 — *lasiope'tala*. $\frac{1}{2}$. Pink. July. Buenos Ayres. 1841. B. M. t. 3932.
 — *laterifo'ra*. $\frac{1}{2}$. Purple. March. 1824. Jacq. Schoenb. t. 204.
 — *la'cula*. $\frac{1}{2}$. White. November. 1820.
 — *le'pida*. $\frac{1}{2}$. White. May. 1823.
 — *lepori'na*. $\frac{1}{2}$. White. October. 1795.
 — *linea'ris*. $\frac{1}{2}$. Violet. October. 1795.
 — *li'vida*. $\frac{1}{2}$. Flesh. October. 1793.
 — *loba'ta*. $\frac{1}{2}$. Yellow. October. 1823. B. M. t. 2386.
 — *lupinifo'lia*. $\frac{1}{2}$. Yellow. September. 1791.
 — *lute'ola*. $\frac{1}{2}$. Yellow. May. 1823.
 — *macrophy'lia*. $\frac{1}{2}$. Yellow. June. 1820.
 — *macro'stylis*. $\frac{1}{2}$. Purple. October. 1793.
 — *marginata*. $\frac{1}{2}$. White. November. 1812.

O. mauritia'na. $\frac{1}{2}$. Pale rose. September. Isle of France. 1810. B. C. t. 1780.
 — *minia'ta*. $\frac{1}{2}$. Vermilion. May. 1819.
 — *monophy'lia*. $\frac{1}{2}$. Yellow. October. 1774.
 — *multifo'ra*. $\frac{3}{4}$. Lilac. February. 1789. Jacq. Ic. t. 472.
 — *obtu'sa*. $\frac{1}{2}$. White. September. 1812.
 — *papikona'cea*. $\frac{1}{2}$. Variegated. Brazil. 1819. B. C. t. 1551.
 — *pectina'ta*. $\frac{1}{2}$. Yellow. October. 1790.
 — *pentaphy'lia*. $\frac{1}{2}$. Pink. June. 1800. B. M. t. 1549.
 — *Pio'tta*. $\frac{1}{2}$. Orange. June. 1816. B. R. t. 1817.
 — *polyphy'lia*. $\frac{1}{2}$. Pale purple. May. 1791. Jacq. Ic. t. 473.
 — *pulche'ra*. $\frac{1}{2}$. White. October. 1795.
 — *puncta'ta*. $\frac{1}{2}$. Purple. May.
 — *purpura'ta*. $\frac{1}{2}$. Pale purple. October. 1822. Jacq. Schoenb. t. 356.
 — *purpu'rea*. $\frac{1}{2}$. Purple. October. 1812.
 — *reclina'ta*. $\frac{1}{2}$. Pink. October. 1795.
 — *rept'd'ria*. $\frac{1}{2}$. Flesh. November. 1795.
 — *rigi'dula*. $\frac{1}{2}$. White. September. 1822.
 — *rosa'cea*. $\frac{1}{2}$. Pink. October. 1793. B. M. t. 1698.
 — *rostra'ta*. $\frac{1}{2}$. Purple, violet. October. 1795.
 — *rube'lia*. $\frac{1}{2}$. Pink. October. 1791. B. M. t. 1031.
 — *ru'bro-fla'va*. $\frac{1}{2}$. Red, yellow. June. 1823.
 — *sangui'nea*. $\frac{1}{2}$. Yellow. November. 1795.
 — *secu'nda*. $\frac{1}{2}$. Lilac. October. 1790.
 — *seri'cea*. $\frac{1}{2}$. Yellow. May. 1794.
 — *specio'sa*. $\frac{1}{2}$. Purple. October. 1690.
 — *strumu'sa*. $\frac{1}{2}$. White. December. 1821.
 — *sulphu'rea*. $\frac{1}{2}$. Paleyellow. October. 1795.
 — *sybe'stris*. White. February.
 — *tene'lia*. $\frac{1}{2}$. Lilac. May. 1793. B. C. t. 1096.
 — *te'nera*. $\frac{1}{2}$. Yellow. May. Brazil. 1826. B. R. t. 1046.
 — *tenuifo'lia*. $\frac{1}{2}$. White, red. October. 1790. B. C. t. 712.
 — *tetraphy'lia*. $\frac{1}{2}$. Purple. June. Mexico. 1823. B. C. t. 790.
 — *tortuo'sa*. $\frac{1}{2}$. Yellow. June. Chili. 1826. B. R. t. 1249.
 — *tri'color*. $\frac{3}{4}$. White, red. November. 1794.
 — *tubiflo'ra*. 1. Pink. November. 1790.
 — *undula'ta*. $\frac{1}{2}$. Lilac. October. 1795.
 — *varia'bilis*. $\frac{1}{2}$. White, red. November. 1795. B. M. t. 1683.
 — — *grandiflo'ra*. $\frac{1}{2}$. White. November. 1790.
 — — *Si'msi*. $\frac{1}{2}$. White. November. 1790.
 — *vend'sa*. $\frac{1}{2}$. Violet, yellow. October. 1823.
 — *versi'color*. $\frac{1}{2}$. Crimson. February. 1774. B. M. t. 155.
 — *virgi'nea*. White. October. Jacq. Schoenb. iii. t. 275.

GREENHOUSE AND STOVE EVERGREENS.

O. Barreli'e'ri. $\frac{1}{2}$. Pale red. September. Caracas. 1824. Stove. B. M. t. 3748.
 — *chine'nsis*. $\frac{1}{2}$. Yellow. August. China.
 — *fruticos'a*. 1. Yellow. December. Rio Janeiro. 1817. Stove. B. R. 1841, t. 41.
 — *Plumie'ri*. 2. Yellow. S. Amer. 1823. Stove. B. R. t. 810.

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 twelve 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 *Oxalis Jacquiniana*; 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-eye. *Buphtha'lmum.*

Oxe-eye Daisy. *Chryso'nthemum leuca'nthemum.*

Ox-lip. *Pr'imula elat'ior.*

Oxe'ra. (From *oxeros*, sour; referring to the taste. Nat. ord., *Verbenaceæ.*)

A handsome stove climber, with large showy flowers, abundantly produced.

O. pulche'lla. Greenish-white. New Caledonia. 1886. B. M. t. 6938.

Oxya'nthus. (From *oxys*, sharp, and *anthos*, a flower; referring to the sharp-toothed calyx and corolla. Nat. ord., *Rubiaceæ*; Tribe, *Gardenieæ*. 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, fibry peat, and a little dried cow-dung. Winter temp., 45° to 55°; summer, 60° to 85°.

O. hirsu'tus. 2. July. 1812.
— *specio'sus.* B. M. 1992. A synonym of *O. tubiflorus*.

— *tubifo'rus.* 3. July. 1789. Syns., *O. speciosus* and *Gardenia tubiflora*, Andr. Rep. t. 183.

— *versicolor.* July. Cuba, or Tropical Africa? 1839. Fl. Ser. t. 148.

Oxy'baphus. Umbrellawort. (From *oxys*, acid, and *baphe*, dyer's colour; referring to the coloured juice of the roots. Nat. ord., *Nyctaginaceæ*; Tribe, *Mirabilieæ*. 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. 1. Pink. New Spain. 1811.

— *angustifo'lius.* 1. August. Louisiana. 1812.

— *califo'rmicus.* 1-2. California. 1888. Gf. t. 1266, fig. 2.

— *Cervante'sii.* 2. June. Mexico. 1823. Swt. Fl. Gard. t. 84.

— *chile'nsis.* 1. Lilac. September. Chili. 1832.

— *decu'mbens.* 2. August. Missonri. 1818.

— *expa'nsum.* 2. July. Peru. 1819.

— *floribu'ndus.* 1. Purple. July. N. America. Syn., *Allionia ovata*.

— *glabrifo'lius.* 3. July. New Spain. 1811.

— *hirsu'tus.* 1. August. Louisiana. 1812.

— *nyctagi'neus.* 1. August. Missonri. 1823.

— *viola'ceus.* 1. Violet. July. Cumaná. 1820. Syn., *Allionia violacea*.

Oxycco'cus. Cranberry. From *oxys*, acid, and *kokkos*, a berry. Nat. ord., *Vacciniaceæ*; Tribe, *Euvaccinieæ.*)

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. *Macrocar'pus* produces the largest fruit. See AMERICAN CRANBERRY.

O. cre'tus. May. N. Amer. 1806. Wats. Dendr. t. 31.

— *erythroca'rpus.* See *Vaccinium*.

— *macroca'rpus.* †. May. N. Amer. 1760. Wats. Dendr. t. 122.

— — *variega'tus.* †. May.

— *patu'stris.* †. May. Britain.

Oxyde'ndron. (From *oxys*, acid, and *dendron*, a tree; the leaves have an acid taste. Nat. ord., *Ericaceæ.*)

Hardy tree. Soil moist and peaty. Imported seeds.

O. arbo'reum. 15-40. White. Summer. Eastern United States. 1762. Syn., *Andromeda arborea*, B. M. t. 905.

Oxygo'nium. (From *oxys*, sharp, and *gonu*, an angle; referring to the divisions of the leaf, or frond. Nat. ord., *Filices*.) Now united to *Asplenium*.

Stove, brown-spored ferns, from the East Indies. See FERNS.

O. alismaefo'lium. April.

— *e'legans.* June. 1842.

— *ova'tum.* May. 1842.

— *vittaefo'rme.* June. 1840.

Oxylo'bium. (From *oxys*, sharp, and *lobos*, a pod; the seed-pods ending in a sharp point. Nat. ord., *Leguminosæ*; Tribe, *Podalyrieæ*. Syns., *Callistachys* and *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 fibry loam, a greater quantity of charcoal, broken crocks, etc., and abundant drainage. Winter temp., 40° to 48°.

- O. acutum*. 1½. Yellow, red. March. 1842. Syn., *Gastrolobium acutum*, B. M. t. 4040.
 — *arborescens*. 6. May. 1806. B. M. t. 2442. A variety of *O. ellipticum*.
 — *berberifolium*. April. 1836. Syn., *Podolobium berberifolium*.
 — *Callista'chys*. 4. Yellow. June. Australia. 1815. Syn., *Callistachys lanceolata*, B. R. t. 216, *C. longifolia*, Paxt. Mag. viii. p. 31, *C. ovata*, B. M. t. 1925, and *C. retusa*, B. C. t. 1983.
 — *capitatum*. 2. Yellow. June. 1837. B. R. 1843, t. 16.
 — *cordifolium*. 3. June. 1807. Andr. Rep. t. 492.
 — *cuneatum obovatum*. 2. Yellow. March. 1810. Syn., *O. obovatum*, B. R. 1843, t. 36.
 — *dilatatum*. 1840.
 — *ellipticum*. 3. July. 1805. B. M. t. 3249.
 — *ferrugineum*. 2. May. 1820.
 — *heterophyllum*. 3. June. 1824. Syn., *Podolobium heterophyllum*.
 — *Huge'ii*. 1845.
 — *lineare*. 2. Yellow, or red. October. Australia. 1838.
 — *obovatum*. See *O. cuneatum*, var. *obovatum*.
 — *obtusifolium*. 2. Scarlet. May. 1824.
 — *ovalifolium*. See *O. retusum*. *O. ovalifolium* of Paxt. Fl. Gard. ii. t. 85 is *Gastrolobium pyramidale*.
 — *parviflorum*. 1840.
 — *Pultenæ*. 2. Dark orange. March. 1824.
 — *retusum*. 2. Orange. May. 1823. Syn., *O. ovalifolium*, B. R. t. 913.
 — *sca'ndens*. 2. Yellow. April. 1825. Syn., *Mirbetia Baxteri*, B. R. t. 1434, and *Podolobium scandens*.
 — *spectabile*. May. 1847. Syn., *Gastrolobium cordatum*.
 — *spinosum*. 2. May. 1825.
 — *staurophyllum*. 2. Yellow. April. 1822. Syn., *Podolobium staurophyllum*, B. R. t. 959.
 — *trilobatum*. 2. Yellow. April. 1791. Syn., *Podolobium trilobatum*, B. M. t. 1477, and *Pultenæ ilicifolia*, Andr. Rep. t. 320.
 — *virgatum*. Orange, scarlet. May. 1830. Syn., *Gastrolobium retusum*, B. R. t. 1047.

Oxypetalum. (From *oxys*, sharp, and *petalon*, a petal; petals sharp-pointed. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynanchææ*. Allied to *Asclepias*.)

Stove evergreen climbers, from Brazil. Cuttings in sand, under a bell-glass, in bottom-heat; sandy loam and fibry peat. Winter temp., 50° to 60°; summer, 60° to 85°.

- O. appendiculatum*. 6. Yellow. 1823.
 — *Banksii*. Cream. June. 1826.
 — *cæruleum*. 3. Blue. Buenos Ayres. 1836. Syn., *Tweedia cærulea*, Swt. Fl. Gard. ser. 2. t. 407, and *T. versicolor*, B. M. t. 3630.
 — *solano'ides*. 3. Purplish-scarlet. 1847. B. M. t. 4367.

Oxyramphus. (From *oxys*, sharp, and *rhamphos*, a beak; shape of the seed-pod. Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*. Allied to *Desmodium*.) A synonym of *Lespedeza*.

Greenhouse evergreen shrub. Cuttings of young shoots in sand, under a bell-glass and seeds sown in spring; sandy, fibry loam, and a

little peat and leaf-mould. Winter temp., 40° to 50°.

- O. macrostyla*. 4. Purple, crimson. October. Saharanpoor. 1837. B. R. 1846, t. 28.

Oxyspora. (From *oxys*, sharp, and *spora*, a seed, which is here awned at both ends. Nat. ord., *Melastomaceæ*; Tribe, *Oxysporeæ*. Allied to *Rhexia*.)

Stove evergreen shrub. Cuttings of young shoots in sandy soil, under a glass, in bottom-heat, in April; sandy peat, fibry loam, and nodules of charcoal. Winter temp., 50° to 60°; summer, 60° to 85°.

- O. paniculata*. 3. Red. June. Nepaul. 1826. B. M. t. 4553.
 — *va'gans*. A synonym of *O. paniculata*.

Oxystelma. (From *oxys*, sharp, and *stelma*, a crown; referring to the acute little leaves accompanying the flower-head, or crown. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynanchææ*. Allied to *Philibertia*.)

Stove evergreen climber. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat, in May; sandy peat and fibry loam. Winter temp., 50° to 60°; summer, 60° to 85°.

- O. esculentum*. 4. Yellow. E. Ind. 1816.

Oxytropis. (From *oxys*, sharp, and *tropis*, a keel; the keel-petal ends in a sharp point. Nat. ord., *Leguminosæ*; Tribe, *Galegeææ*. 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. ambigua*. ½. Purple. June. 1817.
 — *argentea*. Pale. June. 1827.
 — *argyrophylla*. Purple. 1831.
 — *breviflora*. ½. Blue. August. 1802.
 — *cærulea*. Blue. June. 1827.
 — *campestris*. ½. Pale yellow. June. Scotland. B. C. t. 1287.
 — *ca'ndicans*. Pale. June. 1827.
 — *cyanæa*. ½. Blue. July. Caucasus. 1818.
 — *dealbata*. ½. Purple. July. Caucasus, 1803.
 — *deflexa*. ½. Purple. June. 1800.
 — *dichoptera*. ½. Blue. June. 1815.
 — *Fische'ri*. ½. Blue. July. Altai. 1817.
 — *floribunda*. Purple. May. 1827.
 — *foetida*. ½. Pale yellow. July. Switzerland. 1819.
 — *glabra*. ½. Purple. July. Dahuria. 1823.
 — *grandiflora*. ½. Red. June. 1820.
 — *leptoptera*. ½. Blue. June. 1818.
 — *Lamberti*. 1. Purple. August. Missouri. 1811. B. M. t. 2147.
 — *leptophylla*. ½. Red. July. 1818.
 — *longicuspis*. Purple. June. 1827.
 — *longiflora*. ½. Purple. 1820.
 — *microphylla*. ½. Pale yellow. July. 1819.
 — *montana*. ½. Purple, yellow. Austria. 1811.
 — *myriophylla*. ½. Purple, white. July. 1818.
 — *ochroleuca*. Yellow. Turkestan. Gf. t. 1154, fig. 1.
 — *oxyphylla*. ½. Purple. July. 1816.
 — *Palla'ii*. ½. Pale yellow. July. 1818.
 — *pilosella*. ½. Pale yellow. July. 1732. B. C. t. 544.
 — *prostrata*. ½. Blue, white. July. 1820.

- O. setosa*. Purple. June. 1828.
songarica. †. Violet. June. Altai. 1824.
sulphurea. †. Cream. July. 1820.
syriaca. Purple. May. 1820.
tenella. Blue. June. 1828.
uncaia. †. White. July. Aleppo. 1768.
uralensis. †. Purple. July. 1800.
verticillaris. †. Blue, white. July. 1819.
viscosa. White. July. Switzerland. 1817.

Oxyura chrysanthemoides. A synonym of a low, yellow-flowering, composite, hardy annual, from California, first named by Endlicher *Tolla'tia*, and now known as *Layia Calliglossa*. Sow in April in common soil.

Oye'dæa. (From the Peruvian name. Nat. ord., *Compositæ*.)

Greenhouse evergreen shrub; same culture as for *BUPHTHALMIUM*.

O. buphtalmoides. Yellow. September. Peru. 1848.

Oyster-Plant. *Mertensia maritima*.

Ozothamnus. (From *ozos*, a branch, and *thamnus*, a shrub. Nat. ord., *Compositæ*; Tribe, *Inuloidæ*.) Now united to **Helichrysum**.

Greenhouse, yellow-flowered evergreens, from Van Diemen's Land. 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. cinereus*. 1. July. 1820.
ferrugineus. 1. July. 1822.
rosmarinifolius. 1. July. 1822.
thyrsoides. 6. July.

P.

Pachira. (From the native name in Guiana. Nat. ord., *Malvaceæ*. Syn., *Carolineæ*.)

Stove trees. Cuttings of ripened wood in sand, under a bell-glass, in heat; rich loamy soil. Summer temp., 60° to 85°; winter, 50° to 55°.

- P. alba*. 20. July. Brazil. 1817. B. M. t. 4508. Syn., *Carolineæ alba*, B. C. t. 752.
aquatia. 30. Red, yellow, green. West Indies. 1787. Syn., *Carolineæ princeps*.
insignis. 20. Red. West Indies. 1796. Syn., *Carolineæ insignis*, B. C. t. 1004.
macrocarpa. 30. Red, yellow, green. Mexico. B. M. t. 4549. Syn., *Carolineæ macrocarpa*.
minor. 20. Red, yellow, green. July. Guiana. 1798. Syn., *Carolineæ minor*, B. M. t. 1412.

Pachyphilus. (From *pachys*, thick, and *cheilos*, a lip. Nat. ord., *Orchideæ*; Tribe, *Epidendræ-Eriæ*.) A synonym of **Pachystoma**.

Pachylophus. (From *pachys*, thick, and *lophos*, a crest. Nat. ord., *Onagrariæ*.) A synonym of **Cenothera**.

Pachyne'ma. (From *pachys*, thick, and *nema*, a filament. Nat. ord., *Dille-niaceæ*.)

Glabrous, half-hardy herb, with the leaves reduced to scales.

P. complanatum. Yellow. Australia.

Pachyphyllum. (From *pachys*, thick, and *phyllon*, a leaf. Nat. ord., *Orchideæ*; Tribe, *Vandææ-Sarcantheæ*. Allied to *Luisia*.)

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. procumbens. Green, blue. May. Andes of S. America. 1836.

Pachypodium. (From *pachys*, thick, and *podion*, a foot; referring to the stalks of the flowers. Nat. ord., *Apocynaceæ*. Allied to *Nerium*.)

Greenhouse evergreens, from the Cape of Good Hope, 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. succulentum*. 1. May. 1823.
tuberosum. 1. August. 1813. B. C. t. 1676.

Pachyphytum. See **Cotyledon**.

Pachyrhizus. (From *pachys*, thick, and *rhiza*, a root. Nat. ord., *Leguminosæ*.)

Stove, twining herbs. Cuttings in sand under a bell-glass; tubers; seeds.

P. angulatus. Violet-purple. July. Tropics. 1781.

— *Thunbergiana*. See *Pueraria Thunbergiana*.

Pachysandra. (From *pachys*, thick, and *aner*, a stamen. Nat. ord., *Euphorbiaceæ*. 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. coriacea*. See *Sarcococca prunifolia*.
procumbens. †. White. April. N. Amer. 1800. Hardy herbaceous. B. M. t. 1964.
terminalis. Leaves with whitish variegated margins. Japan. 1882.

Pachystigma pteleoides, Ic. Pl. t. 698. See **Peltostigma pteleoides**.

Pachystima. (From *pachys*, thick, and *stigma*; alluding to the thick stigma. Nat. ord., *Celastrinæ*.)

Hardy, evergreen, shrubs. For culture, see *MYGINDA*.

- P. Canbyi*. Greenish. California. 1889.
myrsinites. †. White. June. N. Amer. 1818. Syn., *Myginda myrsifolia*.

Pachystoma. (From *pachys*, thick, and *stoma*, a mouth; referring to the thick lip. Nat. ord., *Orchideæ*; Tribe, *Epidendræ-Eriæ*. Allied to *Eria*.)

P. speciosum given below is a doubtful member of this genus; it appears to be a stove epiphyte, and probably requires the same treatment as *ERIA*. But those which are genuine members of the genus, none of which appear to be in cultivation, are stove terrestrial Orchids, growing naturally in grassy places; so that should they be introduced they will require to be grown in turfy loam.

P. speciosum. Yellow. January. Ceylon. 1866.

Syn., *Ipeea speciosa*. B. M. t. 5701.

— *Thomsonia num.* †. White, red-purple. W. Tropical Africa. Autumn. 1879. B.M. t. 6471.

Pa'dus. See Prunus.

Pæderia. (From *pæderos*, opal; referring to its transparent berries. Nat. ord., *Rubiaceæ*; Tribe, *Pæderiaceæ*.)

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. fœtida. 6. Purple. Tropical Asia. 1806.

Pæderota. (From *Paideros*, an ancient name for a species of *Acanthus*. Nat. ord., *Scrophulariaceæ*.)

Hardy, perennial, dwarf herbs. Light sandy soil. Seeds.

P. Ageria. †. Yellow. May. Mountains of Central Europe. 1824.

— *bonarota*. †. Blue. May. Mountains of Central Europe. 1818.

Pæonia. Pæony. (Named after *Pæon*, a physician, who first used it medicinally. Nat. ord., *Ranunculaceæ*; Tribe, *Pæoniaceæ*.)

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. Moutan. 3. Purple. May. China. 1789.

B. M. t. 1154.

— *albida-plena*. 2. White. May. China.

— *Anneslei*. 3. Pink. May. China.

— *atro-purpurea*. 4. Purple. April. China. 1846.

— *Ba'nskii*. 3. Purple. May. China. 1794. Andr. Rep. t. 448.

— *carnea-plena*. 2. Flesh. May. China.

— *globosa*. 3. White, purple. April. Shanghai. 1845.

— *lilacina*. 3. Lilac. April. China. 1845.

— *Hu'mei*. 2. Purple. May. China. 1817.

— *papavera'cea*. 3. White. May. China. 1789. Andr. Rep. t. 463.

— *parviflora*. 3. Pale rose. April. Shanghai. 1845.

— *picta*. 3. Pale and deep-rose-striped. April. Canton. 1845.

— *Rave'sii*. 2. Pale pink. May. China. 1820.

P. ro'sea. 3. Pink. May. China. Andr. Rep. t. 373.

— *ro'sea-plena*. 2. Red. May. China. 1804.

— *ro'sea-se'mi-plena*. 2. Red. May. China. 1794.

— *salmo'nea*. 3. Pale salmon. April. China. 1846.

— *speciosa*. 2. Pink. May. China. 1825.

HARDY HERBACEOUS.

P. albiflora. 2. White. May. Siberia. 1548.

Syn., *P. edulis*.

— *ca'ndida*. 2. Flesh. May. Siberia.

— *fœsta*. 2. White, pink. June.

— *fragrans*. 2. Red. May. China. 1805.

— *Hu'mei*. 2. Red. May. China. 1808.

— *Pott'sii*. 3. Crimson. June. China. 1822.

— *Reeve'sii*. 2. Pink. June. China. 1822.

— *rubescens*. 2. Pink. May. Siberia.

— *sibi'rica*. 2. White. May. Siberia.

— *tata'rica*. 2. Flesh. May. Siberia.

— *uniflora*. 2. Pink. May. Siberia. B. R. t. 42.

— *vestalis*. 2. White. May. Siberia. Andr. Rep. t. 64.

— *White'ji*. 2. Blush. May. China. 1808. Andr. Rep. t. 612.

— *anemoniflora*. Garden variety. 1887.

— *anomala*. 1½. Crimson. May. Siberia. 1788. Syn., *P. Fischeri*.

— *arietina*. 2. Purple. Levant. Syn., *P. cretica*. B. R. t. 819.

— *Andersoni*. Rose. June.

— *aronensis*. 2. Pale bluish. June.

— *Bakeri*. 2. Deep rose. Journ. Hort. Soc. xii. p. 441, fig. 32. Syn., *P. peregrina*, var. *byzantina*.

— *Brotieri*. 2. Crimson. Spain and Portugal. 1884. G. C. 1886, xxvi. p. 49, fig. 11.

— *Brovmii*. Red. May. N. Amer. 1836. B. R. 1839, t. 30. Syn. *P. californica*.

— *corallina*. 3. Crimson. May. England.

— *corsica*. Purple. June. Corsica.

— *cretica*. See *P. arietina*.

— *de'cora*. 2. Purple. May. Turkey.

— *elatior*. 2. Purple. May. Crimea.

— *Palla'sii*. 2. Purple. May. Crimea.

— *edulis*. A synonym of *P. albiflora*.

— *emo'di*. 2-3. White. March. Himalayas. 1868. B. M. t. 5719.

— *Fischeri*. See *P. anomala*.

— *humilis*. 2. Purple. May. Spain. 1633. B. M. t. 1422.

— *hybrida*. See *P. tenuifolia*.

— *lobata*. See *P. officinalis*.

— *molliis*. 1½. Purple. May. Siberia. B. R. t. 474.

— *officinalis*. 3. Red. May. Europe. 1548.

— *ibicans*. 3. White. May. B. M. t. 1784.

— *anemoniflora*. 3. Pink. May. 1830.

— *Baxteri*. 3. Crimson.

— *blanda*. 3. White. May.

— *canescens*. 3. White. May.

— *lobata*. 2. Purple. May. Spain. 1821.

Syn., *P. lobata*.

— *multipe'ala*. 3. Crimson. May.

— *ro'sea*. 3. Red. May.

— *rubra*. 3. Red. May.

— *variegata*. 3. Crimson. June.

— *paradoxa*. 2. Purple. May. Levant.

— *compacta*. 2. Purple. May.

— *fimbriata*. 2. Purple. May.

— *Grevi'lii*. 2. Purple. May.

— *peregrina*. 2. Dark purple. May. B. M. t. 1050.

— *byzanti'na*. See *P. Bakeri*.

— *pu'bena*. B. M. t. 2264. A synonym of *P. peregrina*.

- P. Reevesia'na*. 3. Crimson. May. China.
 — *Ru'ssi*. 2. Crimson. May. Sicily.
 — *simpliciflora*. Red. May. Levant.
 — *tenuifolia*. 1½. Red. May. Siberia. 1765.
 B. M. t. 226. *P. hybrida* and *P. laciniata*
 are varieties of this.
 — *flöre-ple'no*. 1½. Red. May. Russia.
 1831.
 — *latifolia*. 2. Crimson. June.
 — *triterm'ata*. 3. Purple. May. Siberia. 1790.
 B. M. t. 1441. Syn., *P. daurica*.
 — *villo'sa*. 2. Red. May. South Europe. 1816.
 — *Witmannia'na*. 2. Greenish-yellow. May.
 Abcharia. 1842. B. M. t. 6645.

Pagle. The Cowslip. *Pri'mula*
ve'ris.

Pagoda Tree. *Ficus india*, *Plu-*
meria a'ba, and *So'phora japo'nica*.

Painted Cup. *Castille'ja*.

Painted Grass. *Aru'ndo*.

Palafox'ia. (Named after *Palafox*,
 a Spanish general. Nat. ord., *Com-*
positæ; Tribe, *Helenioideæ*. Allied to
Stevia.)

Herbaceous perennials, with white flowers.
 Seeds, divisions, and cuttings of the youngshoots
 in spring; sandy loam. A cool greenhouse or
 cold pit in winter for *linea'ris*.

- P. fastigia'ta*. August. N. Amer. 1823. Hardy.
Hookeria'na. Pink. Rocky Mountains. 1865.
 B. M. t. 5849.
 — *linea'ris*. 2. June. Mexico. 1821. Green-
 house. B. M. t. 2132. Perennial.

Pala'va. (After *A. Palau y Verdera*,
 once a professor of botany at Madrid.
 Nat. ord., *Malvaceæ*.)

Hardy, or half-hardy annuals. Common gar-
 den-soil. Seeds in a hotbed in spring; the seed-
 lings planted out in May.

- P. flexu'sa*. ¾. Mauve. June. Peru. 1866.
 B. M. t. 5768.
 — *malvaefolia*. Pink. South America.
 — *rhombifolia*. Prostrate. Rose. Summer.
 Peru. 1830. B. M. t. 3100.

Pale-brindled Beauty Moth.
Geome'tra.

Palicou'rea. (Named after *Le Pali-*
cour, of Guiana. Nat. ord., *Rubiaceæ*;
 Tribe, *Psychotriæ*. 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*. 4. Yellow. July. Caraccas. 1824.
 — *cro'cea*. 4. Orange. July. W. Ind. 1823.
 — *discolor*. See *P. nicotianaefolia*.
 — *gardenioi'des*. 2. White. Winter and sum-
 mer. S. America. Syn., *Rhodostoma*
gardenioides.
 — *juga'sa*. Leaves satiny green above, purple
 beneath. Brazil.
 — *lutea*. 1. Yellow. June. Guiana. 1823.
 Syn., *Nonatelia lutea*.
 — *nicotianaefolia*. Pale yellow. September.
 Brazil. Syn., *P. discolor*.
 — *orna'ta*. Leaves olive-green with crimson
 veins. South America. 1875.
 — *pave'tta*. 2. White. August. W. Ind. 1823.
 — *racemo'sa*. 3. White. June. Guiana. 1818.
 Syn., *Nonatelia racemosa*.

- P. ri'gida*. 3. Yellow. August. Caraccas. 1820.
 — *viola'cea*. 4. White. June. Guiana. 1824.
 Syn., *Nonatelia violacca*.

Paliso'ta. (Dedicated to *Palisot de*
Beauvois, a botanist and traveller. Nat.
 ord., *Commelinaceæ*; Tribe, *Polliceæ*.)

Stove evergreen perennial herbs. For culti-
 vation, see *COMMELINA*.

- P. Barte'ri*. Purple. Fernando Po. 1862. B.
 M. t. 5318.
 — *bi'color*. Leaves green with paler disc, brown-
 woolly beneath. Fernando Po. 1878.
 — *bracteo'sa*. Whitish. W. Tropical Africa.
 1879.

Paliu'rus. Christ's Thorn. (Name
 of a plant used by *Dioscorides*. Nat.
 ord., *Rhamnaceæ*; Tribe, *Zizyphææ*.
 Allied to *Zizyphus*.)

Hardy deciduous shrubs, with greenish-yellow
 flowers. Suckers, which come freely; layers,
 cuttings, and seeds. *P. Auble'tia* is an elegant
 shrub. The other, from its abundance in
 Judea, is supposed to be the plant from which
 our Saviour's crown of thorns was made; com-
 mon garden-soil.

- P. aculeat'rus*. 4. June. South Europe. 1596.
 Syn., *P. australis*.
 — *Auble'tia*. 6. August. South China. 1817.
 Syn., *P. virgat'us*, B. M. t. 2535.

Palla'sia. (After *Pallas*, a Russian
 botanist. Nat. ord., *Compositæ*; Tribe,
Helianthoideæ.) See *Encelia*.

- P. grandifl'ora*. A synonym of *Encelia halimi-*
folia.
 — *halimifolia*. A synonym of *Encelia canescens*.

Palle'nis. (From *palea*, chaff; the
 receptacle is furnished with chaffyscales.
 Nat. ord., *Compositæ*; Tribe, *Inuloi-*
deæ.)

Hardy, annual herb. For culture, see *BUPH-*
THALMUM.

- P. spin'o'sa*. 2½. Yellow. July. South Europe.
 1870. Syn., *Buphthalmum spinosum*.
 Sibth. Fl. Gr. t. 898.

Palm. Any plant belonging to the
 order *Palmeæ*.

Palma Christi. *Ri'cinus commu-*
nis.

Palm, Cabbage. *Oreodo'æ ole-*
ra'cea.

Palm, Date. *Phœ'nix dactyli'fera*.
Palmetto, Cabbage. *Sa'bal*
Palme'tto.

Palmetto, Dwarf. *Sa'bal Adan-*
sonii.

Palmetto Palm. *Sa'bal Palme'tto*.

Palmetto, Saw. *Sereno'a serrula'ta*.

Palm, Fan. *Sa'bul Blackburnia'na*.

Pal'mia. (After *L. H. Palm*, a
 botanical author. Nat. ord., *Convolvu-*
laceæ.) See *Hewittia*.

- P. bico'lor*. See *Hewittia bicolor*. *Convolvulus*
bicolor of B. M. t. 2205 is a synonym of
 this.

Palmit'e. See *Pri'o'nium Palmi'ta*.

Palm Oil. A product of *Elæ'is*.

Palm, Patana. *Enoca'rpus Bata'ua*.

Palm, Savanah. *Sa'bal mauriticia-fo'rmis*.

Palm, Thatch. *Sa'bal Blackbur-nia'na*.

Palmyras Tree. *Bora'ssus flabel-lifo'rmis*.

Palsy-wort. *Pri'mula ve'ris*.

Palumbi'na. (From *palumbes*, a wood-pigeon; the flowers are supposed to resemble that bird. Nat. ord., *Orchi-deæ*; Tribe, *Vandææ-Oncideæ*.)

Stove orchid. For culture, see *ONCIDIUM*.

P. ca'ndida. ½-1. Pure white; lip spotted with red. Summer. Mexico. 1843. Syn., *Oncidium candidum*, B. M. t. 5545.

Pampas Grass. *Gyne'rrium arge'n-teum*.

Panæ'tia. (Derivation not explained. Nat. ord., *Compositæ*; Tribe, *Inuloideæ*.) See *Podolepis*.

P. 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., *Araliaceæ*.)

Stove, greenhouse, or hardy trees or shrubs. Cuttings of young shoots under a hand-light, in epring and summer; sandy loam and fibry peat.

P. arma'tum. India. 1876. Syn., *Aralia armata*.

— *conchifo'lum*. 10. Yellow. India. 1820. Stove evergreen.

— *crassifo'lum*. See *Pseudopanax crassifolia*.

— *crispa'tum*. Leaves pinnate. Brazil. 1888.

— *diffu'sum*. Leaves bipinnate, triangular. Poly-nesia. 1883.

— *disse'ctum*. Leaves bipinnate, drooping. 1882.

— *dum'o'sum*. Probably a synonym of *P. fruti-cosum*, var. *Delanana*.

— *e'legans*. 1880.

— *fi'ssum*. Leaves tripinnate. Polynesia. 1884.

— *frutico'sum*. 10. Java.

— *Delana'na*. III. Hort. t. 492. Syn., *Aralia Delanana*.

— *multifida'm*. Leaves tripinnatisect. 1887.

— *ho'rridum*. See *Fatsia horrida*.

— *lacinia'tum*. Polynesia. 1877.

— *le'pidum*. Brazil. 1888.

— *longi'ssimum*. See *Pseudopanax longissima*.

— *Murra'yi*. 50. Greenish-brown. Polynesia.

1881. B. M. t. 6798.

— *ni'tidum*. Brazil. 1888.

— *obtu'sum*. India. 1875.

— *orna'tum*. Leaves pinnate. Brazil. 1888.

— *pluma'tum*. Polynesia. 1879.

— *rotunda'tum*. Polynesia. 1879.

— *sambucifo'lum*. Greenish. Australia. 1873.

B. M. t. 6093.

— *serratifolia*. Stems and petioles marked with brown. Polynesia. 1883.

— *sessilifo'lum*. New Caledonia. 1874. Rev.

Hort. 1874, p. 248.

P. spinosa. See *Aralia pentaphylla*.

— *Victo'riæ*. Leaves ternate, edged with white. Polynesia. 1883. G. C. 1883, xix., p. 404, fig. 60.

Pancra'tium. (From *pan*, all, and *kratys*, potent; supposed medicinal qualities. Nat. ord., *Amaryllideæ*; Tribe, *Pancreaticeæ*. 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, fibry peat, and rotten cow-dung. Temp. for stove kinds, winter, 50°; summer, 60° to 90°. Even the hardy kinds require a little protection in severe weather.

P. ama'num of Herbert is a synonym of *Hymenocallis ovata*; of Salisbury is a synonym of *Hymenocallis caribæa*.

— *Ama'næes*. B. M. t. 1224. A synonym of *Hymenocallis Amanæes*.

— *amboine'nse*. B. M. t. 1419. See *Eurycles sylvestris*.

— *america'num*. See *Hymenocallis littoralis*.

— *angustum*. B. R. t. 221. A form of *Hymenocallis caribæa*.

— *auranti'acum*. See *Stenomesson aurantiacum*.

— *australa'sicum*. B. R. t. 715. See *Eurycles sylvestris*.

— *biflorum*. See *P. verecundum*.

— *calathi'num*. B. R. t. 215. A synonym of *Hymenocallis calathina*.

— *canarie'nse*. 1½. October. Canary Islands. 1815. B. R. t. 174.

— *caribæum*. B. M. t. 826. See *Hymenocallis caribæa*.

— *carolinia'num*. B. R. t. 927. See *P. mariti-mum*.

— *coccineum*. See *Stenomesson coccineum*.

— *corona'rium*. A synonym of *Hymenocallis crassifolia*.

— *declina'tum*. Jacq. Vind. iii., t. 10. A synonym of *Hymenocallis caribæa*.

— *Drya'ntri*. A synonym of *Hymenocallis littoralis*.

— *expa'nsum*. B. M. t. 1941. See *Hymenocallis expansa*.

— *fra'grans*. A synonym of *Hymenocallis ovata*.

— *glau'cum*. A synonym of *Hymenocallis glauca*.

— *guiane'nse*. B. R. t. 265. See *Hymenocallis guianensis*.

— *illy'ricum*. 1. Summer. S. Italy, Corsica, etc. Red. Lil. t. 153. Syn., *P. stellare*.

— *incarna'tum*. See *Stenomesson incarnatum*.

— *latifo'lum* of Ruiz and Pavon. See *Urceolina latifolia*; of Miller is probably a form of *Hymenocallis caribæa*.

— *littora'le*. Jacq. Vind. iii., t. 75. See *Hymenocallis littoralis*.

— *mariti'mum*. 1-1½. June. Mediterranean region. 1696. B. R. t. 161.

— *carolinia'num*. United States. Syn., *P. carolinianum*. B. R. t. 927.

— *mezica'num*. A synonym of *Hymenocallis lacera*, var. *paludosa*.

— *narcissifo'lum*. A synonym of *Hymenocallis calathina*.

— *nervifo'lum*. Salis. Parad. t. 84. See *Eurycles sylvestris*.

— *nu'tans*. B. M. t. 1561. A synonym of *Hymenocallis nutans*.

— *ova'tum*. B. R. t. 43. See *Hymenocallis ovata*.

— *parvifo'lum*. Red. Lil. t. 471. See *Vagaria parviflora*.

— *pa'tens* of Redouté. A form of *Hymenocallis caribæa*.

— *peda'le*. B. C. t. 809. See *Hymenocallis pedalis*.

— *petiola'tum*. A synonym of *Hymenocallis tubiflora*.

- P. rotatum*. B. M. t. 827. See *Hymenocallis lacera*.
 — *Sickenbergii*. 1. Egypt and Arabia. 1883. Berl. Gart. Zeit. 1883, p. 345.
 — *speciosum*. B. M. t. 1453. See *Hymenocallis speciosa*.
 — *stellata*. See *P. illyricum*.
 — *tiaræfolium*. Salis. Parad. t. 86. See *P. zeylanicum*.
 — *tubiflorum*. See *Hymenocallis tubiflora*.
 — *undulatum*. A synonym of *Hymenocallis undulata*.
 — *variegatum*. A form of *Stenomesson incarnatum*.
 — *verecundum*. 1. July. Northern India. 1776. B. R. t. 413.
 — *viridiflorum*. See *Stenomesson viridiflorum*.
 — *zeylanicum*. 1. June. Tropical Asia. B. M. t. 2538. Syn., *P. tiaræfolium*.

Pandanophyllum. (Compounded of *Pandanus*, and *phyllon*, a leaf; resembling a *Pandanus*. Nat. ord., *Cyperaceæ*; Tribe, *Hypolytreæ*.) A synonym of **Mapania**.

P. humile and *P. Wendlandi* are synonyms of *Mapania humilis*.

Pandanus. Screw-Pine. (From *pandang*, the Malay name. Nat. ord., *Pandanceæ*.)

Stove evergreen trees, or shrubs, with white flowers. Chiefly by suckers; sandy loam. Winter temp., 50° to 60°; summer, 60° to 85°.

- P. amaryllifolius*. See *P. laevis*.
 — *Augustianus*. New Guinea. 1886. III. Hort. t. 612.
 — *Blancoi*. See *P. odoratissimus*.
 — *Boucheanus*. E. Indies. 1820. Syn., *P. latifolius*.
 — *candelabrum*. 60. Guinea. 1826.
 — *variegatus*. Leaves striped with white.
 — *caricosus*. Yellowish-white. Moluccas. 1878.
 — *ceramensis*. See *P. conoides*.
 — *ceramicus*. See *P. labyrinthicus*.
 — *conoides*. Indian Archipelago. 1872. Syn., *P. ceramensis* and *P. decorus*.
 — *decorus*. See *P. conoides*.
 — *discolor*. Young leaves bronzy. India. 1884.
 — *Doornianus*. Syn., *P. longifolius*.
 — *edulis*. Madagascar. 1824.
 — *elegans*. See *P. sylvestris*.
 — *elegantissimus*. See *P. utilis*.
 — *fasciculatus*. 20. E. Indies. 1822.
 — *flabelliformis*. See *P. utilis*.
 — *foetidus*. 10. E. Indies. 1842.
 — *furcatus*. Tropical Asia. 1824. Syn., *P. caricosus*, *P. Laevis*, *P. glaucus*, and *P. spurius*.
 — *glaucescens*. India. 1865.
 — *Grusonianus*. Admiralty Islands. 1887. III. Hort. xxxiv., t. 12.
 — *Houletii*. Coppery-rose. Singapore. 1868.
 — *humilis*. See *P. sylvestris*.
 — *inermis*. See *P. laevis*.
 — *integrifolius*. China. 1823.
 — *javanicus variegatus*. A synonym of *P. candelabrum*, var. *variegatus*.
 — *Kerchoveti*. Leaves bright green with white spines. Admiralty Islands. 1886. III. Hort. t. 600.
 — *labyrinthicus*. B. M. t. 7063. Syn., *P. ceramicus*.
 — *laevis*. China. 1823. Syn., *P. inermis*.
 — *Laevis*. See *P. furcatus*.
 — *latifolius*. See *P. Boucheanus*.
 — *longifolius*. See *P. Doornianus*.
 — *marginatus*. E. Indies. 1823.
 — *mauritianus*. See *P. utilis*.
 — *muricatus*. Madagascar. 1826.

- P. odoratissimus*. 20. Tropical Asia. 1771. Syn., *P. Blancoi*.
 — *Pancheri*. New Caledonia. 1877. III. Hort. t. 288. Syn., *Barrotia Pancheri*.
 — *Porteanus*. Philippine Isles. 1866.
 — *pygmaeus*. January. Mauritius. 1830. B. M. t. 4736.
 — *reflexus*. Mauritius. 1818.
 — *sessilis*. Tropical Africa. 1820.
 — *spiralis*. See *P. utilis*.
 — *tenuifolius*. Tropical America. 1878.
 — *unquifer*. 3. Bengal. 1873. B. M. t. 6347.
 — *utilis*. 60. Madagascar. Syn., *P. candelabrum* of B. M. t. 5014, *P. elegantissimus*, *P. flabelliformis* and *P. mauritianus*.
 — *Vandermeeschii*. 20. Mauritius.
 — *Veitchii*. Polynesia. 1868.

Pando'rea. See **Tecoma**.

Panicle. A much branched inflorescence. e.g., Horse Chestnut, Lilac, Oat, etc.

Panicum. (From *paniculum*, a panicle; form of flowering. Nat. ord., *Gramineæ*; Tribe, *Panicææ*.)

A large genus of annual or perennial grasses, some of which are hardy; others require to be grown in a stove or a greenhouse. Seeds or divisions of the plants. Any light soil.

- P. altissimum*. 6-30. W. Indies.
 — *capilla're*. 2. Summer. N. America. 1758. Hardy.
 — *coloratum*. 1½. W. Indies. Half-hardy.
 — *indicum*. 3. E. Indies. 1818.
 — *italicum japonicum*. Gfl. 1887, p. 278, fig. 72. A garden form of *Setaria italica*.
 — *maximum*. 5-10. W. Indies. Stove.
 — *milicæcerum*. 2. South Europe. Annual. Little Millet.
 — *plicatum*. 3. Summer. E. Indies. 1821.
 — *nitro-vittatum*. Leaves white-striped, very ornamental. 1868. Garden variety.
 — *spectabile*. Brazil and W. Indies.
 — *variegatum*. Leaves white-striped and pink-tinted; a beautifully variegated grass, very elegant when grown in a basket. New Caledonia. 1867.
 — *virgatum*. 2. August. N. America. 1781. Hardy.

Panning is forming a pan or basin in the soil round the stem of a tree or shrub, in which to pour water.

Pansy. (*Viola tricolor*.) 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; insert these 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*, etc.; 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 a rare and choice kind, immediately take all the cuttings you can get, and strike them, as almost in-

variably 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: twenty inches long, one wide, and five inches deep; the lid made to un hinge; a sheet of zinc fitted inside, resting upon a rim; four rows of six holes each cut in the zinc at three 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., *Papaveraceæ*; Tribe, *Eupapaveraceæ*.)

Seeds in March and April, where the plants are to remain; division of the roots of the perennial ones; light, rich, sandy loam.

HARDY PERENNIALS.

- P. alpinum*. ½. White. July. Austria. 1759. B. C. t. 434.
- *armeni'acum*. See *P. caucasicum*.
- *bracteatum*. 4. Red. May. Siberia. 1817. B. R. t. 658.
- *caucasicum*. 1½. Red. June. Caucasus. 1813. B. M. t. 1675. Syn., *P. armeniacum*.
- *croceum*. 1. Saffron. May. Altai. 1829. B. M. t. 3035. Syn., *P. rubro-aurantiacum*.
- *gari'pinum*. 2. Brick-red. S. Africa. B. M. t. 3623.
- *nudicaule*. 1½. Yellow. July. Siberia. 1730. B. M. t. 1633.
- *glabratum*. ½. Yellow. July. Siberia. 1800.
- *lu'teum*. 1½. Yellow. July. Siberia. 1730.
- *radicatum*. ½. Yellow. July. Norway. 1809.
- *orientale*. 3. Red. May. Armenia. 1714. B. M. t. 57.
- *con'color*. 3. Scarlet. June. South Europe. 1714.
- *maculatum*. 3. Scarlet. June. South Europe. 1714.
- *persicum*. 1½. Brick. June. Persia. 1830. B. R. t. 1570.
- *pilo'sum*. 2½. Red. B. M. t. 4749.
- *Polla'ki*. Cherry-red. Persia. 1888.
- *pyrena'icum*. 1. Yellow. July. Pyrenees.

- P. pyrenaicum puniceum*. 1. Red. June. Switzerland.
 — *rubro-aurantiacum*. See *P. croceum*.
 — *rupifragum-atlanticum*. 1-2. Orange-red or scarlet. April. Morocco. 1890. B. M. t. 7107.

HARDY ANNUALS.

- P. amœnum*. See *P. somniferum*.
 — *arenarium*. 1. Red. June. Caucasus. 1828.
 — *Argemone*. 1½. Scarlet. June. Britain. Eng. Bot. ed. 3, t. 61.
 — *californicum*. 1. Orange, centre yellow. California. 1890.
 — *commutatium*. See *P. Rhœas*.
 — *du'bitum*. 2. Scarlet. June. Britain.
 — — *flore-albo*. White. June. Tauria.
 — *floribundum*. 1½. Scarlet. June. Levant. 1815. Biennial. B. R. t. 134. A form of *P. caucasicum*.
 — *fulgaz*. Pale carmine. June. Persia. 1827. A form of *P. caucasicum*.
 — *glaw'cum*. Deep scarlet-red. Armenia. Gf. 1891, p. 608, figs. 116-117.
 — *Hookeri*. 4. Pale rose to bright crimson, with white or black spot at the base of the petals. Indian gardens. B. M. t. 6729.
 — *horridum*. 2. Red. July. Australia. 1825. Swt. Fl. Gard. t. 173.
 — *hybridum*. 1½. Scarlet. June. England.
 — *laevigatum*. 1½. Red. June. Caucasus. 1823.
 — *pavoni'num*. 1. Scarlet, with grey eye bordered with black. Afghanistan and Turkestan. 1883. Gf. t. 1095, figs. 3-4.
 — *Rhœas*. 1. Red. June. Britain. Eng. Bot. ed. 3, t. 58. Syns., *P. commutatium*, *P. Roubicæi*, and *P. trilobum*.
 — *setigerum*. 2. White. July. South Europe. 1823. Swt. Fl. Gard. t. 172.
 — *somniferum*. 4. White. July. England.
 — — *albo-plénum*. 5. Variegated. July. Britain.
 — — *al'bum*. 5. White. July. Britain. Syn., *P. album*.
 — — *Jumbria'num*. 4. Variegated. July. Britain.
 — — *nigrum*. 4. Purple. July. Britain.
 — — *rubro-plénum*. 5. Variegated. July. Britain.
 — — *variega'tum*. 4. Variegated. July. Britain.
 — *trilobum*. See *P. Rhœas*.
 — *umbros'um*. Scarlet, black. 1877. G. C. 1884, xxii. p.49. Biennial.

Papa'ya. Papaw Tree. (From the native name. Nat. ord., *Passifloreæ*.) A synonym of *Carica*.

- P. Carica*. See *Carica Papaya*.
 — *gracilis*. Gf. t. 986. 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. Cart-ridge 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. *Broussonetia papyra'cea*.

Paph'nia. (*Paphia*, a surname of Venus. Nat. ord., *Orchideæ*; Tribe, *Vandææ*—*Cyrtopodiææ*. Allied to *Maxillaria*.) A synonym of *Lycaste*.

- P. cristata*. See *Lycaste cristata*.
 — — *Modigliana*. Lind. t. 117. See *Lycaste cristata*, var. *Modigliana*.
 — *grandis*. Warn. Orch. Alb. t. 145. See *Lycaste grandis*.
 — *Lindeni'na*. Lind. t. 106. See *Lycaste Lindeni'na*.
 — *Randi*. Purplish-red, with white stripes. Lind. t. 30. A synonym of *Lycaste cristata*, var. *Randi*.
 — *rugosa*. See *Lycaste rugosa*.
 — — *Kalbreyeri*. See *Lycaste rugosa*, var. *Kalbreyeri*.
 — — *Sanderi'na*. See *Lycaste rugosa*, var. *Sanderiana*.

Papperit'zia. (After *W. Papperitz*. Nat. ord., *Orchideæ*.)

- Stove orchid.
P. Leibo'ldi. ½. Green, yellow. July. Mexico. 1886.

Papy'rus. (From *babeer*, pronounced *papeer*, Syrian; hence *papyrus*, paper of the Egyptians. Nat. ord., *Cyperaceæ*; Tribe, *Scirpceæ*.) See *Cyperus*.

- P. antiquorum*. See *Cyperus Papyrus*.
 — *elegans*. See *Cyperus elegans*.
 — *laxiflorus*. See *Cyperus laxiflorus*.
 — *odoratus*. See *Cyperus odoratus*.

Paraca'ryum. (From *para*, beside, and *karyon*, a nut. Nat. ord., *Boraginææ*.)

- Biennial or perennial hardy or half-hardy herbs. For culture, see CYNOGLOSSUM.
P. anchusoides. 2. Purplish, blue. May. Cashmere. 1840. Syn., *Cynoglossum anchusoides*. B. R. 1842, t. 14.
 — *caelestinum*. 1-2. Blue, white. August. N. India. 1837. Syn., *Cynoglossum caelestinum*. B. R. 1839, t. 36.
 — *myosotoides*. 1½. Blue. September. Orient. 1838. Half-hardy.

Paradisanthus. (From *Paradeisos*, park, Paradise, and *anthos*, flower; in allusion to the beauty of the flowers. Nat. ord., *Orchideæ*.)

- To be grown in a mixture of peat, sphagnum, and charcoal, in an intermediate house.
P. bahiensis. White, purple. Xen. i. p. 30, t. 14. Syn., *Warrea bahiensis*.
 — *Mose'ni*. Green, brown, mauve, white, purple. Brazil. 1881.

Paradise, Grains of. The seeds of *Amo'mum Meleguet'a*.

Paradi'sia. St. Bruno's Lily. (From *Paradeisos*, a park, Paradise. Nat. ord., *Liliaceæ*. Syn., *Czakcia*.)

- Hardy, perennial herb. For culture, see ANTHERICUM.
P. Lilia'strum. 1-2. White, with a green spot on each perianth segment. June. S. Europe. 1629. Syn., *Anthericum Lilia'strum*, B. M. t. 318, and *Czakcia Lilia'strum*.

P. Liliastrum major. 6. Flowers larger than in the type. Syn., *Anthericum Liliastrum*, var. *majus*.

Paragra'mma. A synonym of **Poly-podium**.

Paraguay Tea, or Mate. *Ilex paraguayensis*.

Paranephe'lius. (From *para*, beside, and *nephele*, a cloud; in allusion to the great altitude at which it grows. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*.) See **Liabum**.

P. uniflorus. B. M. t. 5826. See *Liabum uniflorum*.

Para Nut. *Bertholletia excel'sa*.

Para Rubber. *He'vea brazilie'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 stems and branches of some plants; the Hypocistis 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. See also **Saprophytes**.

Parastra'nthus. (From *para-strepho*, to invert, and *anthos*, a flower; referring to the inverted position of the flowers. Nat. ord., *Campanulaceæ*; Tribe, *Lobeliææ*.) See **Lobelia**.

P. simplex. See *Lobelia tutea*.

— *unidentatus*. See *Lobelia tenella*.

— *varifolius*. See *Lobelia varifolia*.

Paratro'pia. See **Heptapleurum**.

P. Teysmanniana. See *Heptapleurum polybotryum*.

— *venulosa*. See *Heptapleurum venulosum*.

Parda'nthus. (From *pardos*, a leopard, and *anthos*, a flower; referring to the spotted flowers. Nat. ord., *Irideæ*; Tribe, *Sisyrinchieæ*. Allied to *Aristea*.) A synonym of **Belamcanda**.

Half-hardy, herbaceous, orange-flowered perennial. Seeds or divisions in spring; rich, sandy loam; a sheltered border in winter.

P. chinensis. 2. Orange, with purple brown spots. China and Japan. 1759. B. C. t. 1874. Syns., *P. nepalensis*, *P. sinensis* and *Ixia chinensis*, B. M. t. 171. This is now known as **BELAMCANDA CHINENSIS**.

Pareira Brava Root. *Chonde'n-dron tomento'sum*.

Parina'rium. (From *parinari*, the Guianan name. Nat. ord., *Rosaceæ*; Tribe, *Chrysobalanææ*.)

The rough-skinned or grey plum is the produce of *P. excel'sum*. 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. 6. Yellow. Guiana. 1824.

— *excel'sum*. 60. White. Sierra Leone. 1822.

— *macrophyllum*. 3. White. Sierra Leone. 1822.

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; alluding to the regularity of the plants. Nat. ord., *Liliaceæ*; Tribe, *Trilli'diææ*.)

Hardy perennial herbs, with creeping root-stocks, which may be divided to propagate the plants. Seeds also.

P. polyphylla. 1-2. Green, yellow. May. Himalayas. 1826.

— *quadrifolia*. 1. Yellowish-green. Spring. Britain. Eng. Bot. ed. 3, t. 1509.

Par'tium. A synonym of **Hibiscus**.

P. elatum. See *Hibiscus elatus*.

Parivo'ra. (The name in Guiana. Nat. ord., *Leguminosæ*; Tribe, *Amherstieæ*. Allied to *Amherstia*.) A synonym of **Eperua**.

P. grandiflora. 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., *Filices*.) A synonym of **Ceratopteris**.

Stove ferns. See **FERNS**.

P. acrostichoides. A synonym of *Cryptogramme crispata*, var. *acrostichoides*.

— *Lockhartii* and *pteroïdes*. See *Ceratopteris thalictroides*.

Pa'rkia. Nitta-tree. (Named after Mungo Park, the African traveller.

Nat. ord., *Leguminosæ*; Tribe, *Parkieæ*. 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. africana. 30. March. Sierra Leone. 1822. Syn., *P. uniglandulosa*.

— *biglandulosa*. Brownish-yellow, white. Malay Archipelago.

— *biglobosa*. W. Indies. Syn., *Inga biglobosa*. — *uniglandulosa*. See *P. africana*.

Parkinsonia. (Named after J. Parkinson, a botanical author. Nat. ord., *Leguminosæ*; Tribe, *Eucasalpinieæ*. Allied to *Colvillea*.)

Stove evergreen shrub. Seeds, when obtainable; cuttings of half-ripened shoots, treated like *PARKIA*.

P. aculeata. 12. Yellow. W. Ind. 1739.

Parmentiera. (Dedicated to A. Parmentier, a writer on edible plants. Nat. ord., *Bignoniaceæ*; Tribe, *Jacarandaceæ*.)

Stove tree. For cultivation, see *BIGNONIA*.

P. cereifera produces cylindrical fruit 2 to 3 feet long, of a waxy yellow colour, which hang down and look like large candles, whence the name "Candle-tree" has been given to it.

P. cereifera. White. Panama. 1866.

Parnassia. Grass of Parnassus. (Named after *Mount Parnassus*, where, from the elegance of these plants, they were fabulously said to have first sprung. Nat. ord., *Saxifragaceæ*; Tribe, *Saxifrageæ*.)

P. palustris is one of our prettiest British marsh plants. Hardy, herbaceous, white-flowered perennials. Seeds and divisions in spring; shady, marshy places.

P. asarifolia. $\frac{1}{2}$. July. N. Amer. 1812.

— *caroliniana*. $\frac{1}{2}$. May. N. Amer. 1802. B. M. t. 1459.

— *umbriata*. $\frac{1}{2}$. July. N. Amer.

— *nubiicola*. $\frac{1}{2}$ -1 $\frac{1}{2}$. Greenish, white. July. Himalayas. 1881. B. M. t. 6609.

— *palustris*. $\frac{1}{2}$. July. Britain. Eng. Bot. ed. 3, t. 565.

— *parviflora*. $\frac{1}{2}$. June. N. Amer. 1820.

— *speciosa*. $\frac{1}{2}$. July. N. Amer.

Parnassus, Grass of. *Parnassia palustris*.

Parochetus. (From *para*, near, and *ochetos*, a brook; its habitat. Nat. ord., *Leguminosæ*; Tribe, *Trifolieæ*. Allied to *Trigonella*.)

Half-hardy, evergreen, Nepalese creepers. Division in spring; cuttings under a hand-light, in summer; loam and leaf-mould. The protection of a cold pit in winter.

P. commutis. Purple. July. 1820.

— *major*. Lilac. June. 1827.

Paronychia. Whitlow-wort. (From *paronychia*, a whitlow; which it is thought to be a cure for. Nat. ord., *Ullcebraceæ*.)

Hardy tufted herbs. Seeds. Light sandy soil

P. argentea. Whitish. S. Europe. 1879. This plant yields the Sanguinaire, which in Algeria is used as a beverage.

— *serpyllifolia*. Silvery. Summer. S. Europe. 1882.

Parrot-beak Plant. *Clinanthus*.

Parrotia. (Named after M. Parrot. Nat. ord., *Hamamelidaceæ*. Allied to *Fothergilla*.)

Hardy deciduous trees. Cuttings of young shoots getting firm, in sand, under a glass, in spring; peat and loam. Should be grown in a light soil.

P. Jacquemontiana. 6-12. Cashmir.

— *persica*. 15. Scarlet. Leaves in autumn turning to bright orange, golden-yellow and scarlet. Persia. 1848. B. M. t. 5744.

Parrya. (Named after Captain Parry, the arctic navigator. Nat. ord., *Crucifereæ*; Tribe, *Arabideæ*. Allied to *Arabis*.)

Hardy perennial herbs. Seeds; common garden-soil.

P. arabidiflorum. $\frac{1}{2}$. Purple. May. Siberia. 1800. Syns., *Hesperis arabidiflora* and *Neuroloma arabidiflora*.

— *arctica*. $\frac{1}{2}$. Purple. Melville Island. 1820.

— *integerrima*. $\frac{1}{2}$. Rose, purple. April. Siberia. 1829. Evergreen.

— *nudicaulis*. Rosy-lilac. Arctic regions. Gfl. t. 1126. Syn., *Arabis nudicaulis*.

Parsley. (*Petroselinum sativum*.) 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 a quarter of an inch deep, twelve 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 two or three 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-curved 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 eighteen 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. *Cryptogramma crispa.*

Parsnip. (*Peucedanum sativum.*) 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 two 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 ten inches apart, and half an inch deep; the compartment being laid out in beds not more than four feet wide, for the convenience of weeding, etc. When the seedlings are two or three inches high, thin to ten 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, laid 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 out 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 otophaga*. See **Celery Fly**. The parsnip seeds are also attacked by *Depressaria heracliana*, a greyish moth about an inch across.

Diseases.—Minute fungi, such as *Erysiphe Martii* and *Peronospora nivea*, occasionally attack parsnips, but do little damage.

Parso'nsia. (In honour of *Dr. J. Parsons*, a microscopist. Nat. ord., *Apocynaceae*; Tribe, *Echitideae*.)

Greenhouse climbing shrubs. Cuttings of firm side shoots in summer under a bell-glass. Light loam.

P. albiflora. Cream-colour. May. New Zealand-Syn., *P. heterophylla*. Paxt. Fl. Gard. i. p. 91, fig. 62.

—*varia* *bitis*. Perhaps a young state of *P. albiflora*.

—*velutina*. N. Holland.

Parterre is synonymous with our English name *Flower Garden*.

Parthenium. (From *parthenos*, a virgin; a name given to a plant by Hippocrates. Nat. ord., *Compositae*.)

Greenhouse, or half-hardy annual. Common soil. Seeds.

P. Hystero'phorus. Whitish. West Indies. B. M. t. 2275. Bastard Feverfew. West Indian Mugwort.

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. *Gaultheria procumbens* and *Mitche'lla repens*.

Partridge Pea. *Hicist'ria*.

Pasca'lia. (Named after *Dr. Pascal*, professor at Parma. Nat. ord., *Compositæ*; Tribe, *Helianthoidæ*.)

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. 1½. Yellow. July. Chili. 1799. Andr. Rep. t. 549. Possibly a species of *Helianthus*.

Pasi'thea. (After the nymph, *Pasithea*. Nat. ord., *Liliacæ*; Tribe, *Asphodeleæ*.)

P. cæru'lea. Blue. May. Chili. Syn., *Anthericum cæruleum*.

Pasque Flower. *Anemone Pulsatilla*.

Passeri'na. Sparrowwort. (From *passer*, a sparrow; referring to the beaked seeds. Nat. ord., *Thymelacæ*; Tribe, *Euthymelææ*. Allied to Dais.)

Greenhouse evergreens, white-flowered, and from the Cape of Good Hope, 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 fibry loam. Winter temp., 40° to 48°; summer, a rather shady place after the wood is ripe. *P. filifor'mis* might be tried against a conservatory wall.

P. cilia'ta. 2. May. 1818.
— *empetrifolia*. 2. Yellow. July. Spain. 1834.
— *ericoides*. 3. May. 1810. Syn., *Lachnæa conglomerata*.

— *filifor'mis*. 1. July. 1752.
— *grandiflora*. 1. May. 1789. B. M. t. 292.
— *hirsuta*. 1½. South Europe. 1759. B. M. t. 1949.

— *la'za*. ¾. June. 1804. B. C. t. 755.
— *linearifolia*. 3. May. 1820.
— *rigida*. 2. May. 1817.
— *spicata*. 1. May. 1787. B. C. t. 311.

— *Stelle'ri*. June. Siberia. 1817.
— *teniflora*. ¾. July.
— *Thunbergii*. 3. May. 1817.
— *uniflora*. ¾. May. 1759.

EXCLUDED SPECIES.

P. Tarton-ra'ira. See *Daphne Tarton-raira*.
— *thymelæa*. See *Daphne thymelæa*.
— *villo'sa*. See *Daphne tomentosa*.

Passiflora. Passion-Flower. (From *passio*, suffering, and *flos*, a flower; referring to the filaments, or rays, and other parts, being likened to the circumstances of Christ's crucifixion. Nat. ord., *Passifloracæ*; Tribe, *Passiflorææ*.)

Cuttings of young wood, in almost any stage during summer, in sand, under a bell-glass or hand-light; peat and loam. *Cæru'lea* and its varieties are the hardest. It not only flowers freely, but ripens fruit against a wall round London. *Incarnata* 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 protected in winter by a mat. The fruit of many is very pleasant and refreshing to most palates. *P. edulis* 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 *P. Billotii*. The *quadran-*

gularis, to be fruited, must be grown in a good, light situation, in a warm stove, and be artificially impregnated. See GRANADILLA.

HALF-HARDY CLIMBERS.

P. cæru'lea. 30. White, blue. August. Brazil. 1699. B. M. t. 28. There are several hybrids from this species.
— *Colvi'lei*. White, blue, purple. Swt. Fl. Gard. t. 125.
— *glaucoephylla*. 20. Blue. August. Brazil.
— *incarnata*. 30. Pink. June. S. Amer. 1629. B. M. t. 3697.

STOVE CLIMBERS.

P. acti'nia. 10. Whitish. November. Organ Mountains. 1842. E. M. t. 4009.
— *adiantifolia*. 20. Orange. July. Australia. 1792. B. R. t. 233. Syns., *Disemma adiantifolia* and *Murucuja adiantifolia*. Greenhouse.
— *ala'ta*. 20. Green, blue, red. June. W. Ind. 1772. B. M. t. 66.
— *brasilia'na*. Scarlet, violet. September. 1831. Syn., *P. phænicea*. B. R. t. 1603.
— *alba*. White. August. Brazil. 1830.
— *albo-ni'gra*. White, blackish-purple. 1852. A hybrid.
— *amethystina*. Purplish. November. Brazil. 1827. Syn., *P. onychina*. B. R. 1838. t. 21.
— *ama'bilis*. 10. Scarlet, white. May.
— *Andersonii*. Striped. August. Saint Lucia. 1823.
— *angustifolia*. B. M. t. 1983. See *P. suberosa*, var. *angustifolia*.
— *arbo'rea*. 1-14. White, yellow. July. Columbia. 1877. B. M. t. 5864. Syn., *P. glauca* of some gardens.
— *atoma'ria*. See *P. alba*.
— *atropurpurea*. Reddish-violet, blood-red. Hybrid. 1838.
— *aura'ntia*. 15. White, red. July. New Caledonia. B. M. t. 4140. Syn., *Disemma aurantia*.
— *Banksii*. Purplish. Australia. 1867. Syn., *Disemma Banksii*.
— *Baraquiniana*. Blue, white. Amazon River.
— *Bello'ii*. White, pink. July. 1848.
— *biflora*. See *P. lunata*.
— *biloba'ta*. Greenish. Central America.
— *Buonaparte'a*. Red, blue, white. June. A hybrid between *P. alata* and *P. quadrangularis*.
— *capsularis*. Yellow, green. June. Tropical America. 1820. B. M. t. 2868. Syn., *P. rubra* of Jacquin.
— *acutifolia*. Leaves deeply bi-lobed.
— *geminiflora*. Flowers in pairs.
— *caracasa'na*. 15. Pink. June. Caraccas. 1821.
— *Cavanille'sii*. Copper. August. W. Ind. 1822.
— *chelidonea*. Greenish. Ecuador. 1879.
— *chinesis*. 30. White, blue. August. China. Greenhouse.
— *cilia'ta*. See *P. fatida*, var. *ciliata*.
— *cincinna'ta*. Violet, white. August. Brazil. 1868. B. M. t. 5737.
— *cinnabari'na*. Red. Australia. 1855. B. M. t. 5911.
— *cocci'nea*. 20. Scarlet. September. Guiana. 1820. Syn., *P. fulgens*.
— *cuneata*. 10. July. Caraccas. 1816.
— *cu'prea*. 20. Orange. July. Bahama Islands. 1724.
— *Decaisne'na*. Carmine, purple, white. A hybrid.
— *diffor'mis*. Green, black. September. Santa Martha. 1844.
— *digitata*. 12. Blue. Trinidad. 1820.
— *discolor*. See *P. Mazimiliana*.
— *edulis*. 30. White. July. W. Ind.
— *verrucifera*. White, dark purple. April. Brazil. 1837. Syn., *P. verrucifera*. B. R. 840, t. 52.

- P. filamentosa*. 20. White, blue. August. America. 1817. Syn., *P. palmata*.
- *fatida*. Whitish, purple, blue. May to October. Tropical America. 1731. Syns., *P. hirsuta* and *P. hirsuta*.
- *ciliata*. Greenish, white, purple. July to September. Jamaica. 1783. B. M. t. 288.
- *gossypifolia*. Syns., *P. gossypifolia*. B. R. t. 1634, and *P. fatida* of B. M. t. 2619.
- *hirsuta*. Syn., *P. hirsuta*. B. C. t. 135.
- *nigelliflora*. 10. White, green. September. Buenos Ayres. 1835. Syn., *P. nigelliflora*.
- *fulgens*. See *P. coccinea*.
- *glauca*. White. Tropical America.
- *gracilis*. 6. White. August. 1823.
- *ha'hnei*. White, yellow. Mexico. 1870. B. M. t. 7052. Syn., *Disemma Hahnei*.
- *helleborifolia*. Rose, purple. Rio Negro. 1866.
- *Herbertiana*. 30. Green, white. July. Queensland. 1821. B. R. t. 737. Syns., *Disemma Herbertiana* and *Murucuja Herbertiana*.
- *heterophylla*. 15. Yellowish. St. Domingo. 1817.
- *hirsuta*. See *P. fatida*, var. *hirsuta*.
- *hispidula*. Yellow, white. June. Mexico. 1846.
- *holosericea*. White, red. Summer. Vera Cruz. 1733. B. M. t. 2015.
- *Hulletti*. See *P. macrocarpa*.
- *Innesii*. White, red. 1870. A hybrid.
- *insignis*. See *Tacsonia insignis*.
- *jurullensis*. Yellow, orange. Guatemala. 1850. Syn., *P. Medusaea*. B. M. t. 4752.
- *kermesina*. See *P. Raddiana*.
- *kevevia*. Garden hybrid. 1888.
- *laurifolia*. 20. Red, violet. August. W. Ind. 1690. B. R. t. 13. Syn., *P. tinifolia*.
- *Lavsoniana*. Reddish. Summer. 1868. A hybrid between *P. alata* and *P. racemosa*.
- *ligularis*. 20. Green, purple. September. Peru. 1819. B. M. t. 2967. Syn., *P. Lowei*.
- *Loudonii*. 20. Purple. 1838.
- *luna*. White, yellow. Summer. Tropical America. 1800. B. M. t. 2354. Syn., *P. biloba*.
- *luttea*. 4. Yellow. May. America. 1714. B. R. t. 79.
- *macrocarpa*. White, purple. Rio Negro. 1866. Fruit weighs 8 lbs. Syn., *P. Hulletti*.
- *maculata*. Greenish. June. Curassoa. 1820.
- *mado'na*. A hybrid between *P. racemosa* and *P. Buonapartea*.
- *maliformis*. 20. Green, red. September. W. Ind. 1731. B. R. t. 94.
- *manca*. See *Tacsonia*.
- *marmorata*. See *Ophiocaulon cissampeloides*.
- *Maximiliana*. Greenish, white. May. Brazil. 1800. Syns., *P. discolor*, B. C. t. 565 and *P. vespertilio* of B. R. t. 597.
- *Medusaea*. B. M. t. 4752. See *P. jurullensis*.
- *Middletoniana*. 6. Rose, blue. June. S. Amer. 1837.
- *Miersii*. White, violet. July. Minas Geraes. 1888. B. M. t. 7115.
- *Moorea*. 20. Whitish. July. Buenos Ayres. 1837. B. M. t. 3773.
- *Munroi*. Whitish, violet. Summer. 1868. Hybrid between *P. alata* and *P. cœrulea*.
- *Murucuja*. Deep red. July. West Indies. 1730. Syn., *Murucuja ocellata*.
- *nigelliflora*. B. M. t. 3635. See *P. fatida*, var. *nigelliflora*.
- P. oblongata*. 10. Apetal. July. Jamaica. 1816.
- *onychina*. See *P. amethystina*.
- *organe'nsis*. Greenish, violet. Brazil. 1869. There is a variety (*marmorata*) having the leaves blotched with yellow.
- *pa'llida*. B. M. t. 660. See *P. suberosa*, var. *pallida*.
- *palmata*. See *P. filamentosa*.
- *pelta*. Greenish. August. West Indies. 1778. B. R. t. 507.
- *penduliflora*. 20. Green. May. Jamaica. 1849. B. M. t. 4565.
- *perfoliata*. Crimson. July. Jamaica. 1800. Andr. Rep. t. 547.
- *Pfo'rdtii*. A synonym of *P. alata-cœrulea*.
- *phœnicea*. See *P. alata*, var. *brasiliensis*.
- *picturata*. 15. Red. September. Brazil. 1820. B. R. t. 673.
- *princeps*. See *P. racemosa*.
- *punctata*. See *P. tuberosa*.
- *quadrangul'ris*. 20. Green, blue. August. Jamaica. 1763. B. R. t. 14.
- *aucubifolia*. Leaves variegated. Nicaragua. 1875.
- *racemosa*. 20. Scarlet. June. Brazil. 1815. B. M. t. 2001. Syn., *P. princeps*. B. C. t. 84.
- *Raddiana*. Blood-red, purple. Autumn. Brazil. 1831. Syn., *P. kermesina*. B. M. t. 3603.
- *rotundifolia*. 8. White. June. Antilles. 1779.
- *rubra*. 15. Red. June. W. Ind. 1831. B. R. t. 95.
- *sanguinolenta*. Reddish-violet. Columbia. 1868.
- *serratifolia*. Tropical America. B. M. t. 651.
- *sicyodes*. Green. August. Mexico. 1839. B. R. t. 88. Syn., *P. glauca* of Aiton.
- *stipulata*. White. August. Cayenne. 1779.
- *suberosa*. Greenish-yellow, purple. Summer. West Indies. 1759.
- *angustifolia*. Yellowish, purple. Summer. West Indies. 1773. B. M. t. 1983.
- *minima*. Greenish-yellow, white, dusky purple. July. Tropical America. 1690. B. R. t. 144.
- *pallida*. Yellowish-green. August. Florida and West Indies. B. R. t. 660.
- *titiaefolia*. 10. Green, red, blue. July. Peru. 1823.
- *tinifolia*. See *P. laurifolia*.
- *trifasciata*. Leaves with three purplish stripes. Para. 1868.
- *triloba*. Violet. Peru. Ill. Hort. 1889, p. 53, t. 83.
- *tuberosa*. Greenish, white, purple. Summer. South America. 1810. B. R. t. 432. Syn., *P. punctata*.
- *tucumane'nsis*. 10. White, green. July. Chili. 1836. B. M. t. 3636.
- *vespertilio*. See *P. Maximiliana*.
- *violacea*. Lilac, blue, violet. Brazil. Rev. Hort. 1885, p. 468.
- *vitifolia*. Vermilion-red. Panama. 1851. Syn., *Tacsonia Buchananii*.
- *Watsoniana*. Green, white, violet, lilac. Brazil? G. C. 1886, xxvi. p. 648, figs. 128-127.
- *Weberiana*. White. Summer. Argentine Republic. 1885. Rev. Hort. 1887, p. 324.

Passion Flower. *Passiflora* and *Tacsonia*.

Pastina'ca. Parsnip. (From *pastinum*, a dibble; referring to the shape of

the root. Nat. ord., *Umbelliferae*.) A synonym of **Peucedanum**.

P. Opo'ponax. See *Malabaila Opoponax*.

— *sativum*. Eng. Bot. ed. 3, t. 612. See *Peucedanum sativum*.

Patago'nula. (From *Patagonia*, its native country. Nat. ord., *Boraginæ*; Tribe, *Cordiææ*.)

Stove evergreen tree. Cuttings in sand, under a glass, in May; sandy loam and fibry peat. Winter temp., 50° to 55°; summer, 60° to 85°.

P. americana. 20. White. July. Brazil. 1732.

Patero'nia. (Named after *Col. W. Paterson*, a botanist. Nat. ord., *Iridææ*; Tribe, *Sisyrinchieæ*. Allied to *Sisyrinchium*.)

Greenhouse herbaceous perennials, from New South Wales, and blue-flowered, except where otherwise mentioned. For culture, see IRIS.

P. glabrata. 1½. Purple. June. 1814. B. R. t. 51.

— *glauca*. 1. June. 1820. B. M. t. 2677.

— *lanata*. 1. June. 1824.

— *longifolia*. 1. June. 1818.

— *longica'pa*. 1½. June.

— *me'dia*. A synonym of *P. glabrata*.

— *occidentalis*. 1. June. 1824.

— *pygma'ea*. May.

— *sapphiri'na*. B. R. 1839, t. 60. A synonym of

P. occidentalis.

— *sericea*. 1½. June. 1803. B. M. t. 1041.

Patience, Herb. *Ru'mex Patie'ntia*.

Patri'nia. (Named after *M. Patrin*, a Siberian traveller. Nat. ord., *Valerianaceæ*.)

Hardy biennials, except *heterophylla*, and all yellow-flowered. Seed in March, in light soil.

P. heterophylla. May. China. 1837. Hardy herbaceous. Syn., *Valeriana siberica*. B. M. t. 714.

— *interme'dia*. 1. June. Siberia. 1820. Syn., *P. nudiuscula*.

— *rupes'tris*. 1. May. Siberia. 1801.

— *scabrofolia*. 1. June. Dahuria. 1817.

B. C. t. 1340. Syn., *P. serratifolia*.

— *sibirica*. 1. June. Siberia. 1751. Syns.,

P. coronata, and *Valeriana ruthenica*.

B. M. t. 2325.

Paulli'nia. (Named after *S. Paullii*, a Danish botanist. Nat. ord., *Sapindaceæ*; Tribe, *Sapindeæ*. 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. asiatica. See *Toddalia aculeata*.

— *bipinnata*. 20. Brazil. 1816.

— *carthaginensis*. A species of *Serjania*.

— *cauliflora*. 18. Caraccas. 1822. Jacq. Ic.

t. 458.

— *Cupa'nia*. 20. Trinidad. 1818.

— *hispidata*. 20. Trinidad. 1825. Jacq. Schoenb.

t. 268.

— *oce'nnica*. Polynesian. 1875.

— *pinnata*. 16. Guinea. 1822. Syn., *P. senega-*

lensis.

— *pubescens*. 16. S. Amer. 1820.

— *senegalensis*. See *P. pinnata*.

— *tetragona*. 20. Cayenne. 1825.

P. thalictrifolia. Pinkish. Brazil. 1871. B.

M. t. 5879. A very beautiful climber.

— *vespertilio*. 20. St. Christopher. 1823.

Paulowilhel'mia. (Derivation not given. Nat. ord., *Acanthaceæ*.)

Stove herbaceous shrub.

P. speciosa. 2. Mauve-blue, yellow. Tropical

Africa. G. C. 1889, vi. p. 749, fig. 106.

Paulo'wnia. (Named after the hereditary princess of the Netherlands, daughter of the Emperor of Russia. Nat. ord., *Scrophulariaceæ*; Tribe, *Che-loneæ*.)

Cuttings of young shoots, when a little firm, under a hand-light. It is a deciduous tree, with beautiful foliage, and 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. tomentosa. 30. Lilac. June. Japan.

1840. Syn., *P. imperialis*. B. M.

t. 4666.

Pave'tta. (The East Indian name. Nat. ord., *Rubiaceæ*; Tribe, *Ixoreæ*. Allied to *Ixora*.)

Stove, white-flowered evergreens. Cuttings of half-ripened shoots in sand, under a bell-glass, in spring; sandy loam and fibry peat. Winter temp., 45° to 48°; summer, 60° to 75°.

P. alba. See *P. indica*.

— *arensis*. 3. June. China. 1799.

— *Ca'fra*. 3. August. Cape of Good Hope.

1823. B. M. t. 3580.

— *fastidissima*. See *Putoria calabrica*.

— *indica*. 3. September. E. Ind. 1791. B.

R. t. 198. Syns., *P. alba* and *P. tomen-*

tosa.

— *javanica*. A synonym of *Ixora javanica*.

— *natale'nsis*. White. Natal. 1838.

— *tomentosa*. See *P. indica*.

Pa'via. (Named after *P. Paw*, a Dutch botanist. Nat. ord., *Sapindaceæ*; Tribe, *Sapindeæ*.)

In the Genera Plantarum this genus is united with *ÆSCULUS*, from which it differs in having a smooth, not spiny, capsule. Hardy deciduous trees and shrubs, very like the Horse Chestnut. Seeds, layers, and grafting on the Horse Chestnut. The weeping one and others look interesting when grafted at a good height; deep, sandy loam.

P. alba. 8. White. April. N. Amer. 1820.

Syns., *P. macrostachya*, *Æsculus macro-*

stachya, B. M. t. 2118 and *Æ. parvi-*

flora.

— *californica*. 30. White. California. 1838.

— *car'nea*. 16. Red. 1820. Swt. Fl. Gard.

ser. 2, t. 301. Syn., *Æsculus carnea*.

— *discolor*. 4. Red, yellow. June. N. Amer.

1812. Syn., *Æsculus discolor*.

— *flava*. 20. Yellow. May. N. Amer. 1764.

Syn., *Æsculus flava*.

— *indica*. North of India. 1844. Syn., *Æsculus*

indica.

— *macrocar'pa*. See *P. alba*.

— *macrostachya*. 6. White. June. N. Amer.

1820. G. C. 1877, p. 657. Syn., *Æ. mac-*

rostachya.

— *neglecta*. 20. Pale yellow. May. 1823.

Syn., *Æsculus neglecta*.

- P. rubra*. 6. Scarlet. May. N. Amer. 1711.
Syn., *Æscutius Pavia*.
— *arguta*. 4. Red. Europe. 1820.
— *humilis*. 3. Red. May. N. Amer.
Syn., *P. humilis*.
— *humilis pendula*. Red.
— *sublaciniata*. 6. Red. May. N. Amer.
1823.

Pavo'nia. (Named after *J. Pavon*, a Spanish botanist. Nat. ord., *Malvaceæ*; Tribe, *Ureneæ*. Allied to *Malva-viscus*.)

Stove evergreens. Cuttings in sand, under a glass, in heat; sandy loam. Stove temperature. The following are the only species worth culture:

- P. coccinea*. 2. Scarlet. St. Domingo. 1816.
— *Mackoyana*. Belg. Hort. 1878, t. 3. See *Goethea Mackoyana*.
— *malacophylla*. 3. Red. August. Bahia. 1823. Syns., *P. velutina* and *Lopimia malacophylla*. B. M. t. 4365.
— *multiflora*. Purple. September. South Brazil. 1879. B. M. t. 6398.
— *Schra'nkii*. 2. Orange, yellow. July. Brazil. 1823. B. M. t. 3692. Syn., *Lebretonia coccinea*.
— *Wioti*. Flor. Mag. new ser. t. 276. See *Goethea multiflora*.

Paxto'nia. (Named after *Sir J. Paxton*, the celebrated gardener to the Duke of Devonshire. Nat. ord., *Orchideæ*; Tribe, *Epidendreae*.) See **Spathoglottis**.

P. rosea. B. R. 1836, t. 60. See *Spathoglottis rosea*.

Pea. (*Pisum sativum*.) There are many varieties, but a great sameness about those of the early kinds. One good variety is all that is required in a small garden; and for one combining all the good qualities of a pea, *Alpha*, 3 feet high, is among the best. *American Wonder*, *Dr. Hogg*, *Ringleader*, *William the First*, etc., are also all good, well-known peas, where variety is required. The best varieties to succeed are the *Champion of England*, a first-rate pea, 4 to 5 feet high; *Dickson's Favourite*, *Fill Basket*, *Marvel*, *Telegraph*, *Vetch's Perfection*, etc., all of which are first-rate peas to succeed each other from May till November. There are many other good varieties, such as *King of the Marrows*, *Macleans Best of All*, *Prizetaker Green Marrow*, *Telephone*, etc., etc.

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 pulverized, and pretty free from slugs, etc.

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 three 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 day-time 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 two feet, for the early and late crops, but three feet for the main ones; Marrowfats at three and a half or four and a half; Knight's Marrowfats and other gigantic varieties at six or eight. Peas not intended to be supported require the least room. At the early and late sowings the seed should be buried an inch deep, but for the main crops an inch and a half. With respect to the distances, it may be inserted in the row, of the Dwarfs, two in an inch; Blues and other middle-sized varieties for the main crops,

three in two inches; the tall and Knight's Marrowfat, as well as others of similar stature, full an 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 two or three 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 six or eight inches with light, fresh mould not particularly rich. The seed must be buried one inch and a half deep. The frame, which is required to be two feet and a half high behind, and one and a half 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 bins 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 two feet asunder, or, still better, in pairs, with ten inches interval, and two feet and a half between each pair. These will come into production about the middle of March.

In every instance, as stated above, the rows should be two feet apart, 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, etc.

The temperature may be uniformly kept up throughout their growth, having 50° for the minimum at night, and 70° for their maximum by day.

Peach. *Pe'stica vulga'ris.*

Select Varieties in the order of their ripening.—Those in *italics* are good forcing peaches. Acton Scot, Pourpré Hâtive, Grosse Mignonne, Red Magdalen, *Royal George*, *Noblesse*, *Bellegarde*, or Galande, Late Admirable, Walburton Admirable, River's Early York, River's Early, etc.

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 six 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 two or three feet in length, and this is headed back in the succeeding spring to about five or six eyes, thus leaving about five or six inches of the base of the shoot. The bud generally produced 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, etc.—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 two 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 two to three 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, ven 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 should 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 a-head, 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 four or five 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

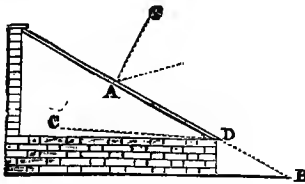
another nearer than four or five inches up any given line, and so on, all over the tree. One thing may be observed; if the operator is at any time doubtful about a young shoot, let him merely pinch the point instead of totally removing it; at the finishing disbudding he will perceive whether it may be 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 three 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 six to eight 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 six 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 beat 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.

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 nine 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 at the point A, and the lower are made to slide down to the D, and the upper to the point A. The flue, or hot-water pipe, enters on the east or west end as most convenient, and passes within six inches of the east and west wall, but not within less than two 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 dotted line C. 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 point B, every part of the fruit on the trees, which are trained nearly horizontally along the dotted line C, 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 point A, 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 fifty 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 B to D, 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 twelve-inch pot, cutting it back to four buds, and shift every year until it has attained an eighteen-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 overhead 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.*

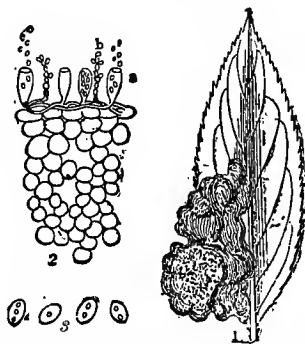
When the blossoms are well opened, impregnation should be aided by applying the pollen with a camel's-hair pencil.

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. Many conflicting accounts have been given as to the cause of this disease, but it now seems clearly established that, like many other diseases of plants, it is caused by the corroding mycelium of a fungus, in this case by *Ascomyces deformans*. The disease takes the form of large red irre-

gular blisters upon the leaf (Fig. 1, reduced), sometimes without any fungus being apparent to the naked eye, or, as seen under an ordinary lens, at other times the fungus is visible as a very fine whitish surface covering a portion of the blister; this is because the fungus grows among the cells in the interior of the blister, only coming to the surface when perfecting its fruit. Fig. 2 shows a thin



section through a portion of a blister with the fungus in fruit, magnified about 100 diameters. The spores are formed in little sacs, called *asci* (*a*), each ascus containing 8 spores; when ripe, the asci burst, and the spores escape, ultimately to reproduce the fungus. The spores contain one, two, or three nuclei, as shown at Fig. 3, magnified about 600 diameters. We did not observe any spores containing three nuclei in our specimen, but give them on the authority of Mr. W. G. Smith, who published an account of the fungus in the "*Gardener's Chronicle*" for 1875, vol. 4, p. 136. Mingled with the asci are some beaded threads (*b*), which probably break up and form a second kind of fruit.

Pear. *Pyrus communis*.

Superior Dessert kinds, arranged in the order of ripening.—1, Citron des Carnes; 2, Jargonelle; 3, Délice d'Hardenpont; 4, Dunmore; 5, Marie Louise; 6, Louis Bonne of Jersey; 7, Fondante d'Automne; 8, Beurré d'Amalix; 9, Beurré Diel; 10, Althorpe Crasanne; 11, Winter Nelis; 12, Passe Colmar; 13, Hacon's Incomparable; 14, Thompson's; 15, Knight's Monarch; 16, Glout Morceau; 17, Beurré d'Arenberg; 18, Easter Beurré; 19, Soldat Laboureur; 20, Josephine de Malines; 21, Ne plus Meuris; 22, Beurré Rance.

Kitchen Pears in the order of their ripening.—1, Bezi d'Heri; 2, Summer

Compote; 3, Catillac; 4, Bellissime d'Hiver; 5, Uvedale's St. Germain.

Useful and profitable Orchard Pears.—1, Beurré de Capiaumont; 2, Beurré Diel; 3, Louis Bonne of Jersey, William's Bon Chrétien; 4, Jargonelle; 5, Swan's-egg; 6, Moorfowl's-egg. 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, 13, 15, 16, 18, will succeed well, if necessary, as espaliers, pyramids, etc.; 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, 11, 12, 16, 17, 19, 20, 21, 22, should have a wall, if possible. Nos. 11, 12, 17, 21, deserve a south aspect. The varieties are now very numerous, and a great many of them useless.

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, 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 two feet deep; but for espaliers, walls, pyramids, etc., 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 four 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 three inches at Midsummer, or after, must be pruned closely off. No stump or spur must be left,

unless a blank space occurs; 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 or cold subsoils.

Insects.—See **Acarus**, **Aspidiotus**, and **Selandria**.

Pea'cea. (After *Mr. Pearce*, a botanical collector in the Bolivian Andes. Nat. ord., *Gesneraceæ*.) See **Isoloma**.

P. hypocyrtiflora. See *Isoloma hypocyrtiflorum*.

Peat Earth. See **Bog Earth**.

Peat Plants. See **American Plants**.

Pe'ctis. (From *pecten*, a comb; teeth of the pappus. Nat. ord., *Compositæ*; Tribe, *Helenioideæ*.)

A half-hardy annual. See **ANNUALS**.

P. angustifolia. Yellow. Rocky Mountains. 1865. Fragrant. B. M. t. 6236.

Peda'lium. (From *pedalion*, a rudder; the fruit has rudder-like angles. Nat. ord., *Pedaliaceæ*.)

A sparingly-branched, stove annual. Seeds. Sandy soil.

P. mu'reæ. Yellow. India and Tropical Africa. Wight Ic. t. 1615.

Pedicula'ris. Lousewort. (From

pediculus, a louse; supposed effect on sheep eating it. Nat. ord., *Scrophulariaceæ*; Tribe, *Euphrasiaceæ*. Allied to *Melampyrum*.)

Seeds and cuttings. Loam and peat; the great proportion require the cold pit in winter. *See-primum Carolinum* is a giant among them, and one of the most beautiful. They should be sown where it is intended they are to remain.

HARDY HERBACEOUS.

- P. adæc'ndens*. ½. Red. July. Switzerland. 1819.
— a'tro-ru'bens. 1. Dark red. July. Switzerland. 1819.
— canad'nsis. ½. Yellow. July. N. Amer. 1780. B. M. t. 2506.
— como'sa. 1. Yellow. July. Italy. 1775.
— comp'cta. 1. Yellow. July. Siberia. 1815.
— dolichorh'za. Golden-yellow. Turkestan. Gfl. 1884, p. 54.
— e'legans. Purple. June. Siberia. 1827.
— incarnat'a. ½. Pink. June. Austria. 1796.
— megalan'tha. 1-2. Rose-purple. Himalayas. B. M. t. 7132.
— Oede'ri. Yellow. July. North Europe. 1827.
— pallida. Yellow. July. N. Amer. 1826.
— pal'stris. 2. Purple. June. Britain.
— probosc'idea. Purple. June. Siberia. 1827.
— ro'sea. Rose. July. South Europe. 1825.
— ru'bens. Red. May. Dahuria. 1827. Annual.
— specio'sa. Purple. June. Siberia. 1827.
— stri'a'ta. Yellow, crimson. June. Dahuria. 1826.
— sylvat'ica. 1. Pink. August. Britain.

HALF-HARDY HERBACEOUS.

- P. abrotanifolia*. 1. Yellow. June. Dahuria. 1816. Syn., *P. myriophylla*.
— euphrasi'odes. 1½. Purple. Siberia. 1816.
— flamm'ea. 1. Yellow, scarlet. July. Switzerland. 1775.
— folio'sa. 1. Cream. July. Austria. 1785.
— gyrofl'ea. ½. Purple. July. Switzerland. 1819.
— moll'is. 1. Purple. June. Nepaul. 1850. B. M. t. 4599.
— myriophylla. See *P. abrotanifolia*.
— recu'tita. ¾. Purple. June. Austria. 1787.
— resupina'ta. 1. Purple. July. Siberia. 1816.
— rostrat'a. ½. Purple. June. Switzerland. 1819.
— see'prum Caroli'num. 5. Yellow. July. Sweden. 1798.
— tubero'sa. 1. Yellow. June. Switzerland. 1799.
— uncin'a'ta. 1. Yellow. July. Siberia. 1815.
— versicolor. 1. Yellow. May. Switzerland. 1819.
— verticillat'a. 1. Rose. July. Austria. 1790.

Pedila'nthus. (From *pedilon*, a shoe, and *anthos*, a flower; on account of the shape of the flower. Nat. ord., *Euphorbiaceæ*; Tribe, *Euphorbiææ*. Allied to *Euphorbia*.)

Stove perennial shrub, of a succulent nature. Cuttings should be well dried at the base, and allowed to cicatrize before inserting in sand, which should be slightly damped from time to time, but never made very wet. When rooted well, they may be planted in a mixture of two-thirds sandy loam, and one third brick rubbish, to which may be added a little rotten cow-dung. Summer temp., 60° to 80°; winter, 60° to 70°. The atmosphere should be dry.

P. tithymalo'ides. 3. Red. E. Indies. 1874. Sins., *Euphorbia carinata*, B. R. t. 837, and *E. canaliculata*, B. C. t. 727. There are two varieties of this, viz., *variagat'us*

and *variegatus cucullatus*, both with white-bordered leaves, the latter with the edges drawn up so as to appear cupped.

Pe'kea. (Said to be from the Guianese name. Nat. ord., *Ternstroemiaceæ*.) See **Caryocar**.

P. tuberculosa. See *Caryocar tomentosum*.

Pelargo'nium. Stork's-bill. (From *pelargos*, a stork; referring to the beak-like formation of the ripe seed-pod. Nat. ord., *Geraniaceæ*; Tribe, *Geranieæ*.)

Natives of South Africa, except where otherwise mentioned. Many, however, have originated as garden hybrids. Seeds; cuttings. Rich sandy soil.

GREENHOUSE BIENNIALS AND ANNUALS.

- P. anemonifolium*. 1½. Pink. July. Jacq. Ic. t. 535.
 — *canariense*. 1½. White, red. August. Canaries. 1802.
 — *caucasicum*. 2. Pink. July. 1812. Jacq. Ic. t. 529.
 — *coriandrifolium*. 1. White, red. June. 1724. Jacq. Ic. t. 528.
 — *humifolium*. 1. Red. June. 1801. Annual. Swt. Ger. t. 42.
 — *senecioides*. 2. White. June. 1775. Annual. Swt. Ger. t. 327.

GREENHOUSE HERBACEOUS.

- P. alchemilloides*. 1. Pink. June. 1693.
 — *althæoides*. 1. White. May. 1724.
 — *Andreusii*. Blush. June. 1802.
 — *blanckum*. Blush. 1801. Swt. Ger. t. 4.
 — *chamaedrifolium*. 1. White. May. 1812. Jacq. Ic. t. 523.
 — *cinereum*. 1. White, crimson. S. Africa. 1862.
 — *columbinum*. 1. Purple. August. 1795. Jacq. Schoenb. t. 133.
 — *Endlicheria* num. 1. July. Taurus. 1855. Hardy in the South of England.
 — *fissum*. 1. Pink. S. Africa. 1862.
 — *fumaroides*. 1. White. S. Africa. 1862.
 — *heracleifolium*. 1. Grey. July. 1800. B. C. t. 437.
 — *la'cerum*. 1½. Pink. July. 1731. Jacq. Ic. t. 532.
 — *luridum*. Straw. August. 1811. Swt. Ger. t. 281.
 — *multicaule*. 2. Pale violet. July. 1802. Jacq. Ic. t. 534.
 — *Enothéræ*. 1. Rose. April. 1812.
 — *ovale*. 1½. Purple. June. 1774. Swt. Ger. t. 235.
 — *parviflorum*. Purple, red. June. 100.
 — *petroselinum*. Blush. July. 1802.
 — *procumbens*. 1. Purple. April. 1801.
 — *pulverulentum*. 1. Grey, blood-red. July. 1822. Swt. Ger. t. 213.
 — *ramunculophyllum*. Pinkish. S. Africa. 1862.
 — *recurvatum*. White. July. 1790. Swt. Ger. t. 223.
 — *sanguineum*. 1. Scarlet. July. Swt. Ger. t. 76.
 — *tabularis*. 1. Pale yellow. June. 1775.

GREENHOUSE TUBEROUS-ROOTED.

- P. aff'ne*. 1. Purple. June. 1800. Swt. Ger. t. 277.
 — *apifolium*. 1. White, red. June. 1800.
 — *aristatum*. 1. White, red. June. 1800.
 — *asarifolium*. 1. Dark purple. December. 1821.
 — *atrum*. 1. Dark brown. June. 1793.
 — *auriculatum*. 1. Pale red. May.
 — *barbatum*. 1. Flesh. July. 1790. Jacq. Ic. t. 513.
 — *Bowke'ri*. Purple, yellow. S. Africa. 1864.

- P. bubonifolium*. 1. White, purple. May. 1800.
 — *ca'rneum*. 1. Pink. May. 1812. Jacq. Ic. t. 512.
 — *clivatum*. 1. Flesh. May. 1795. Jacq. Ic. t. 519.
 — *congestum*. 1. Lilac. June. 1824. Swt. Ger. t. 325.
 — *conspicuum*. 1. Crimson. July. 1810.
 — *coronillaefolium*. 1. Brown. June. 1795.
 — *cordatifolium*. 1. Pale yellow. May. 1821.
 — *crassicaule*. 2. White. July. 1786. B. M. t. 477.
 — *depressum*. 1. Cream. May. 1812. Jacq. Ic. t. 520.
 — *dioicum*. 1. Dark brown. June. 1795. B. M. t. 2234.
 — *dipetalum*. 1. Pale purple. May. 1795.
 — *echinata* num. 1. White, red. June. 1789. B. M. t. 309.
 — *filipendulifolium*. 1. Green, brown. July. 1812. Swt. Ger. t. 85.
 — *fissifolium*. 1. White, red. June. 1795.
 — *flavum*. 1. Yellow, brown. August. 1724. Swt. Ger. t. 254.
 — *floribundum*. 1. White, red. April. 1800.
 — *foliosum*. 1. Yellow, red. May. 1800. Swt. Ger. t. 340.
 — *geifolium*. Yellow. Crimson-brown. S. Africa. 1862.
 — *heterophyllum*. 1. White, red. May. 1800. Jacq. Ic. t. 516.
 — *hirsutum*. 1. Pink. March. 1788.
 — *incrassatum*. 1. Pale rose. May. 1801. B. M. t. 761.
 — *laciniatum*. 1. Pink. May. 1800.
 — *Leadnum*. 1. White. May. 1823.
 — *lineare*. 1. Yellow. June. 1800.
 — *lobatum*. 1. Yellow, brown. July. 1710. B. M. t. 1986.
 — *longiflorum*. 1. Yellow. May. 1812. Jacq. Ic. t. 521.
 — *longifolium*. 1. Pink. May. 1812. Jacq. Ic. t. 518.
 — *lutium*. 1. Yellow. May. 1802.
 — *melananthum*. 1. Dark brown. May. 1790. Jacq. Ic. t. 514.
 — *millefoliatum*. 1. Yellow, brown. July. Swt. Ger. t. 230.
 — *multiradiatum*. 1. Dark brown. May. 1820. Swt. Ger. t. 145.
 — *nervifolium*. 1. Variegated. June. 1812. Jacq. Ic. t. 517.
 — *nitens*. 1. White. June. 1821.
 — *nummularifolium*. 1. Yellow. June. 1801. Salis. Parad. t. 23.
 — *nutans*. 1. Yellow. May. 1788. Swt. Ger. t. 466.
 — *oblongatum*. Yellow, red. S. Africa. 1872.
 — *obtusatum*. Pale yellow. Namaqualand. 1881.
 — *orobifolium*. 1. Blood-red. June. 1824.
 — *ovalifolium*. 1. White. May. 1829.
 — *oxalidifolium*. 1. Yellow. June. 1801.
 — *pa'llens*. 1. Pale yellow. May. 1800. Swt. Ger. t. 148.
 — *pettatum*. 2. Purple. July. 1701.
 — *variegatum*. 2. Purple. July. 1701.
 — *penniflorum*. 1. Yellow. May. 1800.
 — *picatum*. 1. White, red. April. 1800.
 — *pilosum*. 1. Pink. June. 1801.
 — *pulchellum*. 1. White. April. 1795. B. M. t. 524.
 — *punctatum*. 1. Cream. May. 1794.
 — *purpurascens*. 1. Purple. May. 1800.
 — *radicatum*. 1. Yellow. June. 1802. B. M. t. 1718.
 — *radula*. 3. Yellow. June. 1774.
 — *ragacæum*. 1. Purple. May. 1788. B. M. t. 1877.
 — *reflexum*. 1. White. June. 1800.
 — *reticulatum*. 1. Pink. May. 1820.
 — *retusum*. 1. Dark crimson. June. 1824.

P. revolutum. 1. Purple. June 1800. Jacq. Ic. t. 138.
 — *roseum*. 1. Rose. April. 1792. Fl. Ser. t. 607.
 — *rumicifolium*. 1. Yellow. June. 1823.
 — *rutafolium*. 1. Yellow. S. Africa. 1869.
 — *saxifragoides*. Pink, purple. 1890.
 — *schizopetalum*. 1. Yellow, brown. June. 1821. Swt. Ger. t. 232.
 — *Schof. tiii.* 1. Intense crimson-scarlet, black. S. Africa. 1869.
 — *setosum*. 1. Rose. May. 1821.
 — *spathulatum*. 1. Yellow. May. 1805.
 — *affine*. 1. Yellow. April. 1794.
 — *tenebrum*. 1. Yellow. June. 1802.
 — *testaceum*. Red. S. Africa. 1862.
 — *triphyllosum*. 1. Flesh. May. 1812. Jacq. Ic. t. 615.
 — *triste*. 1. Green, yellow. July. 1632. B. M. t. 1641.
 — *undulatifolium*. 1. Black. June. 1821. Swt. Ger. t. 329.
 — *undulatum*. 1. White. June. 1795.
 — *violacefolium*. 1. Pale rose. May. 1779.
 — *violaceolum*. 1. White. May. 1810.
 — *virginicum*. 1. White, red. June. 1795.
 GREENHOUSE EVERGREEN SHRUBS.
P. abrotanifolium. 3. Red. May. 1791. Jacq. Schoenb. t. 136.
 — *acerifolium*. 3. Pale purple. April. 1784.
 — *acetosum*. 3. Pink. July. 1710. B. M. t. 108.
 — *acugnaticum*. 3. Red. June. 1818.
 — *adulterinum*. 3. Purple. May. 1785. Swt. Ger. t. 22.
 — *alnifolium*. 2. Pink-veined. May.
 — *alternans*. 1. White, purple. June. 1791.
 — *amplissimum*. 2. Purple. May.
 — *anceps*. 1. Pink. June. 1788. Trailer.
 — *angulosum*. 3. Purple. August. 1724.
 — *ardens*. Red. June. 1807. Swt. Ger. t. 45.
 — *armatum*. Purple. May. 1789. Swt. Ger. t. 214.
 — *artemisiacifolium*. White. June. 1817.
 — *asperum*. 3. Pink. August. 1795.
 — *astragalifolium*. 1. White, purple. July. 1788. Jacq. Ic. t. 511.
 — *australe*. 1. Rose. June. N. Holland. 1792. Swt. Ger. t. 63.
 — *balsameum*. 3. Pink. August. 1790. Jacq. Ic. t. 543.
 — *Barringtonii*. 3. Purple. May.
 — *Beaufortianum*. 3. Lilac. June. Swt. Ger. t. 138.
 — *Bellaardi*. White. June.
 — *Bentnickiana*. 2. Scarlet. May.
 — *betulinum*. 3. White, red. July. 1759. B. M. t. 148.
 — *bicolor*. 1. Purple, white. July. 1778. B. M. t. 201.
 — *blattarium*. 1. Violet. July. 1720. Jacq. Schoenb. t. 131.
 — *bulbatum*. 1. Pink. June. Jacq. Ic. t. 530.
 — *canescens*. White. July.
 — *canum*. 1. Pale purple. August. 1820.
 — *capitatum*. 3. Purple. June. 1690.
 — *cardusifolium*. 3. Pale purple. July. 1816. Swt. Ger. t. 15.
 — *carinatum*. 1. White, purple. July. 1820. Swt. Ger. t. 21.
 — *carnosum*. 1. Purple, white. May. 1724.
 — *ceratophyllum*. 1. White. June. 1786. B. M. t. 315.
 — *citrodorum*. 3. White. July. 1800.
 — *cochlearium*. 3. Purple. May.
 — *conduplicatum*. 3. Purple, white. May. 1774.
 — *consanguineum*. 2. Pink. June.
 — *cordatum*. 3. Purple, white. May. 1774. Swt. Ger. t. 67.
 — *coronopifolium*. 1. Pale red. August. 1791. Jacq. Ic. t. 526.

P. cortusaeifolium. 2. Pink. July. Africa. 1786. Swt. Ger. t. 14.
 — *cotyle domis*. 1. White. June. St. Helena. 1765.
 — *crenatum*. 2. July. 1800.
 — *cripsum*. 3. Purple. September. 1774. Swt. Ger. t. 388.
 — *crithmifolium*. 1. White, purple. May. 1790.
 — *cuiculla*. 3. Purple. May. 1690.
 — *grandiflorum*. 4. Purple. May. 1818.
 — *major*. 4. Purple. May. 1812.
 — *striatiflorum*. 4. Purple. May. 1810.
 — *cuspidatum*. 3. White, red. July.
 — *cygnosbatifolium*. 1. Dark red. June. Swt. Ger. t. 259.
 — *dasycaulon*. 1. White, purple. September. 1795. B. M. t. 2029.
 — *decorum*. Lilac. July. 1825. Swt. Ger. t. 415.
 — *delphinifolium*. 3. Pink. June.
 — *denticulatum*. 3. Pink. June. 1789. Jacq. Schoenb. t. 135.
 — *disceps*. 3. Africa. 1808.
 — *diversifolium*. 3. White, red. July. 1794.
 — *elatium*. 2. White, purple. August. 1795.
 — *electum*. White. July. Swt. Ger. t. 238.
 — *elegans*. 3. White, red. April. 1795. Swt. Ger. t. 36.
 — *maius*. 3. White, red. June. 1795.
 — *minus*. 3. White, red. June. 1795.
 — *eriosetum*. 1. White. April. 1794. Jacq. Schoenb. t. 132.
 — *ezstipulatum*. 3. Violet. July. 1779.
 — *formosissimum*. 2. White, red. July. 1759. Swt. Ger. t. 215.
 — *Fothergillii*. 2. Scarlet. August.
 — *purpureum*. 3. Purple. August. 1810.
 — *fragrans*. 2. Variegated. July. Swt. Ger. t. 172.
 — *fulgidum*. 1. Scarlet. May. 1723. Swt. Ger. t. 69.
 — *fuscatum*. 3. Purple, red. May. 1812. Swt. Ger. t. 210.
 — *gibbosum*. 1. Green, yellow. June. 1712. Swt. Ger. t. 61.
 — *glaucum*. 3. White, red. July. 1775. Swt. Ger. t. 57.
 — *glomeratum*. 1. White. July.
 — *glutinatum*. 3. Pale rose. May. 1777. B. M. t. 143.
 — *grandiflorum*. 3. White, red. May. 1794. Swt. Ger. t. 29.
 — *gratum*. 2. Pink. June.
 — *graveolens*. 3. Purple. May. 1774.
 — *variegatum*. 3. Purple. May.
 — *grossularioides*. 2. Pink. June. 1781.
 — *hepaticifolium*. Rose. July. 1791.
 — *Hermanniaefolium*. 3. Pink. May. Jacq. Ic. t. 545.
 — *heterogamum*. 2. Pink. July. 1786.
 — *hirtum*. Rose. July. 1768. Swt. Ger. t. 113.
 — *hispidum*. 3. Purple. June. 1790.
 — *holosericeum*. 1. Dark purple. April. 1820.
 — *hybridum*. 2. Lilac. July. 1732. Swt. Ger. t. 63.
 — *imbricatum*. 3. Lilac, purple. June. 1800. Swt. Ger. t. 65.
 — *incisum*. 3. White, red. June. 1791. Swt. Ger. t. 93.
 — *inodorum*. 1. Pale purple. July. N. Holland. 1796. Trailer. Swt. Ger. t. 56.
 — *inguinans*. 2. Scarlet. July. 1714.
 — *laevigatum*. 3. White, red. June.
 — *lanceolatum*. White, purple. July. 1775.
 — *late-ripes*. 2. Pale purple. July. 1787.
 — *albo marginatum*. 2. Pale red. August. 1787.
 — *roseum*. 2. Red. August. 1787.
 — *zonatum*. 2. Pale purple. August. 1787.

- P. lateritium*. 1½. Red. July. 1800.
- *lazum*. 1. White. May. 1821.
- *leptopetalum*. 2. Red. June. 1800.
- *littoralis*. Swan River. 1837.
- *longicaule*. 1. Pale rose. June. Trailer.
- Jacq. Ic. t. 533.
- *maculatum*. Blush. July. 1796.
- *macrobotryum*. 2. Pale red. July. 1812.
- *microanthum*. Scarlet. September.
- *monstrum*. 2. Red. July. 1784. Swt.
- Ger. t. 13.
- *myrrhifolium*. 1½. White, red. June. 1696.
- *nigriscens*. 4. Purple. May. 1777.
- *nothum*. 2. Pink. May.
- *obtusifolium*. 3. Purple. June. Swt. Ger.
- t. 25.
- *odoratissimum*. 2. Pink. July. 1724. Swt.
- Ger. t. 299.
- *oxyphyllum*. 2. White. August. 1800.
- *pauidum*. 3. Pink. June.
- *papilionaceum*. 3. Pale white. June. 1724.
- Swt. Ger. t. 27.
- *patentissimum*. 3. Lilac, white. June. 1820.
- *patulum*. 3. Pale blood. June. 1821.
- Jacq. Ic. t. 541.
- *pedicellatum*. 1. Green, brown. July. 1822.
- Swt. Ger. t. 250.
- *pendulum*. ½. Red. May. Trailer.
- *pericillatum*. 3. White, red. July. 1794.
- *permultiplum*. 1½. Violet. July.
- *principisæ*. 3. Dark pink. August. 1820.
- Swt. Ger. t. 139.
- *primitivum*. 1½. Pink. June. 1800.
- *pustulosum*. 3. White, pink. June. 1820.
- Swt. Ger. t. 11.
- *quercifolium*. 3. Purple. May. 1774.
- *repinatifidum*. 4. Purple. May. 1774.
- *quina*. 1. Pale yellow. May. 1793.
- B. M. t. 547.
- *quinquelobum*. 3. Red. July. 1820.
- *quinquevulnerum*. 1½. Dark purple. July.
- 1796. Swt. Ger. t. 161.
- *radia*. ½. Dark purple. July. 1790.
- *reniforme*. 2. Purple. July. 1791. B. M.
- t. 493.
- *rigidum*. Whitish. July.
- *rubens*. 3. Purple. June.
- *rubifolium*. 3. White. May. 1798.
- *rubrocinatum*. 3. Purple, white. May.
- 1774.
- *rugosum*. 3. Pink, lilac. July. 1800.
- *saniculaefolium*. 3. Pale red. July. 1806.
- *scabrum*. 3. White, red. June. 1775.
- Jacq. Ic. t. 542.
- *scandens*. 3. Rose. July. 1800.
- *scutatum*. White. August. 1701. Swt.
- Ger. t. 95.
- *semitrilobatum*. 3. Purple. May. 1800.
- *sisonifolium*. White, veins red. S. Africa.
- 1868.
- *sororium*. 3. White, red. May.
- *speciosum*. 3. Purple. May. 1794.
- *spinosum*. 3. Pink. May. 1795.
- *spirium*. 2. Violet. May.
- *staphisagrioïdes*. 1½. Purple. July. 1825.
- Swt. Ger. t. 498.
- *stenopetalum*. 1½. Scarlet. June. 1800.
- *Synnotii*. ½. Lilac. August. 1825.
- *tenuifolium*. 3. Purple. June. 1768.
- *ternatum*. 3. Pink. June. 1789. B. M.
- t. 413.
- *tetragnomum*. 2. Pink. July. 1774. B. M.
- t. 136.
- *variegatum*. 2. Pink. July. 1774.
- *tomentosum*. 3. White. June. 1790. B.
- M. t. 518.
- *tricolor*. 1½. White, purple. July. 1791.
- B. M. t. 240.
- *tricuspidatum*. 3. White, purple. June.
- 1780.
- *tripartitum*. 3. Pale yellow. June. 1789.
- Swt. Ger. t. 115.

- P. unicolorum*. 2. Crimson. June.
- *uniflorum*. 3. June. 1800.
- *variegatum*. 3. White, red. June. 1812.
- *verbasciflorum*. 1½. Lilac. July. 1811.
- *viscosissimum*. 3. Lilac, white. June. 1820.
- Swt. Ger. t. 118.
- *vitifolium*. 3. Purple. July. 1724.
- *Watsonii*. 3. Purple. May. Swt. Ger.
- t. 130.
- *Willdenovii*. 2. White-veiny. June.
- *zonale*. 2. Scarlet. August. 1710.
- *coactæ*. 3. Scarlet. August. 1710.
- *crystallinum*. 3. Scarlet. August. 1710.
- *marginatum*. 2. Scarlet. August.

Pelargonium Culture. — *Progenation by Seed* is the only way to raise new 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 hybridize, let the one to bear the seed possess the property 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 hybridizing 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 a quarter of an 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 two-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 four and a half 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 March to August; 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 cocoa-nut fibre, to plunge the cutting-pots. The cocoa-nut fibre serves to absorb the moisture from the soil 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—five 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 re-potted, 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 five-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 two 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 two 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, one and a half 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. The cuttings are made very short, with a portion of the old wood at the bottom of each. Very little water is given till they callus, 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 a quarter of an 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 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 effec-

tually. 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 two or three 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 free 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 fifty feet long, and twenty feet wide. This will allow a stage in the centre ten feet wide, walks round it two and a half feet wide, and a platform all round two and a half feet broad. This will leave the stage ten feet wide, and forty feet long, which will be ample space 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, three or four 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 two feet high, on a base of three 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 one 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 re-potting 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 re-potting. 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.

Pelecyphora. (From *pelekyphorus*, hatchet-bearing; in allusion to some fancied resemblance of the tubercles to a hatchet. Nat. ord., *Cactaceæ*; Tribe, *Echinocactæ*. Allied to *Mammillaria*.)

Greenhouse succulent perennial. For cultivation, see under CACTUS.

- P. aselliformis*. †. White, rose. June. Mexico. 1843. III. Hort. 1858, p. 186.
- *co-necolor*. †. Purple. June. Mexico. 1873. B. M. t. 6061.

Pelexia. (From *peleza*, a helmet; in reference to the shape of the back sepal. Nat. ord., *Orchidææ*; Tribe, *Neottiaæ-Spirantheæ*.)

Stove terrestrial orchid, allied to GOODYERA, to which refer for cultivation.

- P. olivacea*. Olive-green; lip white. Andes. 1891.
- *setacea*. 1-2. Greenish. West Indies. 1834. Syns., *Collea calcarata*, *Neottia calcarata*. B. M. t. 3403, and *Stenarrhynchus calcaratum*.
- *spiranthoides*. 1-3. Greenish, white. West Indies. 1823. B. R. t. 985.
- *triloba*. Green. Brazil. 1870.

Pelican Flower. *Aristolochia grandiflora*.

Peliosanthus. (From *pelios*, livid, and *anthos*, flower. Nat. ord., *Hæmodoraceæ*; Syn., *Teta*.)

Stove perennial herbs, with creeping rhizomes. Propagated by suckers.

- P. alvida*. White. Summer. Malay Peninsula. 1885. B. M. t. 7110.
- *humilis*. 1. Greenish. May. Eastern Himalayas. 1809. B. M. t. 1532.
- *Teta*. 1. Greenish. April. Eastern Himalayas. 1807. B. M. t. 1302.

Pellæa. (From *pellos*, dark-coloured; referring to the stripes. Nat. ord., *Filices—Polypodiaceæ*.)

Stove and greenhouse. See FERNS.

STOVE.

- P. Bridgésii*. See *Platyloma*.
- *cordata*. Tropical America. 1820.
- *flexuosa*. Tropical America. 1838.
- *geranioides*. E. Indies.
- *intramarginalis*. †. Mexico. 1841.
- *ornithopus*. See *Platyloma*.
- *ternifolia*. Tropical America. 1841.

GREENHOUSE.

- P. atropurpurea*. N. America. 1770.
- *calomelinosa*. S. Africa. 1830.
- *hastata*. S. Africa. 1822.
- *Wrightiana*. Mexico. 1865. Nearly hardy.

Pellionia. (Named after A. M. J. Alphonse Pellion, an officer in Freycinet's voyage round the world. Nat. ord., *Urticaceæ*; Tribe, *Urticeæ*. Allied to *Pilea*.)

Stove perennial creeping herb with ornamental foliage. Seeds, divisions, or cuttings. Rich sandy loam. Moist atmosphere. Summer temp., 60° to 85°; winter, 58° to 70°.

- P. Davaudana*. †. Green. Cochin China. 1830. III. Hort. t. 472. Syn., *Begonia Davauana*.
- *viridis*. Leaves bright green, with whitish blotches. 1832.
- *pulehra*. Leaves green, with blackish veins. Cochin China. 1852. III. Hort. t. 479.

Pellitory. *Parietaria officinalis*.

Pellitory of Spain. *A'nthemis Pyrethrum*.

Peltaandra. Arrow Arum. (From *pelte*, a shield, and *aner*, a male; re-

ferring to the shape of the stamens. Nat. ord., *Aroideæ*.)

Hardy perennial. Marsh herb.

P. virginica. 1. June. N. E. America. 1759.

Pelta'ria. (From *pelte*, a little shield; referring to the shape of the seed-pod. Nat. ord., *Cruciferae*; Tribe, *Isatideæ*.)

Hardy, herbaceous perennials. Seeds; divisions. Common soil.

P. allia'cea. 1. White. June. Austria. 1601.
— *glastifolia*. 1. White. June. Syria. 1823.

Pelto'phorum. (From *pelte*, a small shield, and *phoreo*, to bear; alluding to the shape of the stigma. Nat. ord., *Leguminosæ*; Tribe, *Eucæsalpineæ*.)

Stove trees. For cultivation, see ACACIA, stove species. One of the species yields the orange-coloured Braziletta wood.

P. Linna'i. 20. Yellow. Jamaica.

Peltostig'ma. (From *pelte*, a small shield, and *stigma*, a stigma; in allusion to the swollen stigma. Nat. ord., *Rutaceæ*; Syn., *Pachystigma*.)

Stove evergreen shrub. Cuttings under a bell glass in heat. Sandy loam and fibry peat.

P. pteleoides. 10. Green. February. Jamaica. 1844. Syn., *Pachystigma pteleoides*.

Penæ'a. (Named after *P. Pena*, a German botanist. Nat. ord., *Penæaceæ*.)

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. fruticulosa. See *Stylopteris fruticulosa*.
— *imbricata*. B. M. t. 2809. See *Sarcocolla imbricata*.

— *lateriflora*. 1. June. 1825. Syn., *Endonema Thunbergii*.

— *marginata*. 1½. June. 1816. Syn., *Geissoloma marginata*.

— *muricata*. 2. Yellow. June. 1787.

— *myrtoides*. 2. June. 1816.

— *Sarcocolla*. See *Sarcocolla Linnaei*.

— *squamosa*. B. E. t. 106. See *Sarcocolla squamosa*.

Pennise'tum. (From *penna*, a feather, and *seta*, a bristle; the long bristles of the flower-spikes are feathered. Nat. ord., *Gramineæ*; Tribe, *Panicææ*.)

Greenhouse, or half-hardy grasses, mostly annuals. They all flower in July and August. Seeds. Common soil.

P. barbatum. 1. E. Indies. 1823.

— *cenchroides*. 1½. S. Africa. 1777.

— *compressum*. 1. Australia. 1820.

— *dichotomum*. 2. Egypt. 1823.

— *holcoides*. 1. E. Indies. 1816.

— *giganteum*. 5-6. 1884.

— *latifolium*. 10. Monte Video. 1869. Syn.,

Gymnothrix latifolia.

— *longistylum*. 1½. Purplish. Abyssinia.

— *violaceum*. Metallic violet. 1888.

— *nepalense*. 2. India. 1822.

— *orientale*. 1. Guiana. 1817.

— *polystachyum*. 2. E. Indies. 1824.

— *setosum*. 2. Brazil. 1817.

— *violaceum*. 1. Senegal. 1820.

— *triflorum*. White or purple. India. 1891.

P. villosum. White. Abyssinia. Le Jard. 1891, p. 213.

Penny Grass. *Rhina'nthus cri'stagalli*.

Penny-royal. *Me'ntha Pule'gium*.

Penny-wort, or Penny-leaf. *Cotyle'don Umbi'licus*, *Hydroco'tyle vulgaris*, *Lina'ria Cymbala'ria*, *Sibitho'ropia europæa*.

Penstemon. See **Pentstemon**.

Pentachæ'ta. (From *pente*, five, and *chaita*, a bristle; the pappus has five bristles at its base. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*.)

Hardy herb. Sandy loam in a sunny spot. Seeds.

P. aurea. ½. Yellow. California. 1883. Gf. t. 1153.

Pentade'sma. (From *pente*, five, and *desma*, a bundle; referring to the disposition of the stamens. Nat. ord., *Guttiferae*; Tribe, *Moronobææ*. Allied to *Garcinia*.)

Stove evergreen tree. Cuttings of ripe shoots in sand, under a bell-glass, and in bottom-heat; fibry loam and sandy peat. Winter temp., 60°; summer, 60° to 90°.

P. butyrea'cea. 30. November. Sierra Leone. 1822.

Pentago'nia. (From *pente*, five, and *gonia*, an angle; in allusion to the divisions of corolla. Nat. ord., *Rubiaceæ*; Tribe, *Catesbæææ*.)

Stove shrub. For cultivation, see CINCHONA.
P. Wendlandi. Yellow. Central America. 1861. The foliage very fine. B. M. t. 5230.

Pentalo'phus. (From *pente*, five, and *lophos*, a crest. Nat. ord., *Boraginææ*.)

Hardy, herbaceous perennial. Seeds or divisions; common soil.

P. longiflorus. ½. Yellow. June. Missouri. 1812. Syn., *Batschia longiflora*.

Penta'pera. (From *pente*, five, and *pera*, a bag; in allusion to the five-celled ovary. Nat. ord., *Ericaceæ*; Tribe, *Ericææ*. Closely allied to *Erica*.)

Half-hardy evergreen shrub. Sandy loam and peat.

P. sicula. 1-2. Pink. Sicily. B. M. t. 7030. Syn., *Erica sicula*.

Penta'petes. (From *pente*, five, and *petalon*, a petal; five petals in the flower. Nat. ord., *Sterculiaceæ*; Tribe, *Dombeyææ*. 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 temperature.

P. Erythronylon. B. M. t. 1000. See *Trochetia grandiflora*.

— *ovata*. 2. New Spain. 1805.

— *phœnicea*. 2. India. 1690.

Pentapterygium. (From *pente*, five, and *pterygion*, a small wing; alluding to the winged calyx. Nat. ord., *Vacciniaceæ*; Tribe, *Thibaudieæ*.)

Greenhouse evergreen shrubs. Cuttings in sand under a bell-glass. Sandy loam and peat. *P. florum*. Yellow. Bootan. B. M. t. 4910. — *rugosum*. White, red, green. May. Bootan. B. M. t. 5198. — *serpens*. Scarlet. May. Eastern Himalayas. B. M. t. 6777. Epiphytic.

Pentara'phia. (From *pente*, five, and *raphis*, a needle; alluding to the form of the open calyx. Nat. ord., *Gesneraceæ*; Tribe, *Gesnerææ*.)

Warm greenhouse plants. For cultivation, see *GESNERA*.

P. calycosa. 1½. Red, white. Jamaica. 1824. Syn., *Conradia calycosa*. Ic. Pl. t. 689-690. — *cubensis*. 2. Scarlet. July. Cuba. 1854. Rev. Hort. 1847, p. 361. — *floribunda*. Red. Summer. Cuba. 1878. — *libanensis*. ½. Crimson. June. Jamaica. 1847. Syn., *Gesnera libanensis*. B. M. t. 4380, and *Rhytidophyllum floribundum*. Fl. Ser. t. 178. — *longiflora*. See *Conradia longiflora*. — *neglecta*. ½. Scarlet. September. Jamaica. 1847. — *verrucosa*. Scarlet. May. Cuba. Paxt. Fl. Gard. iii. p. 30, fig. 250.

Pentas. (From *pente*, five; referring to the number of petals and stamens. Nat. ord., *Rubiaceæ*; Tribe, *Hedyotideæ*.)

Stove evergreens, from South Africa, with pink flowers. Cuttings of young shoots in sandy soil, in a hotbed; sandy loam and fibry 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. carnea. 1½. May. 1842. B. M. t. 4086. B. R. 1844, t. 32. — — *kermesina*. Carmine-rose, violet. Rev. Hort. 1870, p. 130. — *parviflora*. 2. May.

Pentlandia. (Named after J. P. Pentland, Esq., consul-general in Peru. Nat. ord., *Amaryllidææ*.) See *Urceolina*.

Pentstemon. (From *pente*, five, and *stemon*, a stamen; four fertile and one abortive stamen. Nat. ord., *Scrophulariaceæ*; Tribe, *Cheloneæ*. 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. *Gentianoides* and its varieties, *coccinea* and *alba*, 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. atropurpureus. 1½. Dark purple. July. Mexico. 1827.

P. azureus. ½. Blue. June. Mexico. 1848. Paxt. Fl. Gard. t. 64. — *baccharifolius*. 1½. Crimson. August. Texas. 1851. B. M. t. 4267. — *campanulatus*. 1½. Lilac, purple. June. Mexico. 1794. Syn., *Chelone angustifolia*. *C. atropurpurea*, *C. campanuloides*, Andr. Rep. t. 40. *C. elegans*, and *C. rosea*. — *Cobaea*. 2½. Pale purple. Texas. 1835. B. M. t. 3465. — *cordifolius*. Orange. July. California. 1848. Shrubby. — *gentianoides*. 4. Purplish-blue. July. Mexico. 1846. Syn., *Chelone gentianoides*. B. R. 1838, t. 3. — *Hartwegii*. 2½. Double. Purple. June. Mexico. 1825. — — *diaphanum*. 2½. Rose. Scarlet. July. Mexico. 1843. — *Kunthii*. 1½. Purple. Mexico. 1825. — *minuta*. 1. Vermilion, rose. July. Mexico. 1846. B. R. 1847, t. 14. — *pulchellus*. 1½. Lilac. June. Mexico. 1827. B. C. t. 1438. — *roseus*. 1½. Rose. Mexico. 1825. — *Torreyi*. Scarlet. California. 1861. — *Wrightii*. 2. Rose. June. Texas. 1850. B. M. t. 4601.

HARDY HERBACEOUS.

P. acuminatus. Purple. July. N. Amer. 1827. B. R. t. 1285. — *albidus*. ½. White. July. Missouri. 1823. — *angustifolius*. 1½. Lilac, purple. August. Louisiana. 1811. B. R. t. 1122. — *antirrhinoides*. Yellow. California. 1874. — *argutus*. 3. Blue. Columbia. 1825. — *attenuatus*. Cream. July. N. Amer. 1827. B. R. t. 1295. — *barbatus*. 3. Scarlet. July. Mexico. 1794. Syn., *Chelone barbata*. B. R. t. 116, and *C. ruelliioides*. Andr. Rep. t. 34. — — *carneus*. 3. Flesh-coloured. July. Mexico. B. R. 1839, t. 21. Syn., *Chelone barbata*, var. *carnea*. — — *major*. 4. Orange-striped. June. Syn., *Chelone barbata*, var. *major*. — *breviflorus*. 3. White, pink. September. California. B. R. t. 1946. — *centranthifolius*. 7. Scarlet. September. California. 1824. B. R. t. 1737. Syn., *Chelone centranthifolia*. B. R. t. 1737. — *cœruleus*. ½. Blue. Missouri. Syn., *Chelone cœrulea*. — *confertus*. 2. Pale yellow. July. N. Amer. 1827. — *cordifolius*. 1. Bright scarlet. June. 1848. B. M. t. 4497. — *crassifolius*. 1. Blue. June. N. Amer. B. R. 1838, t. 16. — *cristatus*. 1½. Violet. Missouri. Syn., *Chelone cristata*. — *cyannthus*. Light blue. May. N. Amer. B. M. t. 4464. — *deustus*. 1. Cream. N. Amer. 1827. B. R. t. 1318. — *diffusus*. 1½. Purple. September. N. Amer. 1826. B. R. t. 1132. — *digitalis*. 1½. White. August. Arkansas. 1824. Syn., *Chelone digitalis*. Swt. Fl. Gard. t. 120. — *Eatonii*. 1½. Crimson-scarlet. California. 1883. — *eriantherus*. ½. Purple. August. Louisiana. 1811. Syn., *Chelone erianthera*. — *glaber*. 1½. Dark purple. August. Louisiana. 1811. B. M. t. 1672. — — *stenosepalus*. Violet-purple. N. America. 1875. — *glaberrimus*. 2. Blue. Columbia. 1835. — *glandulosus*. 2. Pale blue. June. N. Amer. 1827. B. R. t. 1262.

- P. glaucus*. 1. Pale lilac. July. N. Amer. 1827. B. R. t. 1286.
- *Gordo'ni*. 1½. Sky blue. June. Rocky Mountains. 1845. B. M. t. 4319.
- *glandulosus*. Blue. California. 1874.
- *gracilis*. 1. Blue. August. N. Amer. 1824. B. M. t. 2945.
- *grandiflorus*. Purple. July. N. Amer. 1811.
- *grandifolius*. 3. Lilac. Rocky Mountains. 1865.
- *heterophyllus*. 1½. Red. July. California. 1834. B. R. t. 1899.
- *hirsutus*. 1. Pale purple. August. N. Amer. 1758.
- *humilis*. ¾. Blue, red. June. Rocky Mountains. 1874.
- *Jeffreya'nis*. 1. Blue. August. California. 1858.
- *labrusus*. 3-4. Scarlet. August. 1883. B. M. t. 6738.
- *laevigatus*. 2. Lilac. August. N. Amer. 1776. B. M. t. 1425.
- *Lobbiana*. 2. Yellow. California. 1861. Syn., *Lepidostemon pentstemonoides*.
- *Mackaya'nis*. 1. Purple, yellow. August. Ohio. 1834. Kn. and West. t. 74.
- *Menziesii* Douglasii. 1. Lilac-purple, pink. June. Syn., *P. crassifolius*, B. R. 1838, t. 16.
- *Robinsonii*. Lilac-rose. Rocky Mountains. 1872.
- *Scouleri*. 3. Purple. May. N. Amer. 1827. Syn., *P. Scouleri*.
- *Murrayanus*. 3. Scarlet. August. St. Felipe. 1835. B. M. t. 3472.
- *ovatus*. 4. Blue. July. Columbia River, N. Amer. 1826.
- *Palmeri*. 3-5. Rosy-lilac, purple. California. 1873.
- *procerus*. 1. Purple. July. N. Amer. 1827. B. M. t. 2954.
- *pruinatus*. 1. Blue. June. N. Amer. 1827. B. R. t. 1280.
- *pubescens*. 1½. Pale purple. August. N. Amer. 1758. B. M. t. 1424. Syn., *Chelone hirsuta*.
- *punceris*. 1-6. Scarlet. June. Arizona. 1889.
- *Richardsonii*. 1½. Dark purple. July. Columbia. 1825. B. R. t. 1121.
- *Roezii*. 1½. Lilac. California. 1873.
- *rotundifolius*. 2. Brick-red. Mexico. G. C. 1898, iv. p. 264, fig. 31.
- *Scouleri*. B. R. t. 1277. See *P. Menziesii*, var. *Scouleri*.
- *speciosus*. 3. Blue. August. N. Amer. 1827. B. R. t. 1270.
- *spectabilis*. 3. Blue, purple. California. 1861.
- *staticifolius*. 1½. Lilac. June. California. 1833. B. R. t. 1770.
- *triphyllus*. 1½. Pale red. July. California. 1827. B. R. t. 1245.
- *venustus*. 2. Purple. June. N. Amer. 1827. B. R. t. 1309.

Pentzia. (After Charles John Pentz, a pupil of Thunberg. Nat. ord., *Compositæ*.)

A small greenhouse shrub. For culture, see TANACETUM.

P. flabelliformis. 2½. Yellow. Summer. South Africa. 1774. Syn., *Tanacetum flabelliforme*. B. M. t. 212.

Peony. *Paeonia*.

Peperomia. (From *peper*, pepper, and *omoios*, similar. Nat. ord., *Piperaceæ*; Tribe, *Piperæ*.)

Stove ornamental-leaved plants. For cultivation, see PIPER.

- P. acuminata*. Leaf ribs dark-green, red beneath. Peru. 1865.
- *argyreia foliis variegatis*. Garden variety. Wien. Gart. Zeit. 1883, p. 297, t. 3.
- *arifolia*. Leaves variegated green and grey. Brazil. 1864.
- *Botte'rii*. Green. Mexico. 1869.
- *ebu'rneae*. Leaves green, with ivory-white stalks. Columbia. 1871.
- *heterostachya*. Leaves with pale ribs. Peru. 1869.
- *maculosa*. Leaf-ribs grey, stalks spotted.
- *magnoliifolia*. Green. W. Indies. 1868.
- *marmorata*. Leaves dark green, banded and marbled with grey. S. Brazil. 1866. Syn., *P. arifolia* of some gardens.
- *microphylla*. Green. Mexico. 1860.
- *nummulariifolia*. S. Brazil. 1866. Well adapted for covering the sides of hanging baskets.
- *pellucida*. 1-1½. Green. Tropical America. 1867.
- *pellucida*. Leaves green, with a few green longitudinal bands. Brazil. 1864.
- *prostrata*. 1879.
- *puberula*. Green. Guatemala. 1870.
- *pubifolia*. Leaves with a grey central bar.
- *resediflora*. 1. White. Summer. Columbia. 1870.
- *Saundersii*. Leaves variegated green and grey. S. Brazil. 1866. Syns., *P. arifolia*, var. *argyreia* and *P. Verschaaffeltii*.
- *velutina*. Leaves dark green, with grey bands. Ecuador. 1872.

Pepinia. (Dedicated to *M. Pepin*, head gardener of the Museum of Natural History of Paris. Nat. ord., *Bromeliaceæ*; Tribe, *Pitcairniæ*.) See **Pitcairnia**.

P. aphelandrasiflora. See *Pitcairnia aphelandrasiflora*.

Pepper. *Piper*.

Peppermint. *Me'ntha piperi'ta*.

Pepper Vine. *Ampelopsis bipinnata*.

Pepperwort. *Lepidium*.

Perdicium. (Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*.) See **Trixis**.

P. brasiliense. See *Trixis auriculata*.

— *chilense*. A synonym of *Chatanthera chilensis*.

— *roseum*. A synonym of *Leuceria runcinata*.

Pereira. (After *Dr. Pereira*. Nat. ord., *Menispermaceæ*; Tribe, *Tinosporæ*.) See **Coscinium**.

P. medica. A synonym of *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., *Cactaceæ*; Tribe, *Opuntiacæ*. Allied to *Cactus*.)

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. aculeata. 5. White. October. W. Ind. 1696. B. R. t. 1928.

- P. Ble'o.* 5. Pale red. November. Mexico. 1827. B. M. t. 3478.
 — *crassicaulis*. Mexico. 1838.
 — *grandiflora*. Red. Mexico. 1838.
 — *grandifolia*. 3. Brazil. 1818.
 — *grandispina*. Mexico. 1818.
 — *longispina*. 4. S. Amer. 1808.
 — *Petitche*. Mexico. 1838.
 — *portulacaefolia*. 3. Purple. W. Ind. 1820.
 — *subulata*. Valparaiso.

Peresia. (After *Lazarus Perez*, a Spanish apothecary of the sixteenth century. Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*. Syns., *Homoianthus* and *Clarionea*.)

Hardy perennial. For culture, see CINERARIA
P. viscosa. Purple. Chili. 1863. Syn., *Homoianthus viscosus*.

Pergularia. (From *pergula*, trellis-work; referring to its quick climbing growth. Nat. ord., *Asclepiadaceæ*. Allied to *Stephanotis*.)

Stove evergreen climbers. Cuttings of firm side-shoots in sand, under a glass, and in bottom-heat; fibry loam, sandy peat, leaf-mould, and dry cow dung. Winter temp., 55° to 65°; summer, 60° to 85°.

- P. glabra*. See *Vallis pergilana*.
 — *minor*. 8. Yellow, green. June. E. Ind. 1790. Andr. Rep. t. 134.
 — *odoratissima*. 15. Green. June. E. Ind. 1784. Andr. Rep. t. 185.
 — *sanguinolenta*. 6. Green, yellow. July. Sierra Leone. 1822. B. M. t. 2532.

Pericome. (From *peri*, around, and *kome*, hair. Nat. ord., *Compositæ*; Tribe, *Helenoideæ*.)

Hardy annual.
P. caudata. 3-4. Golden-yellow. October. Colorado. 1880.

Perilla. (Unexplained. Nat. ord., *Labiatae*; Tribe, *Satureineæ*.)

Half-hardy annuals. Seeds. For cultivation, see ANNUALS.

- P. arguta atropurpurea*. See *P. nankinenses*.
 — *heteromorpha*. See *P. ocimoides*.
 — *nankinenses*. Leaves dark-purple. China. Syn., *P. arguta*, var. *atropurpurea*.
 — *ocimoides*. 3. White. August. E. Indies. 1770. Syn., *P. heteromorpha*.
 — *crispa*. 3. Purple. August. China.

Perilomia. (From *peri*, around, and *loma*, a margin; referring to the membranous border of the fruit. Nat. ord., *Labiatae*; Tribe, *Stachydeæ*. 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. scutellarioides*. 3. Purple. August. Peru. 1829. Syn., *P. ocimoides*. B. R. t. 1394.

Periphragmos. (From *peri*, around, and *phragmos*, a fence. Nat. ord., *Polemoniaceæ*.) See *Cantua*.

- P. dependens* and *P. uniflorus*. Synonyms of *Cantua ovata*.
 — *flesuosa* and *P. pyriformis*. Synonyms of *Cantua pyriformis*.

Periploca. (From *periploke*, an in-

tertwining; referring to the habit of the plant. Nat. ord., *Asclepiadaceæ*; Tribe, *Periploceæ*.)

Hardy deciduous twiners. Layers and cuttings under a glass, during summer and autumn. Any good soil will do. *Græca* will soon cover an arbour or wall. The tender species are not worth culture.

- P. africana*. Purple, white. Autumn. 1726. Andr. Rep. t. 557.
 — *angustifolia*. 6. Purplish. South Europe. 1800.
 — *græca*. 10. Brown. July. Syria. 1597. B. M. t. 2289.

Peristeria. Dove Flower. (From *peristera*, a dove; dove-like appearance of the column. Nat. ord., *Orchideæ*; Tribe, *Vandæe-Stanhopeæ*. Allied to *Acineta*.)

Stove orchids. Division, or separating the pseudo-bulbs, as growth commences. See ORCHIDS.

- P. aspersa*. Yellow-brown, dotted with brownish-red; lip dark crimson. Venezuela. Lind. t. 267.
 — *Barkeri*. Bate Orch. t. 8, B. M. t. 4203. See *Acineta Barkeri*.
 — *cerina*. B. R. t. 1953. See *Lycomormium cerinum*.
 — *elata*. 4. White. July. Panama. 1826. B. M. t. 3116.
 — *ephippium*. Yellowish or white. Western S. America. G. C. 1883, xx. p. 198.
 — *expansa*. White. July. Panama. 1839.
 — *fulva*. A synonym of *Acineta Humboldtii*.
 — *guttata*. Kn. and West, t. 70. See *Lycomormium guttatum*.
 — *Humboldtii*. B. R. 1843, t. 18, and var. *fulva*. Synonyms of *Acineta Humboldtii*.
 — *læta*. Bright yellow, dark purple. G. C. 1887, ii. p. 616.
 — *lentiginosa*. Yellow. May. Guiana. 1837.
 — *peñula*. 1. White-spotted. September. Panama. B. M. t. 3479.
 — *Rossiana*. Yellowish. G. C. 1889, v. p. 8.
 — *setigera*. Yellowish. G. C. 1887, ii. p. 272.
 — *stapelioides*. Yellow, brown. May. Spanish Main. 1839.

Peristrophe. (From *peristrophe*, turning round because the corolla is twisted so as to be upside down. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*. Allied to *Hypoestes*.)

Stove herbaceous or sub-shrubby perennials. For cultivation, see JUSTICIA.

- P. lanceolaria*. Purple. Moulmein. 1866. B. M. t. 5566. Syn., *Justicia lanceolaria*.
 — *saticifolia*.
 — *au'neo-variegata*. Rose; leaves with central feathered golden stripe. Java. 1871.
 — *speciosa*. 4. Pale purple, carmine. Winter. India. 1826. Syn., *Justicia speciosa*. B. M. t. 2722.
 — *tinctoria*. 1. Pink. August. India. 1815. Syn., *Justicia Roxburghiana*.

Peritoma. (From *peritome*, a cutting round about. Nat. ord., *Cappariaceæ*.) See *Cleome*.

P. aurea See *Cleome lutea*.

Periwinkle. *Vi'nea*.

Pernettia. (Named after *Don Per-netty*, author of "A Voyage to the

Falkland Islands." Nat. ord., *Ericaceæ*; Tribe, *Arbuteæ*. Allied to *Gaultheria*.)

Hardy evergreen, white-flowered shrubs. Seeds and layers in spring; peat border; requires similar treatment to the tenderer Azaleas and Rhododendrons.

- P. angustifolia*. 2. June. Valdivia. 1834.
B. M. t. 3889. A variety of *P. mucronata*.
— *ciliaris*. 3. Mexico. Journ. Hort. Soc. vi. p. 268.
— *Cumini ngii*. May. Mexico.
— *floribunda*. Berries crimson. Extra-tropical S. America. G. C. 1882, xviii. p. 648, fig. 113.
— *fulrens*. White. March. Chili.
— *mucronata*. 6. May. Magellan. 1828. B. R. t. 1675. Syn., *Arbutus mucronata*, B. M. t. 3093.
— *Pentlandii*. White; fruit blue-black. June. Andes. 1875. B. M. t. 6204.
— *piloosa*. April. Mexico. 1839.
— *prostrata*. May.
— *pubula*. 4. June. Magellan. 1825.

Peronia. A synonym of *Thalia*.

Peronospora. See Potato Disease.

Persea. Avocado or Alligator Pear. (Name of a tree from Theophrastus. Nat. ord., *Laurinææ*; Tribe, *Perseaceæ*.)

Stove evergreen tree. 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 fibry peat. Winter temp., 50° to 60°; summer, 60° to 90°.

- P. gratissima*. 40. Green. W. Ind. 1739.
B. M. t. 4580.

Persian Sun's Eye. *Tuli'pa o'culus solis*.

Persica. Peach. (From *Persia*, its supposed native place. Nat. ord., *Rosaceæ*; Tribe, *Prunææ*.)

Closely allied to *Amygdalus*. See NECTARINE and PEACH. All bloom in April.

- P. Davidiana*. Pale rose or white. China. Rev. Hort. 1872, p. 75.
— *laevis*. See *P. vulgaris*, var. *laevis*.
— *vulgaris*. 15. Red. Persia. 1562. Syn., *Prunus Persica*. Peach.
— *alba*. 14. White. Persia.
— *compressa*. 15. Red.
— *fo're-plé'no*. 15. Red. Persia.
— *fo'tis variegat'is*. 15. Persia.
— *fru'cto plé'no*. 15. Red. China. 1845.
— *hispanica*. White. Spain. 1847.
— *laevis*. 15. Red. Persia. 1562. Syns., *P. laevis* and *Amygdalus persica*. Nectarine.
— *pe'ndula*. White. 1842.
— *sanguinea plé'na*. 15. Red. China. 1845.

Persimmon. *Diospyros virginiana*-na.

Persoonia. (Named after C. H. Persoon, a distinguished botanist. Nat. ord., *Proteaceæ*; Tribe, *Persooniææ*.)

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; fibry loam and

sandy peat. Winter temp., 38° to 45°; summer, 60°; a little shaded.

- P. acerifolia*. Orange. July. 1824. Syn., *P. pallida*.
— *brevifolia*. 1840.
— *chancepitius*. 4. June. 1824.
— *ferruginæa*. 3. Yellow, red. June. 1823.
— *flexifolia*. See *P. nutans*.
— *Fraseri*. See *P. saccata*.
— *heterophylla*. Swan River.
— *hirsuta*. 4. June. 1800.
— *juniperifolia*. 4. June. 1826.
— *lanceolata*. 4. June. 1791. Andr. Rep. t. 74.
— *latifolia*. 4. June. 1795. Andr. Rep. t. 280.
— *linearis*. 5. July. 1794. Andr. Rep. t. 77.
— *lucida*. June. 1824.
— *molles*. 3. July. 1826.
— *myrtilloides*. White. 1837.
— *nutans*. 3. 1824. Syn., *P. flexifolia*.
— *pa'ulida*. See *P. acerosa*.
— *pinifolia*. 4. June. 1822.
— *pruinosa*. 3. June. 1824.
— *saccata*. 2-6. July. 1837. Syns., *P. Fraseri* and *P. macrostachya*.
— *sabiceana*. 7. Pink. July. 1795.
— *sea'bra*. 4. June. 1824.
— *spathulata*. June. 1824.
— *tenuifolia*. June. 1822.
— *To'ro*. Summer. New Zealand.

Peru Balsam-tree. *Myroxylon*.

Peruvian Bark. *Cincho'na*.

Peruvian Daffodil. *Isme'ne*.

Peruvian Mastic. *Schi'nus*.

Perymenium. (Meaning not explained. Nat. ord., *Compositæ*; Tribe, *Helianthoidææ*.)

Cuttings, taken from the points of shoots, or the firm side-shoots; sandy loam and a little peat. Winter temp., 38° to 48°.

- P. Barclayana*. Copper. July. Mexico. 1830.

Pescatorea. (Commemorative. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Cyrtopodiææ*.) See *Zygopetalum*.

- P. Backhousiana*. See *Zygopetalum Backhousiana*.
— *bellæ*. See *Zygopetalum bellum*.
— *cerina*. Flor. Mag. new ser. t. 93. See *Zygopetalum cerinum*.
— *Dayana*. See *Zygopetalum Dayanum*.
— *candidula*. G. C. 1876, iii. p. 343. See *Zygopetalum Dayanum*, var. *candidulum*.
— *rhodocra*. B. M. t. 6214. See *Zygopetalum Dayanum*, var. *rhodacrum*.
— *Dormanniana*. G. C. 1881, xv. p. 330. See *Zygopetalum Dormannianum*.
— *euglossa*. See *Zygopetalum euglossum*.
— *fimbriata*. Gf. t. 1008. See *Zygopetalum fimbriatum*.
— *Gairiana*. See *Zygopetalum Gairianum*.
— *Klabochorum*. Garden, July 8, 1882. See *Zygopetalum Klabochorum*.
— *lamellosa*. B. M. t. 6240. See *Zygopetalum lamellosum*.
— *Lehmanni*. G. C. 1882, xvii. p. 45. See *Zygopetalum Lehmanni*.
— *Roëzlii*. See *Zygopetalum Roëzlii*.
— *Ruckertia*. White, purple, yellow. 1885.
— *Russelia*. See *Zygopetalum Russelianum*.
— *triumphans*. Rchb. Xen. t. 11. See *Zygopetalum triumphans*.

P. Vervœti. Flor. and Pom. 1833, p. 10.
— *Wallisii.* Fl. Ser. t. 1828. See *Zygopetalum Wallisii.*

Pesome'ria. (From *piptopesi*, to fall, and *meros*, a part: the sepals fall off soon after expansion. Nat. ord., *Orchidææ*; Tribe, *Epidendrææ-Bleticææ.* Allied to *Bletia*.) See **Phaius**.

P. tetragona. See *Phaius tetragonus*.

Petala'cte. (From *petalon*, a petal, and *acte*, a ray. Nat. ord., *Compositææ*; Tribe, *Inuloideææ.* Allied to *Antennaria*. Syn., *Petalolepis*.)

Greenhouse evergreen shrubs, from Cape of Good Hope. Cuttings of young side-shoots, getting firm at the base, in sand, under a bell-glass, in May; sandy loam and fibry peat, with pieces of charcoal, and well-drained pots. Winter temp., 38° to 48°.

P. bicolor. Purple, white. May. 1816. Syn., *Petalolepis bicolor*.
— *coronata.* White. May. 1816.

Petali'dium. (From *petalon*, a petal; referring to the conspicuous flowers. Nat. ord., *Acanthaceææ*; Tribe, *Ruellieææ.* Allied to *Ruellia*.)

Stove evergreen climber. Cuttings of shoots in April or May, in sandy loam, in a hotbed; sandy, fibry loam, and a little peat. Winter temp., 48° to 60°; summer, 60° to 80°.

P. barberiodes. 4. White. June. India. B. M. t. 4053.

Petalole'pis. (From *petalon*, a petal, and *lepis*, a scale. Nat. ord., *Compositææ*; Tribe, *Inuloideææ.*) See **Petalacte**.

P. bicolor. See *Petalacte bicolor*.

Petaloste'mon. (From *petalon*, a petal, and *stemon*, a stamen; stamens joined to the bottom of the petals. Nat. ord., *Leguminosææ*; Tribe, *Galegeææ.* Allied to *Dalea*.)

Hardy North American herbaceous perennials. Division in spring; sandy loam, and a little peat or leaf-mould.

P. ca'ndidus. 1. White. July. 1811.
— *ca'rneus.* $\frac{1}{2}$. Flesh. July. 1811.
— *corymb'sus.* $1\frac{1}{2}$. White. August. 1811.
— *foli'sus.* Rose-purple. 1882.
— *villo'sus.* Red. July. 1826.
— *viol'a'ceus.* 1. Violet. August. 1811. B. M. t. 1707.

Petasi'tes. (From *petasos*, an umbrella; alluding to the leaves. Nat. ord., *Compositææ.*)

Hardy, perennial herbs, generally covered with white tomentum.

P. fra'grans. $\frac{1}{2}$. White. February. S. W. Europe. 1806. Syn., *Tussilago fragrans*. B. M. t. 1388.
— *fr'i'gida.* $\frac{1}{2}$. White. April. Arctic regions. 1778. Syn., *Tussilago frigida*.
— *ni'va.* 1. White. Europe. 1713.
— *vulga'ris.* $\frac{1}{2}$ - $1\frac{1}{2}$. Yellow. March. Britain. Eng. Bot. ed. 3, t. 783-4. Syns., *Tussilago hybrida* and *T. Petasites*.

Petaso'stylis. (Derivation uncer-

tain. Nat. ord., *Gentianaceææ*; Tribe, *Chironieææ.*) See **Leianthus**.

P. nigre'scens. See *Leianthus nigrescens*.

Petive'ria. (Named after *J. Petiver*, an English naturalist. Nat. ord., *Phytolaccæææ*; Tribe, *Rivineææ.*)

Stove evergreen, West Indian, white flowered shrub. 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. 2. June. 1737.

— *octa'ndra.* A synonym of *P. alliacea*.

Pet'rea. (Named after *Lord Petre*. Nat. ord., *Verbenaceææ*; Tribe, *Verbeneææ.* 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. 10. Blue. S. Amer. 1823. Syn.,
P. erecta. B. C. t. 1606.

— *ere'cta.* See *P. arborea*.

— *macrosta'chya.* 20. Lilac. June. S. Amer.

Twiner. Syn., *P. Stapelieææ.*

— *rufo'sa.* 10. Blue. Caraccas. 1824.

— *Stape'lieææ.* Violet-purple, yellow. June. Paxt.

Mag. iv. p. 199.
— *volu'bilis.* 20. Purple. July. Vera Cruz. 1733. Twiner. B. M. t. 628.

Petro'bium. (From *petros*, a rock, and *bio*, to live; rock inhabiting. Nat. ord., *Compositææ.*)

Ornamental stove tree. Sandy loam. Cuttings. *P. arbo'reum.* Yellow. June. St. Helena. 1816.

Petroca'llis. (From *petros*, a rock, and *kalos*, beautiful; pretty rock-plant. Nat. ord., *Crucifereææ*; Tribe, *Alyssineææ.*) See **Draba**.

P. pyrena'ica. B. C. t. 635. See *Draba pyrenaica*.

Petroca'rya. (From *petros*, stone, and *carya*, the walnut. Nat. ord., *Rosaceææ.*) See **Parinium**.

P. campe'stris. See *Parinium campestre*.

Petroco'ptis. A section of **Lychnis**.

Petro'phila. (From *petros*, a rock, or stone, and *phileo*, to love; referring to their natural habitation. Nat. ord., *Proteaceææ*; Tribe, *Proteæææ.* 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; fibry, rather tenacious loam, and a little peat. Winter temp., 88° to 48°.

P. acicula'ris. 2. May. B. M. t. 3469. Syn.,
P. filifolia.

— *brevifo'lia.* B. E. t. 1839. See *P. media*.

— *fastigia'ta.* 5. July. 1820.

— *filifo'lia.* See *P. acicularis*.

— *glandul'i'gera.* See *P. Serrurieææ.*

— *heterophy'lia.* W. Australia.

— *juncifo'lia.* See *P. media*.

— *me'dia.* Syns., *P. brevifolia* and *P. junci-*

folia.

- P. pedunculata*. 4. July. 1824.
 — *puiche'lla*. 5. July. 1790. Syn., *Protea*
puichella. B. M. t. 796.
 — *ri'gida*. 5. June. 1823.
 — *Serru'ria*. 3. May. 1840. Syn. *P. glandu-*
liger.
 — *terretifolia*. 4. July. 1824.
 — *trifida*. 4. July. 1820.

Petroselinum sativum. A synonym of **Carum Petroselinum**.

Pette'ria. (After Franz Petter, a botanical traveller in Dalmatia. Nat. ord., *Leguminosæ*.)

Hardy shrub, requiring the same culture as **CYTISUS**.

- P. ramenta'cea*. 10. Yellow. May. Dalmatia. 1840. Syn., *Cytisus Weidenii*. B. R. 1843, t. 40.

Pettigree or Pettigree. *Ru'scus aculeatus*.

Petty-Whin. *Geni'sta a'nglica*.

Petu'nga. (Its Indian name. Nat. ord., *Rubiaceæ*; Tribe, *Gardenieæ*.)

Stove evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass, and in a slight bottom-heat; sandy loam and fibry peat. Winter temp., 50° to 60°; summer, 60° to 80°.

- P. Roxbu'rgii*. 3. White. May. E. Ind. 1818.

Petu'nia. (From *petun*, Brazilian name for tobacco, to which *Petunia* is allied. Nat. ord., *Solanaceæ*; Tribe, *Salpiglossideæ*.)

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. acuminata*. See *Nicotiana acuminata*.
 — *compacta elegantissima*. Mauve. 1881.
 — *intermedia*. 1. Yellow, purple. August. Buenos Ayres. 1832. B. R. t. 1931. Syn., *P. linearis*, *Paxt. Mag. v. p. 219*, *Nierembergia linearis*, and *Salpiglossis linearis*. B. M. t. 3256.
 — *meled'gris*. White, blue. 1849. A hybrid? Fl. Ser. t. 550.
 — *nyctaginiflora*. 4. White. August. S. Amer. 1823. B. M. t. 2552.
 — *phœni'cea*. 2½. Crimson, purple. June. Buenos Ayres. 1831.
 — *punctata*. Deep blue, white, rosy crimson. 1844. *Paxt. Mag. xi. p. 7*.
 — *viola'cea*. Rose, purple. August. Buenos Ayres. 1831. B. M. t. 3556. Syn., *Nierembergia phœnicea* and *Salpiglossis integrifolia*. B. M. t. 3113.

Peuce'danum. (A name used by Hippocrates. Nat. ord., *Umbellifereæ*. Syn., *Pastinaca*.)

For culture, see **PARSNIP**.

- P. sativum*. 2. Bright yellow. July. Britain. Syn., *Pastinaca sativa*. Eng. Bot. ed. 3, t. 612.

Peu'mus. (From the Chilian name. Nat. ord., *Monimiaceæ*. Syn., *Boldoa*.) Greenhouse, evergreen tree. Sandy peat. Cuttings.

- P. fra'grans*. 20. White. May. Chili. 1844. B. M. t. 7024. Syn., *P. Boldus* and *Boldoa fragrans*

Peyrou'sia. (Named after *La Peyrouse*, the French navigator. Nat. ord., *Irideæ*; Tribe, *Iaxieæ*.) Now known as **Lapeyrousia**, under the specific names annexed.

Greenhouse bulbs, from South Africa, and blue-flowered, except where otherwise specified. For culture, see **LIXA**.

- P. aculeata*. A synonym of **LAPEYROUSIA ANCEPS**.
 — *d'nceps*. ½. Blue, yellow. September. 1824. **LAPEYROUSIA ANCEPS**.
 — *corymbo'sa*. ½. May. 1791. **LAPEYROUSIA CORYMBO'SA**.
 — *Fabri'ci*. ½. May. 1825. **LAPEYROUSIA FABRICII**.
 — *falca'ta*. ½. May. 1825.
 — *fascicula'ta*. ½. May. 1825. **LAPEYROUSIA FASCICULATA**.
 — *fistifolia*. ½. Violet. August. 1809. **LAPEYROUSIA FISSIFOLIA**.
 — *silenoides*. ½. Violet. June. 1822. **LAPEYROUSIA SILENOIDES**.

Pfa'fia. (After C. H. Pfaff, once Professor of Chemistry at Kiel. Nat. ord., *Amaranthaceæ*.)

Stove, perennial herb. For culture, see **CELOSIA**.

- P. gnaphalioides*. 1. White. June. Brazil. 1822.

Pfeiffera. (In honour of *Dr. L. Pfeiffer*, a botanist, who has attentively studied *Cacti*. Nat. ord., *Cactaceæ*.) See **Rhipsalis**.

- P. cereiformis*. See *Rhipsalis cereiformis*.

Pha'ca. (Name of a plant mentioned by Dioscorides. Nat. ord., *Leguminosæ*.) United with **Astragalus** in the **Genera Plantarum**.

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*. 2. Pale yellow. July. Austria. 1759. Jacq. Ic. t. 151. Syn., *Astragalus penduliflorus*.
 — *dahu'rica*. Pale yellow. Dahuria. 1820.
 — *arena'ria*. ½. Cream. July. Siberia. 1796. Syn., *Astragalus chorinensis*.
 — *astragali'na*. 1. White, blue. July. Scotland. Syn., *Astragalus alpinus*.
 — *austra'lis*. ½. Pale purple. May. South Europe. 1779. B. C. t. 490. Syn., *Astragalus australis*.
 — *ba'tica*. 4. White. May. Spain. 1640. Syn., *Astragalus lusitanicus*.
 — *cane'scens*. 1. Pale rose. July. Valparaiso. 1831.
 — *densifolia*. 1. Red. July. California. 1822. Syn., *Astragalus Crotalaria*.
 — *exalta'ta*. 1. Yellow. July. Altai. 1823.
 — *florida'na*. See *Sesbania vesicaria*.

- P. frigida*. 1. Cream. July. Austria. 1795.
Syn., *Astragalus frigida*.
— *glabra*. A synonym of *P. australis*.
— *lappo'nica*. $\frac{1}{2}$. Purple. July. North Europe.
1816. Syn., *Astragalus creticus*.
— *lutca*. 1. Yellow. July. Siberia. 1827.
— *oroboides*. 1. Purple. July. Norway. 1820.
Syn., *Astragalus oroboides*.
— *triangularis*. 1. Blue. July. Siberia. 1824.
Syn., *Astragalus triangularis*.

Phacelia. (From *phakelos*, a bundle; the disposition of the flowers. Nat. ord., *Hydrophyllaceae*; Tribe, *Phacelariæ*. Syn., *Cosmanthus*, *Eutoca* and *Whittlavia*.)

Annuals, by seeds; perennials, by seed and division in April; sandy, common garden-soil.

HARDY ANNUALS.

- P. campanularia*. $\frac{1}{2}$. Bright blue. July. S. California. 1832. B. M. t. 6735.
— *congesta*. $\frac{1}{2}$. Purple, blue. June. Texas. 1835. B. M. t. 3452.
— *divaricata*. Light violet. May. N. America. 1833. Syn., *Eutoca divaricata*. B. M. t. 3706.
— — *Wrangelia*'na. 1. Blue. August. N. America. 1835. Syn., *Eutoca Wrangeliana*. Swt. Fl. Gard. ser. 2, t. 363.
— *ambriata*. Lilac, white. N. America.
— *grandiflora*. 5. Violet-purple. Summer. California. Syn., *Eutoca grandiflora* and *Cosmanthus grandiflorus*, B. M. t. 5029.
— *Menziesii*. Purple. June. N. America. 1826. Syn., *Eutoca Menziesii*, B. M. t. 3762, and *E. multiflora*, B. M. t. 1180.
— *Orcuttia*'na. White, yellow. California. 1890.
— *Parryi*. Violet, spotted with yellow. California. 1835. B. M. t. 6842.
— *parviflora*. Blue. June. N. America. 1826. Syn., *Eutoca parviflora*.
— *tanacetifolia*. 2. Blue. June. California. 1832.
— *Whittlavia*. 2. Blue. June. California. B. M. t. 4813.
— *viscida*. 2. Brown, rose. N. America. 1834. Syn., *Eutoca viscida*, B. M. t. 3572.

HARDY HERBACEOUS.

- P. A'idea*. $\frac{1}{2}$. Pink. June. Peru. 1824.
— *bipinnatifida*. 2. Blue. June. N. Amer. 1824.
— *circinata*. $\frac{1}{2}$. Pink. June. Magellan. 1817.
— *Franklinii*. 1. Pink. May. N. America. 1827. Syn., *Eutoca Franklinii*. B. M. t. 2985.
— *sericea*. 1. Blue. June. N. America. 1827. Syn., *Eutoca sericea*. B. M. t. 3003.

Phædrana'ssa. (From *phaidros*, gay, and *anassa*, queen. Nat. ord., *Amaryllidæ*; Tribe, *Amaryllæ*. Allied to *Coburgia*.)

American 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 *COBURGIA*.

- P. Carmali*. 2. Red, green. Costa Rica. 1868. Ref. Bot. t. 46. Stove.
— *chlora'ca*. 1. Crimson, green. December. 1844. B. R. 1845, t. 17.
— — *obtus*'sa. December. 1844. Syn., *P. obtusa*.
— *eucrosioides*. 1. Green, red. Ecuador. 1878. Syn., *Leperiza eucrosioides*. Stove.
— *Lehma'nni*. Scarlet. Columbia. 1884. Stove.
— *obtus*'sa. See *P. chloracea*, var. *obtus*'sa.

- P. rubro-viridis*. 1. Green, bright red. April. Andes. Now known as *EUSTEPHIA COCCINEA*.
— *schizantha*. Bright red, green. October. Columbia. 1800.
— *viridiflora*. 1. Greenish-yellow. 1877.

Phænocodon. (From *phainos*, bloody, and *codon*, a bell. Nat. ord., *Liliacæ*; Tribe, *Luzuriacæ*.) A synonym of *Lapageria*.

Phæno'coma. (From *phainos*, bloody, and *come*, hair; colour of involucre. Nat. ord., *Compositæ*; Tribe, *Inuloideæ*. Allied to *Cassinia*.)

Greenhouse evergreen shrubs. 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 fibry loam. Winter temp., 40° to 48°.

- P. prolifera*. 4. Crimson. September. Cape of Good Hope. 1789. Syn., *Helichrysum proliferum*, B. M. t. 2365, and *Xeranthemum proliferum*, Andr. Rep. t. 374.

Phænogams. Flowering plants, i.e., those provided with stamens and ovules.

Phænosp'erma. (From *phaios*, greyish, and *sperma*, a seed; seeds greyish. Nat. ord., *Gramineæ*.)

Hardy grass. Seeds grown in spring. Common garden-soil.

- P. globosa*. China. 1874.

Phaiocalanthe. (A name given to hybrids between *Phaius* and *Calanthe*. Nat. ord., *Orchidæ*.)

For culture, see *ORCHIDS*.

- P. irrorata*. Cream, rosy-pink. 1867. A hybrid between *Phaius grandifolius* and *Calanthe vestita*.
— *Sedenia*'na. Milk-white, sulphur, light purple. 1887. Hybrid between *Calanthe Veitchii* and *Phaius grandifolius*. Syn., *Phaius Sedenianus*.

Phaius. (From *phaios*, shining; referring to the flowers. Nat. ord., *Orchidæ*; Tribe, *Epidendræ*-*Bleticæ*. Allied to *Bletia*.)

Stove orchids. Division of the pseudo-bulb-like shoots, as growth commences, in spring; grown in pots. See *ORCHIDS*.

- P. albus*. 2. White. July. Sylhet. 1836. Syn., *Thunia alba*. B. M. t. 3991.
— — *flavo-ir'netus*. Tinged with yellow. 1833.
— *angustifolius*. Green. July. Trinidad. 1821.
— *Bensonia*'na. 1. Purple, yellow. July. Rangoon. 1867. Syn., *Thunia Bensonia*. B. M. t. 5694.
— *Blumei*. Cinnamon-red, white. April. 1879.
— — *assamicus*, G. C. 1882, xvii. p. 558.
— — *Bernardysii*. 3. Sulphur-yellow. Queensland. 1873. B. M. t. 6032.
— *bicolor*. 2. Maroon, white. July. Ceylon. 1837. B. M. t. 4078.
— *callosus*. Reddish-brown. March. Java. 1848. Syn., *Limodorum callosum*.
— *candidissimus*. White. Syn., *Thunia candidissima*.

- P. Cookso'ni*. Hybrid between *P. tuberculosus* and *P. Wallichii*. G. C. 1890, vii. p. 388, fig. 57.
- *Dodgso'ni*. White, yellow. India. 1877.
- *fa'vus*. Yellow. India. 1837.
- *grandifo'lius*. White, brown. April. China. 1778. Syns., *Bletia Tankervilleae*, B. M. t. 1924, and *Limodorum Tankervilleae*, Andr. Rep. t. 426.
- *superbus*. A grand variety.
- *Humboldtii*. Rosy, white, red. Madagascar. 1880.
- *inquili'nus*. Cream, with yellow keels. 1867. A hybrid.
- *intermedius*. India. 1839.
- *irroratus*. See *Phaiocalanthe irrorata*.
- *macula-to-grandifo'lius*. A hybrid. G. C. 1881, x. p. 591.
- *maculatus*. 2. Yellow. June. Nepal. 1829. B. M. t. 3960. Syn., *Bletia Woodfordii*, B. M. t. 2719.
- *Ma'nnii*. A form of *P. Wallichii*. G. C. 1889, v. p. 714.
- *Marshalliae*. 2. White, lemon. 1871. Syn., *Thunia Marshalliae*. Varieties of this are *ionophlebia*, *purpurata*, and *triloba*.
- *philippine'nsis*. Reddish-orange-brown; lip white. Philippines. G. C. 1889, vi. p. 239.
- *Robertsonii*. Brownish-yellow, red. New Caledonia. G. C. 1884, xxii. p. 428.
- *Sedeniana'nis*. See *Phaiocalanthe Sedeniana*.
- *tetragonus*. 2. Brown. December. Mauritius, 1837. Syn., *Pesomeria tetragona*, B. M. t. 4442.
- *tuberculosus*. Snow-white, yellow, brown. Spring. Madagascar. 1881.
- *Veitchiana'nis*. White, purple-mauve. 1885. Hybrid between *P. Marshalliae* and *P. Bensoniae*.
- *Wall'chii*. 2. Orange, yellow. April. Khasia. 1837.
- Phalæno'psis**. Butterfly - Plant. (From *phalaina*, a moth, and *opsis*, like; the appearance of these handsome flowers. Nat. ord., *Orchidæ*; Tribe, *Vandæe-Sarcantheæ*.)
- 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. alceio'rnis*. Creamy-white, yellowish. G. C. 1887, i. p. 799.
- *ambilis*. 1½. White, pink. Autumn. Java. 1847. Syn., *P. grandiflora*, B. M. t. 5184. See also *P. Aphrodite*.
- *Dayana*. White, carmine. Indian Archipelago. Syn., *P. Aphrodite*, var. *Dayana*.
- *longifolia*. White. Manilla. 1842.
- *rotundifolia*. White. Manilla. 1837.
- *amethystina*. Cream-coloured, with amethyst lip. Sunda Isles? 1865.
- *antennifera*. Orange, purple. Burmah. 1879.
- *Aphroditæ*. 1. White, crimson, orange, yellow. Manilla. 1836. Syn., *P. amabilis* of B. R. 1838, t. 34, Fl. Ser. t. 36, and Gf. 1887, p. 56.
- *Dayana*. See *P. amabilis*, var. *Dayana*.
- *Boza'lii*. Sulphur, brown, white. Philippines. 1883.
- *Buysoniana*. Bright purple, white, scarlet. August. G. C. 1888, iv. p. 295.
- *casta*. White, rosy-tinted. Philippines. 1875.
- *Corningtoniana*. Purple-brown yellowish, violet. 1879.
- *cornu-cervi*. Green, white, purple. June. Moulmein. 1864. Syn., *Polychilus cornu-cervi*. B. M. t. 5570.
- *Cy'nthia*. A natural hybrid between *P. Schilleriana* and *P. Aphrodite*. G. C. 1890, vii. p. 132.
- P. delicat'a*. A supposed natural hybrid. G. C. 1882, xvii. p. 700.
- *denticulata*. 1. White, brown, yellowish. G. C. 1888, iii. p. 296.
- *equestr'is*. See *P. rosea*.
- *Esmeralda*. 1. Violet-purple, white. Cochinchina. 1877.
- *canad'ula*. White, rosy-purple. Cambodia. Lind. t. 263.
- *fasciata*. Philippines. 1882.
- *Foersteriana'ni*. White, brown, yellow. G. C. 1887, i. p. 244.
- *fusca'ta*. Yellowish, brown. June. Malay Peninsula. 1874.
- *gloriosa*. Perhaps a variety of *P. amabilis*. G. C. 1888, iii. p. 554.
- *grandiflora*. B. M. t. 5184. See *P. amabilis*.
- *Harrietæ*. Primrose, rosy-purple, orange. Hybrid between *P. amabilis* and *P. violacea*. Syn., *P. violacea-amabilis*. G. C. 1887, ii. p. 8, fig. 1.
- *intermedia*. White, pink. Philippines. Syn., *P. Lobbi*.
- *Brymeriana*. White, purple, crimson-violet. 1876.
- *Po'rtiei*. White, rosy-lilac. Philippines. 1867. Gard. March 4, 1882.
- *Le'da*. Rosy, purple, yellow. Hybrid.
- *leucorrh'oda*. White, purple, yellow. Philippines. 1875.
- *Lo'bbii*. See *P. intermedia*.
- *Lo'wii*. Yellow, purple. Borneo. 1862.
- *Luëddemanniana'na*. White, purple. Philippines. 1865.
- *amabilis*. Garden hybrid. G. C. 1888, iii. p. 331.
- *hieroglyphica*. Ochraceous, brown. Philippines. G. C. 1887, ii. p. 586.
- *ochracea*. Pale yellowish-rose, pale brown. Philippines.
- *pu'tehra*. Blackish-purple, blue. Philippines. 1875.
- *maculata*. Borneo. 1881.
- *Ma'nnii*. Yellow, brown, purple. India. 1871.
- *Mar'ice*. White, chocolate-red, magenta-purple. Borneo? 1883. Warn. Orch. Alb. t. 80.
- *Michol'tzi*. Creamy-white. Andamans. Gard xxxviii. p. 532.
- *Pari'shii*. ½. White, purple. May. Burmah. 1865.
- *Lo'bbii*. Lip white, with two brown bands. E. Himalaya. 1870.
- *Regnieriana*. Rose, dark purple, white. Siam. G. C. 1887, ii. p. 746.
- *Reichenbachiana'na*. Cream, crimson, rose, orange. 1882.
- *ro'sea*. White, pink, deep violet, orange. Manilla. 1848. B. M. t. 5212. Syn., *P. equestr'is*.
- *Rothschildiana'na*. Sulphur, purple, white, orange. Hybrid between *P. Schilleriana* and *P. amabilis*. G. C. 1887, i. p. 606.
- *Ru'ckeri*. White, yellow. Indian Archipelago. 1864.
- *Sanderiana'na*. Rosy, white, brown, purple, yellow. April. Philippines. 1883. Warn. Orch. Alb. t. 209.
- *marmorata*. Yellowish, purple.
- *Schilleriana'na*. Pink. January. Manilla. 1860. B. M. t. 5530. Syn., *P. amabilis* of Gf. 1888, p. 544.
- *advena*. Pale purple, white, yellow. 1885.
- *alba*. White, yellow. 1882.
- *immaculata*. Rosy, white, violet, yellow. Philippines. 1875.
- *splendens*. Rose, white, purple. Philippines. Rev. Hort. 1886, p. 396.
- *vestalis*. White. Philippines. 1882.

- P. speciosa*. White, rose-madder, yellow. 1881. Tropical Asia.
 — *Christiana*. Rose-madder, white. 1882.
 — *impe'ratric*. Rose-purple. 1882.
 — *Stobartiana*. Green, amethyst, yellow, white. 1877.
 — *Stuartiana*. Cream, sulphur, cinnamon, white. January. Philippines. 1881. B. M. t. 6222.
 — *bella*. Cream, red, purple-brown. G. C. 1888, iii. p. 200.
 — *Hrubiana*. Purple, white. 1884.
 — *no'bilis*. Cream, orange. 1882.
 — *punctatissima*. White, greenish, carmine, yellow, mauve. 1882.
 — *punctulata*. Sepals and petals dotted with red. Lind. t. 8.
 — *sumatran*. White, brown. Sumatra. 1865. B. M. t. 5527.
 — *Kimballiana*. Yellow, red, ochre, orange. G. C. 1888, iv. p. 6.
 — *parucivittata*. A form with fewer streaks than in the type. 1882.
 — *sanguinea*. Dark red, yellowish-green. Borneo. 1881.
 — *tetra spits*. White, yellow. Andaman Islands. G. C. 1881, xv. p. 562.
 — *Valentini*. Purple, white, mauve, yellow. 1883.
 — *Veitchiana*. Purplish, with dark-purple spots. Philippines. 1872.
 — *brachyodon*. White, brown, purple. 1884.
 — *violacea*. Rose-purple, white, yellow. Sumatra. 1861. G. C. 1881, xvi. p. 145.
 — *Bowringiana*. Light yellow, purple. Malayan Archipelago. 1884.
 — *Murtoniana*. Lemon-yellow, purplish. Malacca. 1878.
 — *Schröderi*. Purple, amethyst. G. C. 1882, xviii. p. 242.
 — *Wightii*. White, purple. Burmah. 1865. Now referred to *DORITIS*.

Phala'ngium. (From *phalagion*, a spider. Nat. ord., *Liliaceæ*.) A synonym of **Anthericum**.

- P. argenteo-lineare*. See *Anthericum variegatum*.
 — *elatum*. See *Chlorophytum elatum*.
 — *Liliago*. B. M. t. 914. See *Anthericum Liliago*.
 — *Liliastrum*. Red. Lil. t. 255. See *Paradisea Liliastrum*.
 — *nepalense*. B. R. t. 998. A synonym of *Chlorophytum nepalense*.
 — *pomeridianum*. Swt. Fl. Gard. ser. 2, t. 381. A synonym of *Chlorogalum pomeridianum*.
 — *ramosum*. B. M. t. 1055. See *Anthericum ramosum*.
 — *virgatum*. See *Nolina georgiana*.

Phalaris. Canary Grass. (From *phaloros*, shining; referring to the shining seeds. Nat. ord., *Gramineæ*; Tribe, *Phalarideæ*.)

- P. canariensis* produces the Canary-seeds of commerce. Seeds; common soil.
 — *appendiculata*. See *P. paradoxa*.
 — *arundinacea*. 3-5. Purplish. July. Britain. Syn., *Digraphis arundinacea*. Eng. Bot. ed. 3, t. 1697.
 — *gigantea*. A robust form. France. 1877.
 — *variegata*. Leaves striped. Ribbon Grass or Gardener's Garters.
 — *canariensis*. 2. July. Britain. Eng. Bot. ed. 3, t. 1698.
 — *cærulea*. 1. June. Italy. 1823. Syn., *P. commutata*.
 — *paradoxa*. 1. June. Egypt. 1820. Syn., *P. appendiculata*.

Phaleria. (Derivation unexplained, perhaps from *phaleros*, white; in allusion to the white flowers. Nat. ord., *Thymelæaceæ*; Tribe, *Phalericeæ*.)

- Stove evergreen shrub, with very fragrant flowers. Seeds in a hotbed in spring; cuttings of young shoots in sand, under a bell-glass, in bottom-heat. Rich light loam and fibry peat. Summer temp., 60° to 85°; winter, 58° to 70°.
 — *laurifolia*. 6. White. Ceylon. 1869.

Phaleroce'rpus. (From *phaleros*, white, and *karpos*, fruit. Nat. ord., *Vacciniaceæ*.)

Hardy evergreen creeper. For culture, see GAULTHERIA.

- P. hispidulus*. White. April. N. America. 1815. Syn., *P. serpyllifolia*, *Chiogenes hispida*, and *Gaultheria serpyllifolia*.

Phalocallis. (From *phalos*, a cone, *kallos*, beautiful; beautifully conecrested. Nat. ord., *Iridææ*; Tribe, *Morçææ*.) A synonym of **Cypella**.

- P. plumbea*. B. M. t. 3710. A synonym of *Cypella plumbea*.

Pharbitis. (From *pharbe*, colour; deep and varied colours of the flowers. Nat. ord., *Convolvulaceæ*.) A synonym of **Ipomœa**.

- P. barbat*. A synonym of *Ipomœa hederacea*.
 — *barbifera*. Blue. September. N. America. A synonym of *Lettsomia barbifera*.
 — *cathartica*. Blue, purple. September. Mexico. 1848. A synonym of *Ipomœa cathartica*. Stove.
 — *cœrulea*. Pale blue. July. E. Indies. 1820. Hardy.
 — *cuspidata* and *Dille'ni* are synonyms of *Ipomœa longicauspis*.
 — *diversifolia*. A synonym of *Ipomœa hederacea*.
 — *hedera'cea*. See *Ipomœa hederacea*.
 — *hispida*. See *Ipomœa purpurea*.
 — *Lea'rit*. B. R. 1841, t. 56. See *Ipomœa Lea'rit*.
 — *n'l*. See *Ipomœa hederacea*.
 — *ostrina*. 20. Purple. July. Cuba. 1840. Stove. B. M. 1842, t. 51.
 — *punctata*. See *Ipomœa hederacea*.
 — *sca'bra*. White. September. 1823.
 — *triloba*. A synonym of *Ipomœa hederacea*.
 — *tyrianthina*. B. M. t. 4024. See *Ipomœa tyrianthina*.
 — *varia*. Blue, violet. September. 1816. Stove.

Pharium. (From *pharos*, a covering. Nat. ord., *Liliaceæ*; Tribe, *Alliceæ*.) See **Bessera**.

- P. fistulosum*. B. R. t. 1546. See *Bessera fistulosa*.

Pharanceum. (Named after *Pharances*, king of Pontus. Nat. ord., *Ficoidææ*; Tribe, *Molluginææ*.)

- Greenhouse dwarf perennial half-shrubby plants with fleshy leaves, which have an agreeable acid flavour and may be used for salad. Seeds and cuttings. Light sandy soil, and not too much water; it requires no shade. Summer temp., 60° to 80°; winter, 50° to 60°.

- P. ac'idum*. White. St. Helena. 1869. Ref. Bot. t. 153.
 — *incanum*. Greenish, white; stigmas crimson. large. Summer. S. Africa 1782. B. M. t. 1883.

- P. lineare*. 1-2. White. S. Africa. 1800.
Andr. Rep. t. 329. The form figured in
Andr. Rep. t. 326 is *P. reflexum*.
— *reflexum*. 1. Yellowish. July. S. Africa.
1802. Syn., *P. lineare* of Andr. Rep.
t. 326.

Pharus. (From *pharos*, a covering ;
the leaves being used for thatching and
similar purposes. Nat. ord., *Gramineæ* ;
Tribe, *Panicææ*.)

- A stove grass. For cultivation, see BAMBUSA.
P. latifolius. Green. Jamaica. 1796.
— *vittatus*. Leaves striped with white.
1848. Syn., *P. vittatus*. Fl. Ser. t. 316.

Phaseolus. Kidney Bean. (From
phaselus, a little boat ; fancied resem-
blance of the pods. Nat. ord., *Legu-
minosæ* ; Tribe, *Phaseolææ*.)

For culture of annuals, see KIDNEY BEANS ;
perennials, by division and cuttings, and usual
greenhouse or stove culture.

STOVE DECIDUOUS TWINERS.

- P. Caracalla*. 1½. Lilac. August. India. 1690.
— *derasus*. Greenish-white. Brazil. 1888.
— *lobatus*. 6. Yellow. September. Buenos
Ayres. 1843. Evergreen. B. M. t. 4076.
— *speciosus*. 6. Scarlet. July. Orinoco. 1820.

GREENHOUSE DECIDUOUS TWINER.

- P. sylvestris*. 6. Scarlet. July. Mexico. 1825.

HARDY DECIDUOUS TWINERS.

- P. multiflorus*. 12. Scarlet. July. S. Amer.
1633.
— *albiflorus*. 12. White. August. S.
Amer. 1633.
— *perennis*. 3. Dark purple. July. Carolina.
1824.
— *vulgaris*. 1. White. July. India. 1597.
— *fasciatus*. White. July. India. 1597.
— *variegatus*. White. July. India.
1597.

TWINING ANNUALS.

- P. aconitifolius*. 2. Pink. July. E. Ind.
1781.
— *amœnus*. See *P. rostratus*.
— *chrysanthus*. 3. Yellow. July.
— *gonospermus*. 4. Pale violet, white. July.
A form of *P. vulgaris*.
— *heterophyllus*. 4. Red. June. Mexico.
1820.
— *lathyroides*. 2. Scarlet. July. Jamaica.
1786.
— *microspermus*. 1. Dark purple. June.
Cuba. 1825.
— *rostratus*. 4. Red. July. Society Islands.
1820. Syn., *P. amœnus*.
— *semirectus*. 2. Red. July. W. Ind.
1781.
— *torosus*. 4. Violet. July. Nepal. 1818.
— *violaceus*. 3. Violet. July. Africa. 1800.
— *Xuanensis*. 4. Red. July. S. Amer. 1818.

Phaylo'psis. (From *phaios*, dusky,
hule, wood, and *opsis*, like. Nat. ord.,
Acanthaceæ ; Tribe, *Ruellieææ*.)

- Stove perennial. Sandy loam. Seeds.
P. longifolia. Green. March. Sierra Leone.
1822. B. M. t. 2433.

Pheasant's Eye Adonis. *Adonis
autumnalis*.

Phebalium. (From *phibale*, a
myrtle ; the appearance of the plants.
Nat. ord., *Rutaceæ* ; Tribe, *Boronieææ*.
Allied to *Crocea* and *Eriostemon*.)

Greenhouse evergreen, yellow-flowered, Aus-
tralian shrubs. Cuttings of half-ripened shoots
or short, stumpy side-shoots, in sand, under
a bell-glass, in May ; sandy peat, with a small
portion of fibry loam. Winter temp., 38° to
48°.

- P. aureum*. See *P. squamulosum*.
— *Billardierei*. 10. May. 1825. Syn., *P.
elatrum*.
— *lachnoides*. 3. May. 1824.
— *lineare*. 3. June. 1825.
— *salicifolium*. 3. June. 1825.
— *squamulosum*. 2½. May. 1824. Syn., *P.
aureum*.

Phego'pteris. (From *phegos*, the
beech tree, and *pteris*, a fern ; one
species brought from Polypodium,
namely, *P. vulgare*, being called the
beech-fern. Nat. ord., *Filices*—*Polypo-
diaceæ*.) See also **Polypodium**.

Brown-spored ferns. For cultivation, see
FERNs.

GREENHOUSE.

- P. rugulosum*. Tasmania.

STOVE.

- P. a'mpla*. Tropical America.
— *aurea*. 2. E. Indies.
— *decussata*. 5. W. Indies.
— *divergens*. 5. Tropical America.
— *effusa*. 5. W. Indies. 1769.
— *formosa*. 4. Brazil.
— *hastifolia*. Jamaica.
— *lachnoides*. 4. Jamaica. 1841.
— *macroptera*. Brazil.
— *molliscula*.
— *spectabilis*. Tropical America.
— *submarginata*. Brazil.
— *trichoides*. Malay Archipelago.

In addition to the foregoing, *Polypodium al-
pestre*, *calcareum*, *Dryopteris flexile*, *vulgare*,
drepanum, and *hexagonopterum*, have been in-
corporated in this genus.

Phelipæ'a. (Commemorative of the
Phelipeææ family, patrons of the bo-
tanist Tournefort. Nat. ord., *Orobanch-
aceææ*.)

A very singular and beautiful genus, of which
few species have yet been successfully cultivated.
P. foliata is a hardy annual, parasitical upon the
roots of *CENTAUREA dealbata*. The seeds should
be sown with those of the *CENTAUREA*, together,
in the same pot, when probably some will ger-
minate, fasten themselves upon the roots of
the seedling *CENTAUREAS*, and develop into
plants.

- P. foliata*. 3. Red. Caucasus. 1880. The
leaves, as in the rest of the order *Oro-
banchaceææ*, are reduced to coloured
scales, never green. Syn., *Anoplanthus
Bierbersteini* and *A. foliata*.

Phenakospermum. (From *phe-
nakisma*, deception, and *sperma*, a seed ;
the seed is upon a large orange-coloured
aril. Nat. ord., *Scitamineææ* ; Tribe,
Museææ.) See **Ravenala**.

- P. guianense*. Ill. Hort. 1860, p. 239. See *Ra-
venala guianense*.

Philade'lyphus. Syringa, or Mock
Orange. (Athenian name for a shrub.
Nat. ord., *Saxifrageææ* ; Tribe, *Hydran-
geææ*. Allied to *Deutzia*.)

Hardy deciduous, fragrant, 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. aureus variegatus*. Garden variety. 1882.
— *chinese*. See *P. Satsumi*.
— *coronatus*. 8. May. South Europe. 1596.
— B. M. t. 391.
— *fo're-ple'no*. 8. May. South Europe.
— *fo'ltis variegatus*. 8. May. South Europe.
— *na'nus*. 2. May.
— *vulgaris*. 8. May.
— *Coulteri*. Northern Mexico. G. and F. 1888, i. p. 232, fig. 40.
— *floribundus*. See *P. grandiflorus*.
— *Gordonia*. 10. July. California. B. R. 1839, t. 32.
— *grandiflorus*. 6. June. Carolina. 1811. Wats. Dendr. t. 46. Syns., *P. floribundus*, *P. latifolius* and *P. speciosus*.
— *la'rus*. 4. June. N. Amer. 1830.
— *hirsutus*. 3. June. N. Amer. 1820. B. R. 1838, t. 14.
— *inodorus*. 4. June. Carolina. 1738.
— *latifolius*. See *P. grandiflorus*.
— *la'rus*. B. R. 1839, t. 39. See *P. grandiflorus*, var. *lazus*.
— *Lemoinei*. Garden hybrid. Wien. Gart. Zeit. 1888, p. 124.
— *Levisii*. 6. June. N. Amer. 1739.
— *meicatus*. 2. June. Mexico. 1839.
— *microphyllus*. 3. Summer. New Mexico. G. C. 1887, ii. p. 156, fig. 36.
— *parviflorus*. White. China. 1871.
— *rubricaulis*. Yellowish-white. China. 1871.
— *Satzumi*. 5. White. July. Japan. 1851. Syn., *P. chinensis*.
— *speciosus*. B. R. t. 2003. See *P. grandiflorus*.
— *tomentosus*. 3. June. Nepaul. 1822.
— *triflorus*. 4. Himalaya.
— *verrucosus*. 4. June. N. Amer. B. R. t. 570.
— *Zeyheri*. 3. June. N. Amer.

Philage'ria. (From *Philesia* and *Lagereria*. Nat. ord., *Liliaceae*; Tribe, *Luzuriagae*.)

A greenhouse evergreen shrub, probably hardy in the south of England; produced as a hybrid between *Philesia buxifolia* and *Lagereria rosea*. Peat. Divisions; layers.

- P. Veitchii*. Rose-purple, bright rose. 1872. G. C. 1872, p. 358.

Phile'sia. (From *philesios*, lovely. Nat. ord., *Liliaceae*; Tribe, *Luzuriagae*. Allied to *Lagereria*.)

This is an evergreen, greenhouse shrub. Prune after it has bloomed early in the summer. Propagated by cuttings. Peat and loam in equal proportions; requires to be kept moist.

- P. buxifolia*. 3. Pink. June. Valdivia. 1853. B. M. t. 4738.

Philibe'rtia. (Named of *J. C. Philibert*, a botanical author. Nat. ord., *Asclepiadaceae*; Tribe, *Cynancheae*. Allied to *Pergularia*.)

Stem, yellowish-white-flowered, evergreen twines. Cuttings of firm side-shoots in sand, under a bell-glass, in May, and kept in a cold pit until struck; sandy loam and fibry peat, well-drained. Winter temp., 40° to 45°; summer, 60° to 75°.

- P. campanulata*. 6. Yellow, brown. September. Peru. 1844. Syn., *Sarcostemma campanulata*. B. R. 1846, t. 36.

- P. gracilis*. 6. June. Buenos Ayres. 1836.
— *grandiflora*. June. Buenos Ayres. 1836. B. M. t. 3618.

Philly'rea. (From *phyllon*, a leaf; literally, a leafy plant, the flowers being inconspicuous. Nat. ord., *Oleaceae*; Tribe, *Oleineae*.)

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. angustifolia*. 8. May. 1597.
— *brachyta*. 8. May. 1597.
— *rosmarinifolia*. 8. May. 1597.
— *de'cora*. Asia Minor. 1885. Syns., *P. laurifolia* and *P. Vilmoriniana*. B. M. t. 6800.
— *ilicifolia*. June. 1597. Syn., *P. spinosa*.
— *la'vis*. 15. May. 1597.
— *lancoleta*. A synonym of *P. angustifolia*.
— *latifolia*. 15. May. 1597. Syn., *P. obliqua*.
— *laurifolia*. See *P. decora*.
— *ligustrifolia*. See *P. media*.
— *me'dia*. 15. May. 1597. Syns., *P. ligustrifolia* and *P. vargata*.
— *buxifolia*. 15. May. 1797.
— *pendula*. 15. May. 1597. Syn., *P. pendula*.
— *obliqua*. See *P. latifolia*.
— *olexifolia*. 15. May. 1597.
— *pendula*. See *P. media*, var. *pendula*.
— *robusta*. See *Ligustrum robustum*.
— *spindsa*. See *P. ilicifolia*.
— *virgata*. See *P. media*.

Philode'ndron. (From *phileo*, to love, and *dendron*, a tree; referring to the habit of the plants growing on trees. Nat. ord., *Aroidae*; Tribe, *Philodendreae*. Allied to *Caladium*.)

Stem rambling evergreens. Division of the roots; cuttings of short, stubby side-shoots in sand, under a bell-glass, in peat; rich, sandy loam and fibry pieces of peat. Winter temp., 55° to 60°; summer, 60° to 85°.

- P. ambiquum*. Green, whitish. Brazil. 1860. Climber.
— *Andraenum*. 3. Columbia. Rev. Hort. 1886, p. 36.
— *arborescens*. June. W. Indies. 1759.
— *bipinnatifidum*. 3. Spathe reddish-brown outside, greenish inside; spadix whitish.
— *brevilaminatum*. Brown-purple, greenish; spadix white. Bahia. 1860. Climber.
— *calophyllum*. Spathe creamy outside, crimson within; spadix white. Brazil. 1872.
— *cannafolium*. Green, cream colour. Brazil. 1831.
— *Carderi*. See *P. Lindenii*.
— *Corsinia*. Garden hybrid. Bull. Soc. Tesc. 1888, p. 211.
— *crassinervium*. 20. Green, white. December. Brazil. 1835.
— *dagueuse*. Spathe dull red, crimson inside; spadix white. Columbia. 1873.
— *disparitibile*. Yellowish green, cream colour. Bahia. 1860.
— *elegans*. 1881.
— *erubescens*. Blackish-purple, scarlet, cream. B. M. t. 5071.
— *fragrantissimum*. 4. Red, white. March. Demerara. 1834. Syn., *Caladium fragrantissimum*. B. M. t. 3314.
— *giganteum*. Red. 1857.
— *Glaziovii*. Pale yellow, crimson. Brazil. 1885. B. M. t. 6813.

- P. glorio'sum*. Leaves dark green, with white veins. Columbia. 1876. Ill. Hort. 1876. p. 262.
- *grandifolium*. 6. White. March. Caraccas. 1803. Syn., *Arum grandifolium*. Jacq. H. Schoenh. t. 189.
- *Holtonia num.* G. C. 1876. p. 365. A synonym of *Anthurium insigne*.
- *Imbe*. Green, whitish, crimson. Rio Janeiro. Climber.
- *imperia le.* Green, cream colour. Bahia. 1860. Climber.
- *lacinia tum.* Greenish, reddish-purple, white. Brazil. 1824. Syn., *Caladium pedatum*.
- *Linde'ni*. Leaves variously barred. Ecuador. 1866. Syn., *P. Carderi*.
- *longi-lamina tum.* Green, cream colour. Bahia. 1860.
- *Ma'met.* Ecuador. 1883. Rev. Hort. 1883, p. 104, fig. 21.
- *melanochry'sum*. Leaves satiny blackish-green. Columbia. 1874. Ill. Hort. xx. t. 149-50.
- *Melino'ni*. Spathe reddish; spadix white. Tropical America. 1874.
- *no'bile*. S. America. 1884.
- *Pea'rcet.* Leaves dark satiny green. Peru. 1869.
- *peda tum.* Green, carmine, white. Brazil. Climber.
- *pertu'sum*. See *Monstera deliciosa*.
- *pinnatifidum ru'bro-puncta tum.* 3. Spathe white, with red spots; spadix white. Brazil. 1868. Syn., *P. rubro-punctatum*. B. M. t. 5948.
- *recurvifo'lium*. Green, crimson, whitish. Bahia. 1860. Climber.
- *Roe'zlii*. Columbia. 1872.
- *ru'bens*. Spathe white outside, purplish-red within; spadix white. Venezuela. 1873.
- *ru'bro-puncta tum.* See *P. pinnatifidum*, var. *rubro-punctatum*.
- *sanguineum*. Leaves purplish beneath. 1869. Gf. t. 621.
- *Sellowia num.* Spathe green, white; spadix white. Brazil. 1869. B. M. t. 6773.
- *se'pens*. Spathe pinkish and yellowish outside, cream and crimson inside; spadix cream. Columbia. 1877. B. M. t. 6375.
- *S'i'msi*. Crimson, white. March. Caraccas. 1825. Syn., *Caladium grandifolium* of B. M. t. 2643.
- *Sod'i'roi*. Tropical America. 1883.
- *specio'sum*. Purplish-green, carmine. South Brazil.
- *spectabile*. Choco. 1869.
- *triparti tum.* White. Caraccas. 1816.
- *verruco'sum*. Ecuador. 1866.
- *Willia'msi*. 10. Spathe green; spadix crimson-white. Bahia. 1871. B. M. t. 5899.

Philo'gyne. A synonym of *Narcissus*.

Philopo'dium ri'gidum. A synonym of *Muehlenbeckia adpressa*.

Philothe'ca. (From *philos*, smooth, and *theke*, a sheath; smooth tube of stamens. Nat. ord., *Rutaceæ*; Tribe, *Boroniææ*. 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 fibry peat. Winter temp., 40° to 45°.

P. austr'alis. 2. Pale red. April. N. S. Wales. 1822.

Phily'drum. (From *phileo*, to love,

and *hydor*, water. Nat. ord., *Phylodra-ceæ*.)

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. glaberrimum. See *Helmholtzia glaberrima*.

— *lanuginosum*. 3. Yellow. June. China. 1801.

Phinæ'a. (An anagram of *Niphæa*. Nat. ord., *Gesneraceæ*; Tribe, *Gesnerææ*.)

Stove herbs. For culture, see *NIPHÆA*, to which this genus is closely allied.

P. albo-linea'ta. ‡. White. September. New Grenada. 1844. Syn., *Niphæa albo-lineata*. B. M. t. 4282.

— *reticulata*. Leaves with coloured veins. Syn., *Niphæa albo-lineata*, var. *reticulata*. B. M. t. 5043.

— *rubida*. †. White. July. Guatemala. 1846. Syn., *Niphæa rubida*. Fl. Ser. t. 251.

Phlebo'dium. (From *phlebs*, a vein. Nat. ord., *Filices—Polypodiaceæ*.) A section of **Polypodium**.

Stove ferns. See **FERNES**.

P. areola tum. 1. Yellow. May. Brazil.

— *aurum*. 3. Yellow. March. W. Ind. 1742.

— *decuma num.* 5. Yellow. May. Brazil. 1818.

— *dictyocallis*. 3. Tropical America. 1855.

— *elonga tum.* Brown. May. W. Ind. 1843.

— *lycopodioides*. †. Brown, yellow. March. Jamaica. 1822.

— *nitidum*. Brown, yellow. May. Honduras. 1844.

— *peru'ssum*. Brown, yellow. May. Brazil. 1841.

— *putvine'um*. Brown, yellow. May. Brazil. 1841.

— *sporodocarpum*. 3. Brown, yellow. May. Mexico. 1842.

— *squamulosum*. Brown, yellow. May. Brazil. 1842.

Phlogaca'nthus. (From *phlox*, a flame, and *Acanthus*; the type of this genus having the flowers flame-coloured. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*. Allied to *Justicia*.)

Stove evergreen shrubs. For culture, see **JUSTICIA**.

P. asperulus. 3. Purplish-red. January. N. India. Syns., *Justicia asperula*, B. C. t. 1681, *J. quadrangularis*, B. M. 2845, and *J. vitellina*.

— *curviflorus*. 6. Red, yellow. June. Sylhet. 1839. B. M. t. 3783. Syn., *Justicia curviflora*.

— *guttatus*. 1‡. Yellow-spotted. April. E. Ind. 1828. B. R. t. 1334. Syn., *Justicia guttata*.

— *thyrsiflorus*. Orange. May. E. Ind. 1812. Syn., *Justicia thyrsiflora*.

Phlo'mis. (From *phlox*, a flame; the down is used for wicks. Nat. ord., *Labiataæ*; Tribe, *Stachydeæ*. Allied to *Leonotis*.)

Perennials by seeds, divisions, and cuttings 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; all good, mellow, well-drained, sandy soil.

HALF-HARDY HERBACEOUS, ETC.

- P. angustifolia*. Cream. July. Levant. 1596. Evergreen.
 — *bi-color*. See *P. floccosa*.
 — *criniata*. 2. Pale brown. June. Spain. 1820.
 — *floccosa*. 2. Yellow. August. Egypt. 1828. Evergreen. B. R. t. 1800. Syn., *P. bicolor*.
 — *Nissolia*. 2. Yellow. June. Levant. 1757.
 — *orientalis*. 3. Pale brown. July. South Europe. 1820.

HARDY EVERGREEN SHRUBS.

- P. ferruginea*. See *P. purpurea*.
 — *cretica*. See *P. purpurea*, var. *cretica*.
 — *fruticoso*. 3. Yellow. June. Spain. 1596. B. M. t. 1843. Jerusalem Sage.
 — *italica*. 2. Purple. July. Italy. 1661.
 — *lana*. 1½. Yellow. June. Candia. 1696.
 — *lychnites*. 2. Yellow, brown. July. South Europe. 1658. B. M. t. 999.
 — *purpurea*. 2. Purple. July. South Europe. 1661. Syn., *P. ferruginea*.
 — *cretica*. 3. Yellow. June. Crete. 1820. Syn., *P. ferruginea*, var. *cretica*.
 — *viscosa*. Yellow. June. Levant.

HARDY HERBACEOUS.

- P. agraria*. Purplish. July. Siberia. 1830.
 — *alpina*. 1. Purple. July. Siberia. 1802.
 — *armeniaca*. 1. Yellow. July. Armenia. 1834. Swt. Fl. Gard. ser. 2, t. 364.
 — *bracteosa*. Purple. May. Himalayas. 1838. Syn., *P. simplex*.
 — *cashmeriana*. 2. Pale lilac. July. Cashmere. B. R. 1844, t. 22.
 — *hebræo-ænti*. 2. Red. August. South Europe. 1596. B. M. t. 2449.
 — *laciniata*. Swt. Fl. Gard. t. 24. See *Eremostachys laciniata*.
 — *lunatifolia*. See *P. Samia*.
 — *pu'ngens*. 3. Brown. July. Armenia. 1820. Swt. Fl. Gard. t. 33.
 — *Russelliana*. 3. Brown. June. Levant. 1821.
 — *Samia*. 3. Purple. N. Africa. 1714. B. M. t. 1891. Syn., *P. lunatifolia*. B. M. t. 2642.
 — *simplex*. See *P. bracteosa*.
 — *tuberosa*. 4. Purple. August. Siberia. 1759. B. M. t. 1555.

Phlox. (From *phlox*, flame; brilliancy of the flowers. Nat. ord., *Polemoniaceæ*.)

Herbaceous perennials, natives of North America, except where otherwise mentioned. Divisions, seeds, 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. *Drummondii* by seed sown the first week in April, in the open air.

HALF-HARDY.

- P. arisata*. ½. White. April. Carolina. 1828.
 — *floridana*. 1. Rose. April. 1834. Syn., *P. carolina* of Swt. Fl. Gard. ser. 2, t. 190.
 — *speciosa*. 1. Flesh. Columbia. 1826.

HARDY.

- P. acuminata*. 4. Pale purple. July. 1812.
 — *acutifolia*. 4. Purple. August. 1825.
 — *adsurgens*. Rose. Oregon and N. W. California. G. and F. 1888, i. p. 66, fig. 11.
 — *amœna*. ½. Pink. June. 1809. Syn., *P. pilosa*, var. *amœna*.
 — *canadensis*. Swt. Fl. Gard. ser. 2, t. 221. See *P. divaricata*.
 — *candida*. See *P. maculata*.
 — *carnea*. B. M. t. 2155. See *P. glaberrima*, var. *suffruticosa*.
 — *carolina* of B. M. t. 1344. See *P. ovata*; of Swt. Fl. Gard. ser. 2, t. 190, see *P. floridana*.
 — *cordata*. See *P. paniculata*.
 — *corymbosa*. See *P. paniculata*.

- P. crassifolia*. See *P. reptans*.
 — *decussata*. See *P. maculata*.
 — *disticha*. 5. Red. August. 1826.
 — *divaricata*. 1. Light blue. March. 1746. B. M. t. 163. Syn., *P. canadensis*.
 — *Drummondii*. 1. Purple. July. Texas. 1835. Annual. B. M. t. 3441. There are numerous varieties of this species, the best of them being—*compacta*, *cuspidata*, *fimbriata* (Gf. t. 1264), and *frondosus* (Gf. 1886, p. 404, fig. 50).
 — *elata*. 6. Lilac. September. 1828.
 — *excelsa*. 4. Purple. August. 1824.
 — *frondosa*. See *P. subulata*, var. *frondosa*.
 — *glaberrima*. 2. Red. July. 1725. Swt. Fl. Gard. ser. 2, t. 36.
 — *suffruticosa*. 1. Pink. August. 1816. Syn., *P. carnea*. B. M. t. 1555, and *P. suffruticosa*, B. R. t. 68.
 — *intermedia*. 2. Purple. July.
 — *involuta*. 1. Lilac. June. 1830.
 — *lata*. 3½. White. August.
 — *latifolia*. See *P. ovata*.
 — *linearifolia*. 1. Flesh-colour. July. 1826. Syn., *P. speciosa* of B. R. t. 1351.
 — *longiflora*. See *P. maculata*, var. *candida*.
 — *maculata*. 2. Purple. July. 1740. Forms of this are—*P. decussata*, *P. odorata* (Swt. Fl. Gard. t. 224), *P. penduliflora* (Swt. Fl. Gard. ser. 2, t. 46), *P. reflexa* (Swt. Fl. Gard. t. 232), and *P. tardiflora*.
 — *candida*. White. Syn., *P. longiflora* (Swt. Fl. Gard. ser. 2, t. 31), and *P. suaveolens*.
 — *na'na*. ½. Red, white, or yellow. G. and F. 1888, i. p. 413, fig. 66.
 — *Nelsoni*. See *P. subulata*.
 — *nitida*. 2. Purple. July. 1800.
 — *nivalis*. B. C. t. 780. See *P. subulata*.
 — *odorata*. Lilac. August.
 — *ovata*. 1½. Reddish-purple. Spring. 1759. B. M. t. 528. Syn., *P. triflora*.
 — *carolina*. 1. Pale purple. August. 1728. Syn., *P. carolina* in part.
 — *Listonensis*. 1. Purple. July. 1816.
 — *paniculata*. 3. Pinkish-purple. August. 1782. Syn., *P. cordata* (Swt. Fl. Gard. ser. 2, t. 13), *P. corymbosa* (Swt. Fl. Gard. ser. 2, t. 114), and *P. scabra* (Swt. Fl. Gard. t. 248).
 — *acuminata*. 4. Pale purple. July. 1812. Syn., *P. acuminata*. B. M. t. 1880.
 — *penduliflora*. A form of *P. maculata*.
 — *pilosa*. 1. Purple. May. 1759. B. M. t. 1307.
 — *amœna*. See *P. amœna*.
 — *procumbens*. Flesh. May. 1827. B. C. t. 1722.
 — *pyramidalis*. See *P. maculata*.
 — *reptans*. ½. Blue, purple. July. 1800. Syn., *P. crassifolia* (B. C. t. 1596) and *P. stolonifera* (B. M. t. 503).
 — *crassifolia*. 3. Purple. July. 1825.
 — *scabra*. See *P. paniculata*.
 — *setacea*. See *P. subulata*.
 — *Sickmanni*. A form of *P. paniculata*.
 — *stolonifera*. See *P. reptans*.
 — *suaveolens*. See *P. maculata*, var. *candida*.
 — *subulata*. ½. Dark purple. May. 1786.
 — *frondosa*. Rosy-lilac. Syn., *P. frondosa*.
 — *suffruticosa*. See *P. glaberrima*, var. *suffruticosa*.
 — *tardiflora*. See *P. maculata*.
 — *triflora*. Swt. Fl. Gard. t. 29. See *P. ovata*.
 — *undulata*. 3. Purple. July. 1759.
 — *virginica*. 1. Purple. July. Virginia. 1812.

Phœnicophorum. (From *phœnix*, date, and *phoreo*, to bear. Nat. ord., *Palmeæ*.) See **Stevensonia**.
P. seychella'rum. See *Stevensonia grandiflora*.

Phœnix. Date Palm. (The Greek name of the tree. Nat. ord., *Palmeæ*; Tribe, *Phœnicæ*.)

Dactyli'fera requires a greenhouse, but all the others a stove. Seeds in a hothed, in spring, or when procurable; rich, rather stiff loam, or good, fibry loam, with a fourth part of old cow-dung.

- P. acan'tis.* 6. White, green. E. Ind. 1816.
 — *compa'cta.* Garden hybrid.
 — *cyadifo'lia.* Trunk like a Cycad, two feet thick. 1879.
 — *dactyli'fera.* 40. White, green. Levant. 1597. Date palm.
 — *farin's'fera.* 28. White, green. Cochin China. 1800.
 — *hy'brida.* Garden hybrid between *P. dactyli'fera* and *P. farin's'fera*.
 — *interme'dia.* Garden hybrid.
 — *leon's'nis.* See *P. spinosa*.
 — *Ousleya'na.* India.
 — *paludo'sa.* 20. E. Ind. 1820.
 — *pygma'ea.* 6. Mauritius. 1823.
 — *rectina'ta.* 10. White, green. Cape of Good Hope. 1792.
 — *Roëbe'l's'ni.* Siam. G. C. 1889, vi. p. 473, fig. 68.
 — *rupi'cola.* India. 1873.
 — *fo'lis arge'nteo variegat'is.* Leaves variegated with white. Ill. Hort. xxxiv. p. 10, t. 3.
 — *spino'sa.* E. Africa. 1836. Syn., *P. leonensis*.
 — *sylo'e'stris.* 40. Green. May. India. 1763. E. Indian wine palm; wild date.
 — *te'nuis.* More slender than the other species.

Pholidoca'rpus. (From *pholis*, a scale, and *karpos*, fruit; the fruit has a scaly covering. Nat. ord., *Palmeæ*.)

Stove palm. Turfy loam and leaf-mould. Seeds.

P. l'hur. Malayan Archipelago.

Pholido'ta. Rattle-snake Orchid. (From *pholis*, a scale, and *ous* (*otis*), an ear; flowers arranged like an ear of wheat, with scaly bracts, as the tail of a snake. Nat. ord., *Orchidææ*; Tribe, *Epidendrea-Cælogyneæ*. Allied to *Cælogyne*.)

Stove orchids. Division of the plant; in a pot. See ORCHIDS.

P. articula'ta. White, yellow. April. India. 1837.

— *assa'mica.* Gfl. 1890, p. 607.

— *chine'nsis.* $\frac{3}{4}$. Whitish. May. China. 1814.

— *clypea'ta.* Borneo. 1847.

— *concho'dæa.* Yellow. February. Philippine Islands. 1840.

— *imbrica'ta.* 1. Yellowish, violet. October. India. 1824. B. R. t. 1777.

— *pa'llida.* $\frac{3}{4}$. White. India. 1828. B. R. t. 1213.

— *re'pens.* Fleshy-pink. India. 1891.

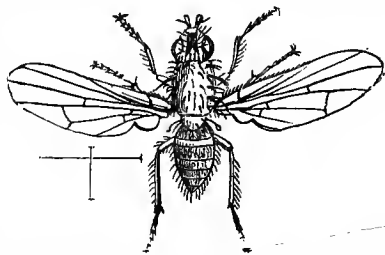
— *ru'bra.* Pale red. April. E. Ind. 1828.

Syn., *P. undulata*.

— *ventrico'sa.* $1\frac{1}{2}$. White. Java. G. C. 1889, v. p. 585.

Pho'r'bia cepeto'rum. The Onion Fly. Syns., *Anthomy'ia cepa'rum* and *Scato'phaga cepa'rum*. The onion is liable to attack by the grub or larva of this fly, especially when grown in light soils. 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 gaslime 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. Another easy method is to trench the ground rather deeply in winter and so bury the pupæ at such a

depth as to render it impossible for the flies to come to the surface the succeeding spring.

Pho'rmium. Flax Lily, or New Zealand Flax. (From *phormos*, a basket; one of the uses made of the fibre. Nat. ord., *Liliaceæ*; Tribe, *Hemerocallæ*.)

Half-hardy perennials. Divisions of the root; imported seeds; rich, mellow loam.

P. alpi'num. New Caledonia. 1890.

— *Cole'nsoi.* See *P. Cookianum*.

— *Cookia'num.* 3-6. Yellow. Summer. New Zealand. 1868. Syns., *P. Colensoi* and *P. Forsterianum*.

— — *variegat'um.* Leaves edged with creamy-white. 1878.

— *fla'ccidum.* New Caledonia. 1890.

— *Forsteria'num.* See *P. Cookianum*.

— *Hook'e'ri.* Yellow, greenish, red. New Zealand. 1888. B. M. t. 6973

— *Hursth'o'n'sii.* Purple. New Caledonia. 1890.

— *robu'stum.* New Caledonia. 1890.

— *te'nax.* 6. Green, white. August. New Zealand. 1798. B. M. t. 3199. There are now several varieties of this in cultivation, as *atropurpu'reum*, a dark purple form; *Moorla'ndii*, leaves variegated; *ni'gro-pi'ctum*, leaves edged with dark purple; *Saunder'sii*, a dwarf form; *Veitchia'num*, leaves short and narrow.

Photi'nia. (From *photeinos*, shining; appearance of the leaves. Nat. ord., *Rosaceæ*; Tribe, *Pomeæ*. Syn., *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 10. July. California. 1796. B. R. t. 491. Syns., *Cratægus arbutifolia* and *Mespilus arbutifolia*.

— *du'bia.* 10. Nepal. 1821. Linn Trans. xiii. t. 10.

— *elli'ptica.* 30. White. Nepal. 1823 Syn., *Eriobotrya elliptica*.

— *integrifo'lia.* 10. Nepal. 1820.

— *japo'nica.* 20. White. Autumn Japan. 1787. Syn., *Eriobotrya japonica*, B. R. t. 365. Japan medlar or quince.

— *serrula'ta.* 10. May. China. 1804

Phry'ma. Lopseed. (Derivation unknown. Nat. ord., *Verbenaceæ*.)

Hardy herbaceous perennial. Division; seeds Ordinary garden-soil.

P. leptosta'chya. 2-4. Purple. August N America. 1802.

Phry'nium. (From *phrynos*, a frog; because inhabiting marshes. Nat. ord., *Scitamineæ*; Tribe, *Marantææ*. Allied to *Canna*.)

Stove herbaceous perennials; yellow-flowered, where not otherwise specified. Seeds in a hot-bed 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. capitat'um. 5. White, purple. July E. Ind. 1807.

— *colorat'um.* 2. Orange. May. Brazil. 1828. B. M. t. 3010

— *como'sum.* A synonym of *Calathea comosa*.

P. de'nsum. See *Calathea densa*.

— *exi'mium.* See *Calathea eximia*.

— *flav'esens* and *grandiflor'um.* See *Calathea flavescens*.

— *myr'sma.* A synonym of *Calathea myrosma*

— *obli'quum.* 1½. June. E. Indies. 1824.

— *Parke'ri.* A synonym of *Ichnosiphon Parkeri*.

— *parviflor'um.* 4. July. E. Indies. 1820.

— *sangui'neum.* See *Maranta sanguinea*.

— *seto'sum.* A synonym of *Maranta setosa*.

— *spica'tum.* 1. July. E. Indies. 1820.

— *unilatera'le.* White. Madagascar. 1872.

— *Va'nden He'ckii.* See *Calathea Vanden Heckii*.

— *variega'tum.* 1. Leaves white, banded with green. Malacca? Ill. Hort. t. 606.

— *villo'sum.* See *Calathea villosa*.

Phycea'lla. (A diminutive of *phycos*, Red Alkanet; alluding to the colour of the flowers. Nat. ord., *Amaryllidaceæ*; Tribe, *Amaryllææ*.) See **Hippeastrum**.

P. attenuat'a, bi'color, biflo'ra, brevit'u'ba, cyrtanthoi'des, graciliflo'ra, i'gnea and *magnif'ica* are forms of *Hippeastrum bicolor*. — *chlora'cea.* See *Phædranassa chloracea*, B. R. 1845, t. 17.

— *Herbertia'na.* B. R. t. 1341. See *Hippeastrum Herbertianum*.

Phyge'lius. (Derivation unexplained, perhaps from *phyge*, shunning; from its having escaped the observation of botanists for a long time. Nat. ord., *Scrophulariaceæ*; Tribe, *Cheloneæ*.)

Herbaceous perennial, hardy south of London. Readily propagated from seeds, which are produced in abundance, and should be sown in a slight hotbed in spring, and afterwards transplanted to a warm sunny border. May also be propagated by cuttings of ripened shoots, and by division of the plant. Rich light loam.

P. cape'nsis. 3. Scarlet. Summer. Kaffraria. 1855. B. M. t. 4881.

Phylica. (From *phyllikos*, leafy; abundance of evergreen leaves. Nat. ord., *Rhamnaceæ*; Tribe, *Rhamnææ*.)

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, fibry peat, with nodules of freestone and charcoal. Winter temp., 40° to 45°.

P. bi'color. 2. June. 1817.

— *buzifolia.* 2-10. Summer. 1759. B. C. t. 848. Syn., *Soulangia buzifolia*.

— *capita'ta.* 1. June. 1800.

— — *lanceola'ta.* 2. Summer. 1800. Syns., *P. capitata* of B. R. t. 711, *P. plumosa* of B. C. t. 235, and *P. pubescens* of Aiton.

— *corda'ta.* Purple, yellow. May. 1789. Syn., *Soulangia cordata*.

— *cyli'ndrica.* 2. Yellow, green. June.

— *dio'ica.* 3. July. 1817. Syn., *Soulangia dioica*.

— *ericoi'des.* 3. June. 1731. B. M. t. 224.

— *exce'lsa.* 2-4. Syn., *P. spicata* of B. M. t. 2704.

— — *papillo'sa.* 3. Pale yellow. June. 1820. Syn., *P. papillosa*.

— *glob'o'sa.* 3. June. 1800.

— *imbrica'ta.* 1. October. 1801.

— *myrtifolia.* 3. Dark yellow. 1816. Syn., *Soulangia myrtifolia*.

- P. nitida*. November. 1774
 — *erio-phora*. 3. November. 1774.
 — *oleoi* des. 2. Syn., *P. spicata* of B. C. t. 323.
 — *papillo* sa. See *P. excelsa*, var. *papillosa*.
 — *pi* nea. November. 1774.
 — *pinifo* lia. 2. July. 1789.
 — *plumo* sa. 2. April. 1759. See also *P. capitata*, var. *lanceolata*.
 — *squarro* sa. 2. September. 1809. Syns., *P. pubescens* of B. C. t. 695, and *P. squarrosa*.
 — *pubescens*. B. C. t. 695. See *P. plumosa*, var. *squarrosa*.
 — *purpu* rea. 3. Red. December. 1827. Syns., *D. rosmarinifolia* of B. C. t. 849, and *Soulangia rubra*, B. R. t. 1498.
 — *rosmarinifo* lia. 3. 1815. See also *P. purpurea*.
 — *spica* ta of B. C. t. 323, see *P. oleoides*; of B. M. t. 2704, see *P. excelsa*.
 — *squarro* sa. See *P. plumosa*, var. *squarrosa*.
 — *thymifo* lia. 3. White. June. 1824. Syn., *Soulangia thymifolia*.

Phylla'gathis. (From *phyllon*, a leaf, and *agatheos*, divine; beauty of foliage. Nat. ord., *Melastomaceae*; Tribe, *Sonerileae*.)

Stove perennials. For cultivation, see MICONIA.

- P. gymnantha*. Pink. Borneo. 1884.
P. rotundifo lia. Pink. July. Sumatra. Leaves beautifully ribbed, and having a purplish metallic lustre; red beneath. B. M. t. 5282.

Phylla'nthus. (From *phyllon*, a leaf, and *anthos*, a flower; flowers produced on the edges of the leaves. Nat. ord., *Euphorbiaceae*; Tribe, *Phyllantheeae*.)

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 fibry peat, with a little broken bricks, charcoal, and dried cow-dung. Winter temp., 50° to 55°; summer, 60° to 85°.

ANNUALS AND BIENNIALS.

- P. maderaspatensis*. 1. Green, yellow. August. E. Ind. 1818. Biennial. Syn., *P. gracilis*.
 — *Niru* ri. $\frac{1}{2}$. Green. July. E. Ind. 1692.
 — *obova* tus. $\frac{3}{4}$. July. N. Amer. 1803. Hardy.
 — *urina* ria. $\frac{1}{2}$. Green, yellow. August. E. Ind. 1819.

STOVE EVERGREEN SHRUBS.

- P. angustifo* lius. 2. Red. July. Jamaica. 1789. Syns., *Xylophylla elongata*, B. C. t. 1091, and *X. montana*, B. M. t. 2652.
 — *arbu* scula. See *P. spectiosus*.
 — *atropurpu* reus. Polynesia. 1876.
 — *ceram* ica. A synonym of *Exocarpos ceramica*.
 — *Chantrie* ri. 2 $\frac{1}{2}$. Brick-red, pale yellow. Cochinchina. 1882. Rev. Hort. 1883, p. 537.
 — *di* sticha. 20-30. Green. Malaya. 1796. Syns., *P. longifolius*, Jacq. H. Schoenb. t. 194, and *Cicca disticha*.
 — *epiphylla* nthus. See *P. falcata*.
 — *falca* tus. 6. Red. July. W. Indies. 1699. Syns., *P. epiphyllanthus* and *Xylophylla falcata*, B. R. t. 373.
 — *fraximifo* lius. 4. Green. August. E. Indies. 1819.
 — *glauce* scens. Green, red. Siam. 1864.
 — *grandifo* lius. 5. Green, yellow. August. Tropical America. 1771. Syn., *P. juglandifolius*.

- P. juglandifo* lius. See *P. grandifolius*.
 — *kirgane* lia. See *P. reticulatus*.
 — *lanceola* ta. 3. Green, yellow. Bourbon. 1822.
 — *lined* ris. 1-2. White. Jamaica.
 — *lu* cens. A synonym of *Breymia fruticosa*.
 — *mimosoi* des. 13. Green. August. W. Indies. 1817.
 — *nivo* sus. Green; leaves mottled with white. Polynesia. 1873. Flor. Mag. new ser. t. 120.
 — *nutans*. 1 $\frac{1}{2}$. Green, yellow. August. Jamaica. 1820. Syn., *P. reticulatus* of B. C. t. 116.
 — *pallidifo* lius. Yellow, red. Summer. Java. Syn., *Reidia glaucescens*, B. M. t. 5437.
 — *polyphyl* lus. 2. Green. August. E. Indies. 1805. Syn., *P. racemosus*.
 — *racemo* sus. See *P. polyphyllus*.
 — *reticula* tus. 3. Red. August. E. Indies. Syn., *P. kirganalia*, *P. reticulatus* of B. C. t. 116 is *P. nutans*.
 — *salviafo* lius. Green, red. Summer. New Grenada. 1883. Rev. Hort. 1883, p. 175, figs. 34-36.
 — *scad* ndens. 10. Green, yellow. August. E. Indies. 1822. Climber.
 — *Seemannia* nus. 2. Whitish. New Hebrides. 1879.
 — *specio* sus. Whitish. September. Jamaica. 1818. Syns., *P. arbuscula* and *Xylophylla latifolia*, B. M. t. 1021.
 — *turbida* tus. 2. Green. July. China.

Phylla'rthron. (From *phyllon*, a leaf, and *arthros*, a joint; leaflets as if jointed to the footstalks. Nat. ord., *Bignoniaceae*; Tribe, *Crescentieae*.)

Stove evergreen shrub. Cuttings of stubby side-shoots, or pieces of the ripe young wood, in sand, under a bell-glass, in bottom-heat; sandy loam and fibry peat, and a little leaf-mould and charcoal. Winter temp., 50° to 55°; summer, 60° to 90°.

- P. Bojeria* na. 3. Rose. July. Mauritius. 1844. B. M. t. 4173.

Phyllis. (From *phyllon*, a leaf. Nat. ord., *Rubiaceae*.)

Greenhouse undershrub. Cuttings in sand, under a bell-glass.

- P. No* bia. 3. White. June. Canary Islands and Madeira. 1699.
 — *paucifo* ra. Flowers fewer than in the type.

Phylloca'ctus. (From *phyllon*, a leaf, and *cactus*. Nat. ord., *Cactaceae*.) This genus has been formed from the *Epiphyllum* section of *Cactus*.

For treatment, see CACTUS.

- P. Ackermanni*. Rich crimson. Summer. Mexico. 1829. Syn., *Cactus Ackermanni*, B. R. t. 1331.
 — *albus superbi* ssimus. Yellowish-white. Garden seedling. 1891.
 — *angul* liger. White, brown. October. Mexico. B. M. t. 5100.
 — *biformis*. 2 $\frac{1}{2}$. Pink. Honduras. 1839. B. M. t. 6156. Syns., *Cereus biformis* and *Discocactus biformis*. B. R. 1845, t. 9.
 — *caulorrhi* zus. White, pale green.
 — *crena* tus. Creamy-white. Honduras. 1839. Syn., *Cereus crenatus*. B. R. 1844, t. 31.
 — *cocci* neus. Scarlet.
 — *crue* ntum. Red. Hybrid. Flor. Mag. t. 413
 — *grandifo* rus. Large flowered variety. 1884. Gf. t. 1176.

- P. Hooke'ri*. 3. White. Summer. S. America. Syn., *Cactus Phyllanthus*. B. M. t. 2692.
 — *Jenkins'ni*. Crimson. A hybrid.
 — *latifrons*. 10. Creamy-white. Mexico. Syns., *Cereus latifrons*. B. M. t. 3813, and *C. oxyptelus*.
 — *multiflorus*. Reddish-crimson.
 — *phyllanthoides*. 3. Rose, white. June. 1810. Syns., *Cactus phyllanthoides*. B. M. t. 2092, and *C. speciosus*. B. R. t. 304.
 — *Phyllanthus*. 1-3. White or cream. June. S. America. 1710. Syns., *Cereus Phyllanthus* and *Epiphyllum Phyllanthus*.
 — *speciosissimus*. *crenatus* *Frangi*. Hybrid. Paxt. Fl. Gard. iii. t. 62.

Phyllocl'yx. (From *phyllon*, a leaf, and *kalyx*, a cup; the calyx is leafy. Nat. ord., *Myrtaceæ*.) United with **Eugenia** in the Genera Plantarum.

Stove or greenhouse shrub. For culture, see MYRTUS.

- P. edulis*. 4. White; fruit yellow, with an odour of pine-apple. Brazil. 1884. Rev. Hort. 1884, p. 348.

Phyllocladus. (From *phyllon*, a leaf, and *klados*, a branch; branch-like leafleted leaves. Nat. ord., *Coniferæ*; Tribe, *Taxææ*. Allied to *Podocarpus*.)

Greenhouse cone-bearing trees, from Van Diemen's Land, except *P. hypophylla*. 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, *rhomboidalis* (Celery-topped, or Adventure Bay Pine) bears the winter without protection; *trichomanoides* would be equally hardy in the south of Ireland and south-west of England. Winter temp., 40° to 48°; summer, 60° to 75°.

- P. glauca*. Yellow. 1853.
 — *hypophylla*. 10-30. Borneo.
 — *rhomboidalis*. 40. 1825. Syn., *Podocarpus asplenifolius*.
 — *trichomanoides*. 60. Yellow. July. 1840.

Phyllococe. (From *phyllon*, a leaf, and *dokein*, to shine; the leaves are shiny. Nat. ord., *Ericaceæ*.)

Hardy, heath-like shrubs, requiring a peaty soil. Propagation by layers.

- P. cœrulea*. See *P. taxifolia*.
 — *empetrifolius*. A synonym *Bryanthus empetrifolius*.
 — *taxifolia*. 2. Lilac. May. Britain. Syns., *P. cœrulea* and *Menziesia cœrulea*. B. C. t. 164. Eng. Bot. ed. 3, t. 886.

Phyllo'na. (From *phyllon*, a leaf, and *loma*, a border. Nat. ord., *Liliacæ*; Tribe, *Aloineæ*.) See **Lomatophyllum**.

- P. aloiflorum*. B. M. t. 1585. See **Lomatophyllum borbonicum**.

Phyllostachys. (From *phyllon*, a leaf, and *stachys*, a spike; the spikelets are inclosed in foliaceous bracts. Nat. ord., *Gramineæ*.)

Arborescent grasses. For culture, see BAMBUA. The stems of *P. nigra* form the Whangee Canes of commerce.

- P. bambusoides*. 10. Japan.
 — *nigra*. 5. China and Japan. Syn., *Bambusa nigra*.

Phyllo'ta. (From *phyllon*, a leaf, and *ous* (*otis*), an ear; shape of leaves. Nat. ord., *Leguminosæ*; Tribe, *Podalyriææ*. 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; fibry, sandy peat, and a few nodules of fibry loam, to keep the plants stubby. Winter temp., 40° to 48°.

- P. phyllicoïdes*. 2. Yellow. May. New South Wales. 1824. Syns., *P. aspera*, *P. comosa* and *P. squarrosa*.

Phyllotæ'nium. See **Xanthosoma**.

Phyllo'xera vasta'trix. See **Grape Phylloxera**.

Phymata'nthus. (From *phuma*, a tumour, and *anthos*, a flower. Nat. ord., *Geraniaceæ*.) See **Pelargonium**.

- P. elatius*. Swt. Ger. t. 96. A synonym of *Pelargonium elatum*.
 — *tricolor*. Swt. Ger. t. 43. A synonym of *Pelargonium tricolor*.

Phymato'des. (From *phuma*, a swelling; alluding to the thickened base of the fronds. Nat. ord., *Filices*—*Polypodiaceæ*.) A sub-genus of **Polypodium**.

Stove ferns. See **FERNS**.

- P. bifrons*. 1. Ecuador.
 — *Billardie'ri*. 1½. New Zealand.
 — *excavata*. 1. E. Indies.
 — *geminata*. 1. Brazil.
 — *leiorhiza*. E. Indies. 1844.
 — *longifolia*. Malay Archipelago.
 — *longipes*. 3. Malay Archipelago. 1823.
 — *longissima*. Malay Archipelago.
 — *nigræscens*. 3. Java. 1857.
 — *ni'da*. E. Indies.
 — *pellida*. 1½. E. Indies.
 — *pustulata*. 1½. New Zealand. 1820.
 — *sinuosa*. Java. 1859.
 — *terminalis*. 1. E. Indies.
 — *vulgaris*. E. Indies. 1823.

Phy'salis. (From *physa*, a bladder; alluding to the calyx. Nat. ord., *Solanaceæ*; Tribe, *Solanææ*.)

There are many species of this genus, but only the following are worth cultivating. They are herbaceous perennials; the first is hardy, the others are only half-hardy.

- P. Alkeke'ngi*. 1. White. July. S. Europe. 1548. Winter Cherry. Sibth. Fl. Gr. t. 234.
 — *edulis*. B. M. t. 1068. See *P. peruviana*, var. *edulis*.
 — *peruviana*. 3. Whittish; anthers violet. Fruit purplish. July. S. America. 1772.
 — *edulis*. 2. Yellow. Fruit yellow. July. S. America. 1773.—Cape Gooseberry. Syn., *P. edulis*.
 — *violacea*. 3. Yellow, purple. Fruit dark violet. Mexico. 1833. Syn., *P. violacea*.
 — *prostrata*. Aodr. Rep. t. 75. Now referred to CACABUS.
 — *Schradærid'na*. 1. White, with olive-green dots. Summer. Mexico, 1838.
 — *violacea*. Rev. Hort. 1832, p. 216. See *P. peruviana*, var. *violacea*.

Physia'nthus. (From *physa*, a bladder, and *anthos*, a flower; alluding to its shape. Nat. ord., *Asclepiadaceæ*.) See **Arauja**.

P. albens. B. M. t. 3201. See *Arauja sericifera*.
— *auricomus.* B. M. t. 3391. See *Arauja graveolens*.

Physic Nut. *Ja'tropha*.

Physidium. (From *physa*, a bladder, and *eidōs*, like; the lip of the flower is inflated. Nat. ord., *Scrophulariaceæ*.) A synonym of **Angelonia**.

P. cornigera. See *Angelonia cornigera*.
— *Gardneri.* See *Angelonia Gardneri*.

Physochlaina. (From *physa*, a bladder, and *chlaina*, an outer garment; referring to the swollen calyx of some species. Nat. ord., *Solanaceæ*; Tribe, *Hyoscyameæ*.)

Hardy herbaceous perennials. Common garden-soil. Increased by root division in autumn or early spring.

P. grandiflora. 1½. Green. May. Thibet. 1850. B. M. t. 4600.
— *orientalis.* 1½. Bluish-purple. March. Armenia. 1821. Syn., *Hyoscyamus orientalis*. B. M. t. 2414.
— *physalodes.* 1½. Violet-purple. March. Siberia. 1777. Syn., *Hyoscyamus physaloides*. B. M. t. 852.

Physosiphon. (From *physao*, to inflate, and *siphon*, a tube; because the tube of the flower is slightly inflated. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Pleurothalleæ*. Allied to *Stelis*.)

Stove epiphytcal orchids. For cultivation, see **PLEUROTHALLIS**.

P. guatemalensis. Yellow, purple. Guatemala. 1891.
— *Lodigesi.* Yellowish-green, red-orange. March. Mexico. 1828. Syn., *Stelis tubata*. B. C. t. 1601.
— *punctulatus.* Greenish-yellow, purple. Bogota. 1870.

Physostegia. (From *physa*, a bladder, and *stegē*, a covering; formation of the calyx. Nat. ord., *Labiatae*; Tribe, *Stachydeæ*. 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. cordata. Purple. July. N. Amer. 1824.
— *denticulata.* See *P. virginiana*, var. *denticulata*.
— *imbricata.* 3. Pale purple. September. Texas. 1833. B. M. t. 3336.
— *intermedia.* 1-3. Purplish. Summer.
— *speciosa.* See *P. virginiana*, var. *speciosa*.
— *truncata.* 1½. Pale pink. St. Felipe. 1834.
— *variegata.* See *P. virginiana*.
— *virginiana.* 1½. Red. August. N. Amer. 1683. Syns., *P. variegata* and *Dracocephalum virginianum*. B. M. t. 467.
— ——— 3. White. August.
— *denticulata.* Striped. August. Carolina. 1787. Syns., *P. denticulata* and

Dracocephalum denticulatum, B. M. t. 214.

P. virginiana speciosa. Pink. July. 1822. Syns., *P. speciosa* and *Dracocephalum speciosum*. Swt. Fl. Gard. t. 93.

Physostelma. (From *physa*, a bladder, and *stelma*, a girdle; in allusion to the corona. Nat. ord., *Asclepiadaceæ*; Tribe, *Marsdeniæ*.)

Climbing, stove shrub. For culture, see **HOYA**.

P. campanulatum. See *P. Wallichii*.
— *Wallichii.* Green, yellow. May. Malay Archipelago. 1845. Syns., *P. campanulatum* and *Hoya campanulata*. B. M. t. 4545.

Physostigma. (From *physa*, a bladder, and *stigma*; the stigma is furnished with a hood-like appendage. Nat. ord., *Leguminosæ*.)

Climbing, stove herb. The only species, *P. venosum*, is the Ordeal Bean of Old Calabar.

P. venosum. Purplish. Tropical Africa. Bent. and Tr. t. 80.

Physurus. (From *physa*, a bladder, and *oura*, a tail. Nat. ord., *Orchideæ*; Tribe, *Neottieæ*—*Spirantheæ*. 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. argenteus. ½. White. June. Ceylon. Syn., *Anæctochilus argenteus*.
— *decorus.* Whitish. Sumatra. 1873.
— *umbrellaris.* White, yellow. Brazil.
— *Lobbianus.* ½. Java. 1847.
— *maculatus.* Leaves green, dotted with white. Guayaquil. 1862. B. M. t. 5305.
— *nobilis.* Leaves dark-green, silvery veined. Brazil. 1865.
— *Ortiesii.* White. Columbia. 1873. Syn., *Anæctochilus Ortiesii*.
— *pictus.* ½. White. June. Brazil. 1844. Syns., *Anæctochilus argenteus*, var. *pictus*, *A. pictus* and *Microchilus pictus*.
— *Preslei.* Yellow. February. Maraquitá, Peru.
— *querceticolus.* N. America. Syn., *Anæctochilus querceticolus*.
— *rariflorus.* Yellow. March. Caraccas.

Phytarhi'za. See **Tillandsia**.

Phytelephas. (From *phyton*, a plant, and *elephas*, ivory; alluding to the seed, which, under the name of Ivory nut, is largely imported and used by turners in forming small ivory-like toys, buttons, etc. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

Stove evergreen tree. Imported seeds. Sandy loam and leaf-mould. Summer temp., 65° to 85°; winter, 50° to 60°.

P. macrocarpa. 18. New Grenada. 1846.— Ivory-nut Palm. Fl. Ser. tt. 496-497.

Phyteuma. Rampion. (An ancient name of a plant. Nat. ord., *Campanulaceæ*; Tribe, *Campanuleæ*. Allied to *Campanula*.)

Hardy herbaceous perennials, with two exceptions. Seeds and divisions in spring; common light garden-soil. Pretty little things for rock works and the front of borders.

- P. betonicæfolium*. 2. Pale blue. June. South Europe. 1818. *P. betonicæfolium* of B. M. t. 2066 is *P. Michelii*.
- *campanuloides*. 1. Blue. July. Caucasus. 1804. B. M. t. 1015.
- — *Sibthorpiænum*. July. Mount Olympus. 1804.
- *canescens*. 2. Lilac. July. Hungary. 1804.
- *Charméii*. 1. Blue. June. Pyrenees. 1823.
- *comosum*. $\frac{1}{2}$. Blue. June. Austria. 1752. Biennial. B. M. t. 6478.
- *cordatum*. B. M. t. 1466. See *P. orbiculare*.
- *globularifolium*. $\frac{1}{2}$. Blue. June. South of France. 1820.
- *Halle'ri*. $\frac{1}{2}$. Violet. May. South of France. 1822.
- *hemisphæricum*. 1. Blue. July. Switzerland. 1752. Jacq. Ic. t. 333.
- *hispidum*. 1. Blue. June. Switzerland. 1825.
- *hu'mile*. $\frac{1}{2}$. Blue. June. Switzerland. 1825.
- *inæquatum*. 1. Blue. June. Austria. 1820.
- *lancoletum*. $\frac{1}{2}$. White. June. Armenia. 1826.
- *limoniifolium*. Switzerland. 1832. Evergreen. Sibth. Fl. Gr. t. 218. Syns., *P. strictum* and *P. virgatum*.
- *Miché'ii*. $\frac{1}{2}$. Red. June. Switzerland. 1822. Syn. *P. betonicæfolium* of B. M. t. 2066.
- *nigrum*. $\frac{1}{2}$. Red. July. Bohemia. 1820.
- *orbiculare*. 1. Violet. July. England. B. C. t. 122.
- *decipiens*. Blue. July. Switzerland. 1819.
- — *gigantæum*. Blue. July. France. 1817.
- *parviflorum*. $\frac{1}{2}$. Blue. May. Switzerland. 1823.
- *pulchellum*. 1836.
- *Scheuchzeri*. $\frac{1}{2}$. Blue. May. Switzerland. 1813. B. M. t. 2271.
- *scorzonerifolium*. 1. Blue. July. Alps. 1819.
- *sibiricum*. 1. Blue. July. Siberia. 1817.
- *Sieberii*. 1. Blue. June. Pyrenees. 1826.
- *spicatum*. 2. Blue. May. Europe. 1597. B. M. t. 2347.
- *strictum*, B. M. t. 2145, and *virgatum*, B. C. t. 667. See *P. limoniifolium*.

Phytolacca. (From *phyton*, a plant, and *lacca*, lac; or the crimson colour of the fruit. Nat. ord., *Phytolaccaceæ*; Tribe, *Euphytolaccæ*.)

There are many tender species, but the following hardy herbaceous ones are all that are deserving notice. Seeds and divisions in spring; light, sandy soil and leaf-mould.

- P. acinosa*. North India. 1844.
- *decandra*. 5. White, green. August. S. Amer. 1768. Virginian Poke.
- — *albovariegata*. Garden variety. Rev. Hort. 1837, p. 16, fig. 2.
- *icosandra*. 2. Green. July. Mexico.
- *purpurea*. See *Ledenbergia roseo-ænea*.

Phytomyza ilicis. See **Holly-leaf fly.**

Piara'nthus. (From *piar*, fatness, and *anthos*, a flower; the flowers being succulent, as in *Stapelia*. Nat. ord., *Asclepiadaceæ*; Tribe, *Stapelieæ*.)

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. aridus*. $\frac{1}{2}$. Pale yellow. August. 1795.

- P. geminatus*. Orange-yellow, blood-red. Summer. 1796. Syn., *Podanthes geminata* and *Stapelia geminata*. B. M. t. 1326.
- *Gussoneanus*. $\frac{1}{2}$. Yellow, brown. June. 1832.
- *incarnatus*. 1. Flesh. June. 1793. A synonym of *Boucerosia incarnata*.
- *mammillaris*. Brown. June. 1774. A synonym of *Boucerosia mammillaris*.
- *parviflorus*. $\frac{1}{2}$. Yellow. August. 1796.
- *pu'llus*. $\frac{1}{2}$. Dark purple. August. 1774.
- *punctatus*. $\frac{1}{2}$. Dark purple. August. 1795.

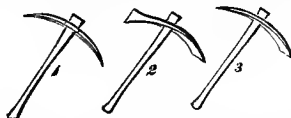
Picea. Silver Fir. (From *pix*, pitch; a resin-bearing genus. Nat. ord., *Coniferæ*.)

Hardy, evergreen trees, requiring the same culture as *ABIES*, which see.

- P. ajanensis*. 80. Japan. 1861. B. M. t. 6743. Syn., *P. jezoensis*.
- — *microsperma*. Japan. 1861. Syn., *Abies microsperma*.
- *alba*. 40. Canada. 1700. Fl. Ser. t. 2251. White Spruce.
- *Alcockiana*. 120. Japan. 1861.
- *alpestris*. Swiss Alps. 1887. A variety of *P. excelsa*.
- *Breweria*. 90. N. California. G. C. 1886, xxv. p. 497, fig. 93.
- *canadensis*. See *Tsuga canadensis*.
- — *microphylla*. See *Tsuga canadensis*, var. *microphylla*.
- *communis*. See *P. excelsa*.
- *concolor*. A synonym of *Abies concolor*.
- *Engelmanni*. 100. Rocky Mountains. 1864. Syn., *Abies Engelmanni*.
- — *glauca*. Leaves silvery.
- *eremita*. See *P. excelsa*, var. *eremita*.
- *excelsa*. 150. May. N. Europe. 1548. Syns., *P. communis*, *Abies excelsa*, *A. Picea* and *Pinus excelsa*. Norway Spruce Fir.
- — *attenuata*. A slender variety. Syn., *P. excelsa*, var. *tenuifolia*.
- — *au'rea*. Leaves tipped with gold.
- *capitata*. Garden variety with a more or less globular head. Rev. Hort. 1889, p. 393, fig. 103.
- — *Cianbrasiliana*. 4. There is a form *stricta*.
- — *e'legans*. 6. Compact.
- *eremita*. Bark reddish. Syns., *P. eremita*, *P. miniata*, *Abies eremita* and *A. miniata*.
- — *Finedone*. Young shoots pale yellow, changing with age through bronze to green.
- — *Grego'ryi*. Dense bush.
- — *horizontalis*. Branches more or less horizontal.
- — *inve'rsa*. Branches drooping.
- — *monstro'sa*. Branches straggling, but little branched. Syn., *P. excelsa*, var. *virgata*. Gfl. 1887, p. 321, fig. 128.
- — *na'na*. See *P. excelsa*, var. *pygmaea*.
- — *pu'mila glauca*. Dwarf, spreading.
- — *pygmaea*. 1. Pyramidal. Syn., *P. excelsa*, var. *nana*.
- — *pyramidalis*. Dwarf, pyramidal.
- — *re'sta*. Branches pendulous. Garden variety. Rev. Hort. 1890, p. 259, fig. 73.
- — *tenuifo'lia*. See *P. excelsa*, var. *attenuata*.
- — *variegata*. Variegated with yellow.
- — *virgata*. See *P. excelsa*, var. *monstro'sa*.
- *Gle'hni*. Dwarf. Japan. 1880.
- *jezoensis*. See *P. ajanensis*.
- *Maximowiczii*. Japan. 1880.
- *Menzie'ri*. See *P. sitchensis*.
- *miniata*. See *P. excelsa*, var. *eremita*.
- *Mori'nda*. 120. Himalayan Mountains. Syns., *P. Smithiana*, *Abies Morinda*, *A. Kuhnrow*, *A. Smithiana* and *Pinus Morinda*.

- P. nigr*. 80. N. America. 1700. Black Spruce.
 — *obovata*. Siberia. Syn., *Abies obovata*.
 — *japonica*. Japan. 1868.
 — *Omorika*. Servia. 1884. The Servian Pine.
 — *orientalis*. 80. Taurus. 1825. Syn., *Abies orientalis* and *Pinus orientalis*.
 — *na'na*. Dwarf, pyramidal. Garden variety. 1891.
 — *Parryana*. See *P. pungens*.
 — *polita*. 50. Japan. Syns., *Abies polita* and *Pinus polita*.
 — *pungens*. A tall tree. Rocky Mountain. Blue Spruce. Syn., *P. Parryana*.
 — *argentea*. Silvery. Syn., *P. Parryana*, var. *glauca*.
 — *rubra*. 50. N. America. 1755. Syns., *Abies rubra* and *Pinus rubra*.
 — *arctica*. Syns., *Abies rubra*, var. *arctica* and *Pinus rubra*, var. *arctica*.
 — *violacea*. Syns., *Abies rubra*, var. *violacea* and *Pinus rubra*, var. *violacea*.
 — *Schrenkiana*. Altai Mountains.
 — *sitchensis*. 70. N. California. 1831. Syns., *P. Menziesii*, *Abies Menziesii*, and *Pinus Menziesii*.
 — *Smithiana*. See *P. Morinda*.
 — *Tsu'ga*. See *Tsuga Sieboldii*.

Pick-axe should have a handle three feet and a half 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**.

Picridium. (From *Picris*, and *eidōs*, like. Nat. ord., *Compositæ*.)

Hardy, perennial herb. Divisions. Ordinary garden-soil.

P. tingitanum. 1½. Yellow. July. Tangiers. 1882.

Picrorhiza. (From *pikros*, bitter, and *rhiza*, a root; because of its bitter root. Nat. ord., *Scrophulariaceæ*; Tribe, *Digitalæ*.)

Hardy perennial herb. For cultivation, see WULFENIA, to which it is allied. The root is used in native Hindoo medicine.

P. Kurrooa. ½. Green. August. Himalaya. 1880.

Pictetia. (Named after A. Pictet, a physician. Nat. ord., *Leguminosæ*; Tribe, *Hedysaræ*. Allied to *Hedysarum*.)

Stove evergreen, yellow-flowered shrubs, 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. aristata*. 4. June. Domingo. 1816. Syn., *Æschynomene aristata*.
 — *squamata*. 4. St. Thomas. 1824. Syn., *Robinia squamata*.

Piera'rdia. (Named after Mr. Pierard, of Kew. Nat. ord., *Saxindaceæ*. Allied to *Melicocca*.)

Stove evergreen tree. Cuttings of half-ripe shoots in sandy soil, in heat, in spring; loam and peat. Winter temp., 50° to 55°; summer, 60° to 80°.

P. dulcis. 20. Yellow. Sumatra. 1820. Syn., *P. sapida*.

Pieris. (From *Pieria*, the supposed habitation of the Muses. Nat. ord., *Ericaceæ*.)

Hardy or half-hardy shrubs or trees. For culture, see *ANDROMEDA*.

P. floribunda. 2-6. White. April. United States. 1812. Syns., *Andromeda floribunda*, B. M. t. 1566, and *Leucothoe floribunda*.

— *formosa*. White. G. C. 1881, xv. p. 568, fig. 107.

— *japonica*. White. Japan. G. C. 1882, xvii. p. 796. Syn., *Andromeda japonica*.

— *elegantissima*. Leaves edged with white. Syn., *Andromeda japonica*, var. *variegata*.

— *mariana*. 4. White. May. N. America. 1786. Syn., *Andromeda mariana*, var. *ovalis*. B. M. t. 1759.

— *nivida*. 6. White to reddish-purple. March S. United States. 1765. Syn., *Andromeda coriacea*, B. M. t. 1095.

— *ovalifolia*. 40. Pinkish. May. Nepal. 1825. Half-hardy.

— *densiflora*. White. Assam. 1879.

— *phillyreaefolia*. 2. White. January to March. Florida. 1842. Syn., *Andromeda phillyreaefolia*. B. R. 1844, t. 36.

Pieris cratægi. Hawthorn, or Black-veined Butterfly. Is white, with black ribs or veins on the wings. It is very much like *Pontia 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.

Pigafetta. (After A. Pigafetta, an Italian, who accompanied Magellan's expedition. Nat. ord., *Palmæ*.)

Tall stove palm. For culture, see *METROXYLON*.

P. elata. Celebes. Syns., *Hyospathe elata* and *Metroxylonelatium*.

Pigeon Berry. *Phytolacca decandra*.

Pigeon Pea. *Cajanus indicus*.

Pig Nut. *Carya porcina*.

Pig Root. *Sisyrianchium*.

Pilea. (From *pilos*, a cap; alluding

to one division of the perianth. Nat. ord., *Urticaceæ*; Tribe, *Urticeæ*.)

Small stove herbs, easily increased from seeds, cuttings, or divisions. Rich sandy loam and peat. Summer temp., 60° to 85°; winter, 58° to 70°.

P. microphylla. W. Indies.
— *muscosa*. ½. May. Green. W. Indies. 1793. Syn., *P. serpyllifolia*.—Artillery or Pistol Plant.

Pilea'nthus. (From *pilos*, a cap, and *anthos*, a flower. Nat. ord., *Myrtaceæ*; Tribe, *Chamelauciceæ*. Allied to *Calytrix*.)

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. limacis. 2. April. White. Australia. 1824.

Pilewort. *Ramunculus Fica'ria*.

Pilocar'pus. (From *pilos*, a cap, and *karpos*, fruit; alluding to the shape of the fruit. Nat. ord., *Rutaceæ*; Tribe, *Xanthoxyleæ*.)

Stove shrub. For cultivation, see CHLOROPYLON.

P. pennatifolius. 6. Purple. Brazil.
— *pinnatifidus*. Maroon-red. Brazil. 1868.

Piloce'reus. (From *pilos*, wool, and *Cereus*; alluding to the long hairs upon the spine-cushions. Nat. ord., *Cactaceæ*.)

For cultivation, see CACTUS.

P. Bruenno'wii. Bolivia. Hamb. Gart. 1888, p. 85.
— *Celsia'nus*. 5. Bolivia.
— *chrysomallus*. 2. Mexico. Syn., *P. militaris*.
— *cœrule'scens*. Brazil. 1862.
— *columnna*. Mexico. Syn., *P. columna-trajani*. Rev. Hort. 1890, p. 130, fig. 40.
— *Curtisii*. Pink, white. New Grenada. Syn., *Cereus Royeni*, B. M. t. 3125.
— *Darwinii*. Peru. 1873.
— *Engelmanni*. Greenish-white. Arizona. 1862.
— *Forsteri*. 1886.
— *fossulatus*. Mexico. 1873.
— *Hoppenstedti*. Mexico. Hamb. Gart. 1888, p. 8.
— *Houlletii*. Rosy-violet. Arizona. 1861.
— *juba'tus*. Mexico.
— *niger*. Mexico. 1845.
— *polylo'phus*. Mexico.
— *Robi'ni*. Cuba. 1865.
— *scopari'us*. 1853.
— *senilis*. 1-25. Mexico. Old Man Cactus.
— *Vello'zii*. Brazil. 1862.
— *Willia'msii*. 1862.

Pilo'gyne. (From *pilos*, wool, and *gyne*, female; the pistil is hairy. Nat. ord., *Cucurbitaceæ*.) See **Zehneria**.

P. punctata. Wien. Gart. Zeit. 1889, p. 459, fig. 73. See *Zehneria scabra*.

Pilula'ria. (From *pilula*, a little ball; referring to the fruit receptacles. Nat. ord., *Marsileaceæ*.)

A small plant with creeping rhizome and filiform leaves, found in low lying meadows in

many parts of England. Of little horticultural value.

P. globulife'ra. ½. Capsules brown. England.

Pilu'mna. (From *pilos* or *pileos*, a cap; shape of flowers. Nat. ord., *Orchideæ*; Tribe, *Vandaceæ*.) See **Trichopilia**.

P. fra'grans. See *Trichopilia fragrans*.

— *la'ca*. See *Trichopilia laxa*.

— *nobilis*. Warn. Orch. Alb. t. 128. See *Trichopilia fragrans*, var. *nobilis*.

Pime'lea. (From *pimele*, fat; referring to the viscid matter on the leaves of some species, Nat. ord., *Thymelaceæ*; Tribe, *Euthymeleæ*.)

Greenhouse evergreen shrubs, from Australia. Seeds sown in a gentle hotbed, in spring; cuttings of young shoots in sand, under a bell-glass; sandy, fibry peat, with a third of fibry 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. White. May.

— *crini'ta*. See *P. imbricata*, var. *piliger*.

— *decussata*. 2. Red. May. 1824.

— *diosma'fo'lia*. 1. Rose. July. 1826. See also *P. ferruginea*.

— *drupa'cea*. 2-6. White, pinkish. May. B. C. t. 540. Victorian Bird Cherry.

— *e'legans*. See *P. ligustrina*, var. *hypericina*.

— *ferrug'nea*. 2. Red. May. 1824. Syns.,

P. decussata, B. C. t. 1283 and *P. diosma'fo'lia* of B. C. 1708.

— *filamentosa*. See *P. limifolia*.

— *glau'ca*. 1½. White. June. 1824. Syns.,

P. humilis, B. R. t. 1268 and *P. intermedia*, B. R. t. 1439.

— *Gni'dia*. 1-10. Red. Summer. New Zealand.

— *gracili'fo'ra*. 3. White. June. 1830. A form of *P. sylvestris*.

— *Henderso'ni*. B. M. t. 3721. See *P. rosea*.

— *hi'spida*. 4. Blush. May. 1830. B. M. t. 3459.

— *hu'milis*. See *P. glauca*.

— *hyper'cina*. See *P. ligustrina*, var. *hypericina*.

— *imbricata pili'gera*. 1½. White. August. 1837. Syns., *P. crinita* and *P. nana*

B. M. t. 3833.

— *incana*. See *P. nivea*.

— *interme'dia*. See *P. glauca*.

— *lanata*. See *P. sericea*.

— *ligustr'na hyper'cina*. 6. White. May. 1823. Syns., *P. elegans*, *P. hypericina*,

B. M. t. 3330, and *P. ligustrina*, B. R. t. 1827.

— *linifolia*. 2. White. May. 1793. Syn.,

P. filamentosa, *P. linoides* and *P. paludosa*.

— *linoi'des*. See *P. limifolia*.

— *longifo'ra*. 4. White. June. B. M. t. 3281.

— *macroce'phala*. B. M. t. 4543. See *P. suaveolens*.

— *na'na*. See *P. imbricata*, var. *piliger*.

— *Neypergia'na*. See *P. Preissii*.

— *nivea*. 6. White. June. 1833. Syn., *P. incana*. B. R. 1833, t. 24.

— *paludo'sa*. See *P. limifolia*.

— *paucifo'ra*. 10. White. May. 1812. B. C. t. 179.

— *Preissii*. 2. April. 1846. Syn., *P. Neypergiana*.

— *ro'sea*. 2. Red. June. 1800. B. M. t. 1458.

Syn., *P. Hendersoni*, B. M. t. 3721.

— *seri'cea*. 2. May. 1834. Syn., *P. lanata*.

— *spectabi'lis*. 4. White. May. 1840. Syn.,

P. Verschaefeltii, B. M. t. 3950.

— *spica'ta*. 2. White. June. 1824.

- P. suaveolens*, 3. Yellow. April. 1848. Syn., *P. macrocephala*.
 — *sylvestris*, 3. Blush. June. 1830. B. M. t. 3276. *P. graciliflora* is a broad leaved form of this.
 — *Verschaffeltii*. See *P. spectabilis*.

Pimenta. Allspice-tree. (From *pimento*, the Spanish name. Nat. ord., *Myrtaceæ*; Tribe, *Myrteæ*. 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, fibry loam. Winter temp., 50° to 60°; summer, 60° to 85°.

- P. acris*, 20-40. White, reddish. Summer. West Indies. 1759. Syn., *Myrcia acris*. B. M. t. 3153. Black Cinnamon or Wild Clove.
 — *officinatis*, 30. White. Summer. Jamaica. 1793. Syns., *P. vulgaris*, *Eugenia Pimenta* and *Myrtus Pimento*. B. M. t. 1236. Allspice.
 — *vulgaris*. See *P. officinatis*.

Pimento Bush. *Pimenta officinatis*.

Pimpernel. *Anagallis*.

Pina'nga. (Local name. Nat. ord., *Palmææ*; Tribe, *Areceæ*.)

Stove palms. For cultivation, see EUTERPE.

- P. coronata*, 20. Java. 1848. Syn., *Seaforthia coronata*.
 — *de'cora*. Borneo. 1886.
 — *globosa*. See *Calyptrocalyx spicatus*.
 — *Kuhlîi*. Java. 1873. Syns., *Ptychosperma Kuhlîi* and *Seaforthia Kuhlîi*.
 — *latise'cia*, 15. Sumatra. Syn., *Seaforthia latise'cia*.
 — *le'pida*. East Indies. 1888.
 — *maculata*. The leaves are marbled with light and dark green. Philippines. 1863.
 — *malawa'na*, 12. Penang. Syn., *Seaforthia malawana*.
 — *pa'tula*, 9. Sumatra. B. M. t. 6581.
 — *Saundersia'na*. Indian Archipelago. 1885.
 — *spectabilis*. Leaves light green above, silvery beneath. East Indies. 1885.
 — *ternate'nsis*. Ternate. Syn., *Areca gigantea*.
 — *Ve'i'thii*. Borneo. 1879. Fl. Ser. tt. 2405-6.

Pinaster. *Pinus pinaster*.

Pincenectitia, *glau'ca* and *P. tuberculata*. See *Beaucarnea stricta* and *B. 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.

Pinckne'ya. (Named after Mr. Pinckney, an American botanist. Nat. ord., *Rubiaceæ*; Tribe, *Condamineæ*. 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. pin'bens*, 20. Red. June. Georgia. 1786.

Pine. *Pinus*.

Pine-apples. *Anana'ssa*.

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.

Culture.—This usually commences in February. Have the upper thirty inches of the pit in which the pots are to be plunged filled with fresh tan. *Re-pot* your plants, using good strong turfy soil, well chopped to pieces when dry, but by no means riddled. Well made leaf-soil, and a little old dung, and bones, mixed with one-sixth of charcoal—or charred wood, such as will pass readily through a riddle of an inch mesh is also a useful compost.

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 thirteen 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 two 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 equalize itself, and the surplus to pass away. Thus there will be no occasion for any root-watering for nearly a month afterwards. 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 "	68 "	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 degree 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 about 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 evaporation will be more rapid; 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 perspiration, 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, etc., 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 applied 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 increase accompanied by a freer ventilation.

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, etc. 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* the 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, or Pine-bud Tortrix. This pretty little moth is a member of the group **Tortricina**, and bears the name of **Retinia turionana** (syn., *Orthotænia turionana*). In its larval stage it does considerable damage to the Spruce and other Fir trees by destroying the terminal buds, and thereby preventing the proper growth and development of the tree. The eggs are deposited upon the outside of the buds in July; they hatch in about two weeks, and the young larvæ immediately commence to eat their way into the interior of the buds, which they soon destroy, and eat their way downward through the pith to the next buds below, which they then attack and kill. About the end of October the larva is to be found

in the centre of the middle bud of a shoot, where it passes the winter. It is of a shining purplish-brown colour, with a transverse black spot on the first segment behind the head. During the winter it lies dormant, commencing to feed again the next spring. In June it is full fed; it then passes to the bottom of its burrow, and there changes to a brown chrysalis. About the middle of July the perfect moth emerges. It measures from half an inch to three-quarters of an inch in expanse; the colour is tawny-orange, with numerous



silvery white markings. Where this insect has commenced its depredations, the only possible means of eradicating it is by hand-picking the attacked buds and destroying the larvæ. This is best done in the month of June, before the moth makes its appearance, so as to prevent a further brood. The buds that are attacked may easily be identified by their drooping and withered appearance; and if this process of hand-picking be followed up for a few years, the insect may be nearly eradicated, or at least its numbers will be so decreased that it will do comparative little injury.

Pineaster Beetle. *Bo'strichus.*

Pine'llia. (Commemorative. Nat. ord., *Araceæ.*)

Hardy, tuberous herb. Division in winter.

P. tuberosa. Japan.

Pingu'cula. Butterwort. (From *pinguis*, fat; the greasiness of the leaves. Nat. ord., *Lentibularineæ.*)

Seeds and divisions; chiefly requiring marshy, boggy soil. North American species are the most tender, requiring the treatment generally given to alpinæ, with the addition of keeping water in the saucer below the pot in which they are grown.

P. alpinæ. †. White, tinted with lemon colour. June. Europe.

— *Bakeriana.* See *P. caudata.*

— *caudata.* Deep carmine. Autumn. Mexico. 1881. B. M. t. 6624. Syns., *P. Bakeriana*, *P. flos-mulionis*, and *P. orchidoides.*

— *edentula.* †. Yellow. April. N. America. 1823.

P. flos-mulionis. See *P. caudata.*

— *grandiflora.* †. Blue-violet. Summer. Britain. Eng. Bot. ed. 3, t. 1122. Syn., *P. vulgaris*, var. *grandiflora.*

— *hirtiflora.* Lilac, yellowish. Mountains of Italy and Greece. 1884. B. M. t. 6785.

— *lusitana.* †. Lilac, yellow. Summer. Europe. Eng. Bot. ed. 3, t. 1124.

— *lutea.* †. Yellow. June. N. America. 1816, reintroduced 1891. B. R. t. 126; B. M. 7203.

— *orchidoïdes.* See *P. caudata.*

— *vallisneriæfolia.* Lilac-purple. Summer. Mountains of Spain. 1878.

— *vulgaris.* †. Violet. Summer. Britain. Eng. Bot. ed. 3, t. 1121. Bog Violet, Butterwort.

— *grandiflora.* See *P. grandiflora.*

Pink. So little do the Pink, Picotee, and Carnation differ in their botanical characteristics, that they are all considered varieties of the Clove Pink (*Dianthus caryophyllus*). 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 (*Dianthus plumarius*). 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, as 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. 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 six inches above the soil around, and formed like a pitched roof. The compost should be at least a foot deep. Plant in rows, the first week in September, and twelve 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 Curassavica*.

Pinnate. A leaf is pinnate when several leaflets grow from the sides of one foot-stalk, as in the Pea, Acacia, etc.

Pinnatifid is when a leaf is cut across from the edge towards the centre nerve into several oblong parallel segments, as in *Ipomopsis*, etc.

Pinus. Pine-tree. (A name from Theophrastus. Nat. ord., *Coniferae* ; Tribe, *Abietinae*.)

Hardy evergreens, except where otherwise mentioned. 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.

HARDY.

- P. albicaulis*. Oregon. 1863.
 — *aristata*. 40. Snowy Range, N. America. 1863.
 — *arizonica*. Santa Rita Mountains. 1875.
 — *australis*. 70. S. United States. 1730.
 — *austrifolia*. See *P. Laricio*, var. *austrifolia*.
 — *averea*. Leaves tinged with gold. 1887.
 — *Ayacahuite*. 130. Mexico. 1840.
 — *Balfouriana*. 50. N. California. 1852.
 Hickory Pine.
 — *Banksiana*. 10. N. America. 1785.
 — *Benthamina*. See *P. ponderosa*.
 — *Bolandieri*. } See *P. contorta*.
 — *Boursieri*. }
 — *Bruttia*. See *P. pyrenaica*, var. *Bruttia*.
 — *Bungeana*. 80. China. 1846. Lace-bark Pine.
 — *Buonaparteana*. See *P. Ayacahuite*.
 — *californica*. See *P. insignis*.
 — *carpatia*. See *P. montana*.
 — *Cembra*. 50-100. Central Europe. 1746. Swiss Stove Pine.
 — *pu'nila*. 4. Siberia.
 — *cembroides*. 25. Mexico. 1830. Syn., *P. Llaveana*.
 — *Chihuahua*. 50. N. Mexico.
 — *contorta*. 30. California. 1831. G. C. 1883, xix. p. 45, fig. 5. Syn., *P. Bolanderi* and *P. Bourstieri*.
 — *Murrayana*. 80-120. California. Syn., *P. Murrayana*.
 — *Coulteri*. 70. California. 1832. Syn., *P. macrocarpa*.
 — *deflexa*. See *P. Jeffreyi*.
 — *densiflora*. 40. Japan.
 — *Don-Pedari*. See *P. Ayacahuite*.
 — *e'dulis*. North Mexico.
 — *exce'lsa*. 150. Himalayas. 1827.
 — *fl'xilis*. 50. California. 1851. White Pine.
 — *albicaulis*. See *P. albicaulis*.
 — *Fremontiana*. See *P. monophylla*.
 — *Grenvillea*. See *P. Montezumae*.
 — *halepensis*. 50. Levant. 1683. G. C. 1884, xxii. p. 552.
 — *conglomerata*. Cones clustered. Montenegro. 1869.
 — *maritima*. 40. May. Greece.
 — *Pithyusa*. Syria.
 — *inops*. 30. N. America. 1739.
 — *insignis*. 100. California. 1833. Syn., *P. californica* and *P. radiata*.
 — *insularis*. Philippines.
 — *Jeffreyi*. 150. N. California. Syn., *P. deflexa*.
 — *karamana*. See *P. Laricio*, var. *karamana*.
 — *Koreanis*. 30. Korea and Japan. 1861.
 — *variegata*. Garden variety. 1887.
 — *Lambertiana*. 150-300. California. 1827. Sugar Pine. G. C. 1885, xxii. p. 11.
 — *brevifolia*. Short-leaved.
 — *Laricio*. 150. S. Europe. 1814. Corsican Pine.
 — *austrifolia*. 100. Austria. 1835. Syn., *P. austriaca* and *P. nigra*. Black Pine.
 — *Heldreichii*. 1884.
 — *karamana*. Asia Minor. G. C. 1884, xxi. p. 480, fig. 91.
 — *Pallasiana*. 80. Crimea. 1790. Syn., *P. taurica*.
 — *pygmaea*. Dwarf. Leaves tufted at the ends of the branches.
 — *latifolia*. Santa Rita Mts. Arizona. G. and F. 1889, ii. p. 496, fig. 135.
 — *latisquama*. Mexico. G. C. 1882, xviii. p. 712
 — *Llaveana*. See *P. cembroides*.

- P. macrocarpa*. See *P. Coulteri*.
 — *macrophylla*. See *P. Montezumae*.
 — *maritima*. See *P. Pinaster*.
 — *Massoniana*. 80. Japan. 1854.
 — *mitis*. 20. N. America. 1739.
 — *montana*. 5-15. Mountains of Central Europe. 1779. Syns., *P. carpatica* and *P. Pumilio*.
 — *Montezumae*. 40. Mexico. Hardy in the S. and W. of England.
 — *monticola*. 100. N. California. 1831.
 — *Murghus*. See *P. montana*.
 — *na'na*. 2. Knee Pine.
 — *muricata*. 50. California. 1846.
 — *Murrayana*. See *P. contorta*, var. *Murrayana*.
 — *Pallasiana*. See *P. Laricio*, var. *Pallasiana*.
 — *Parryana*. California.
 — *parviflora*. 40. Japan. 1846.
 — *pa'tula*. Mexico. G. C. 1885, xxiii. p. 108.
 — *macrocarpa*. Mexico. G. C. 1891, ix. p. 435.
 — *persica*. South of Persia.
 — *Peuke*. Roumelia.
 — *Pinaster*. 80. S. W. Europe. 1596. Eng. Bot. ed. 3, t. 1381. Syn., *P. maritima*.
 — *Hamilloni*. Nice. 1825.
 — *variegata*. Leaves green and yellow.
 — *Pinea*. 60. June. South Europe. 1548.
 — *cretica*. Crete.
 — *fragilis*. 60. South Europe.
 — *ponderosa*. 100-150. California. 1827. Syns., *P. Benthamiana* and *P. Sinclairiana*.
 — *Jeffreyi*. See *P. Jeffreyi*.
 — *scopulorum*. Rocky Mountains. 1888.
 — *Pumilio*. See *P. montana*.
 — *pingens*. 40. S. United States. 1804.
 — *pyrenaica*. 80. Pyrenees. 1834.
 — *bruttia*. Leaves wavy.
 — *radia*. See *P. insignis*.
 — *reflexa*. Sierra Madre Mts. 1881.
 — *resinosa*. 80. N. America. 1756.
 — *rigida*. 40. E. United States. 1759.
 — *Russelliana*. See *P. Montezumae*.
 — *Sabiniana*. 120. California. 1832.
 — *serotina*. 40. N. America. 1713.
 — *Sinclairiana*. See *P. ponderosa*.
 — *sine nsis*. See *P. Massoniana*.
 — *Strobilus*. 200. April. N. America. 1705. Weymouth Pine.
 — *alba*. 100. May.
 — *bravifolia*. 100. April.
 — *excelsa zebriana*. Leaves transversely marked with white. Rev. Hort. 1889, p. 393, fig. 101.
 — *na'na*. Dwarf.
 — *sylvestris*. 190. Britain. Eng. Bot. ed. 3, t. 1380. Fir-tree, Scotch Pine, Deal Wood.
 — *altaica*. 50. Altai Mountains.
 — *argentea*. Leaves and cones silvery.
 — *columnaris compacta*. Garden variety. Rev. Hort. 1889, p. 393, fig. 102.
 — *fastigiata*. A form of strict habit.
 — *horizontalis*. Branches horizontal.
 — *latifolia*. Leaves broader.
 — *monophylla*.
 — *variegata*. Variegated.
 — *Tæda*. 80. May. Florida. 1713.
 — *tuberculata*. 40. California. 1847.
- HALF-HARDY EVERGREENS.
P. apulcensis. 50. Mexico. 1839.
 — *canariensis*. 40. Canaries. 1815.
 — *cembroides*. 30. Mexico. 1845.
 — *Devonia*. 80. Mexico. 1839.
 — *filifolia*. 60. Guatemala. 1839.
 — *Gerardia*. 50. Himalayas.
 — *Hartwegii*. 40. Mexico. 1839.
 — *leptophylla*. 80. Mexico. 1800.
 — *longifolia*. 60. Nepal. 1801.
 — *occidentalis*. 80. St Domingo.
 — *ocarpa*. 40. Mexico. 1839.
 — *ocarpoides*. Guatemala. 1839.
 — *Orizabe*. See *P. pseudo-strobilus*.

- P. pa'tula*. 65. Mexico. 1826.
 — *striata*.
 — *macrocarpa*.
 — *Pinea*. 60. Mexico.
 — *pseudostrobilus*. 70. Mexico. 1839.
 — *Russelliana*. Mexico. 1839.
 — *tenuifolia*. 100. Guatemala.
 — *Teocote*. 100. Mexico. 1826.
 — *Winchesteriana*. 80. Mexico. 1846.

The following species are now excluded from PINUS, and placed in the genus mentioned at the head of each list :

ABIES.

- P. ajacensis*.
 — *alba*.
 — *na'na*.
 — *ambilis*.
 — *aromatica*.
 — *balanica*.
 — *bracteata*.
 — *cephalonica*.
 — *falcatula*.
 — *firma*.
 — *Fraseri*.
 — *na'na*.
 — *grandis*.
 — *homolepis*.
 — *jezeensis*.
 — *Kuhntow*.
 — *lariocarpa*.
 — *microphylla*.
 — *mucronata*.
 — *nivigra*.
 — *noobilis*.
 — *Nordmanniana*.
 — *numidica*.
 — *orientalis*.
 — *picata*.
 — *Pindrow*.
 — *Pinsapo*.
 — *religiosa*.
 — *trigonata*.
 — *Webbiana*.

LARIX.

- P. Gmelini*.
 — *Griffithiana*.
 — *kamtschatica*.
 — *Larix*.
 — *pendula*.
 — *repens*.
 — *Ledebourii*.
 — *leptolepis*.
 — *microcarpa*.
 — *pendula*.
 — *sibirica*.

PICEA.

- P. excelsa*.
 — *Menziesii*.
 — *Morianda*.
 — *obovata*.
 — *Picea*.
 — *Apollinis*.
 — *leicodactyla*.
 — *polifolia*.
 — *rubra*.
 — *arctica*.
 — *violacea*.
 — *Schrenkiana*.
 — *sitchensis*.

PSEUDOTSUGA.

- P. Douglasii*.

TSUGA.

- P. Brunonia*.
 — *canadensis*.
 — *heterophylla*.
 — *Mertensiana*.
 — *Tsu'ga*.
 — *na'na*.

Pionandra. (Nat. ord., *Solanaceae*.)
 A synonym of *Cyphomandra*.

- P. fragrans*. See *Cyphomandra betacea*.

Pionea forficata. The Garden Pebble Moth. This is sometimes found amongst cabbages, and other Cruciferae, but does little damage. The moths, which appear in May and August, are of a dull straw colour, with markings of a pale brown. The larvæ are yellowish-green, with a darker line down the back and a pale one on each side. Hand-picking is the best remedy.

Piophilæ A'pii. The Celery-stem Fly. The larvæ of this fly are found in stems of celery. The flies are glossy black, with a mixture of golden-grey and yellow veins. Infected plants should be burnt.

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*.

Piper. Pepper. (From *pepto*, to digest; referring to the stimulating power. Nat. ord., *Piperaceæ*; Tribe, *Piperacæ*.)

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. acuminatum. Green. September. S. America. 1815. B. M. t. 1882.

— *belle*. 6. E. Ind. 1804. B. M. t. 3132.

— *borneense*. 1. Green. W. Borneo. 1882.

— *coriæum*. Green. Jamaica. 1815.

— *cubæba*. Java.

— *decurrens*. Leaves very large, purplish beneath. Columbia. 1876. Syns., *Artanthe decurrens* and *A. magnifica*.

— *discolor*. 4. July. W. Ind. 1821. B. C. t. 610.

— *excelsum au' reo-pitum*. Leaves with a large creamy blotch. New Zealand.

— *Frukadsu'ra*. Greenish. Japan. 1869.

— *geniculatum*. 2. Jamaica. 1823.

— *glabrum*. 10. Campeachy. 1768.

— *glaucescens*. 3. Peru. 1822.

— *laurifolium*. 10. July. W. Ind. 1768.

— *longum*. 6. June. E. Ind. 1788.

— *maculatum*. Purplish. Spring. West Indies.

— *meta'llicum*. Borneo. 1882.

— *nigrum*. 6. E. Ind. 1790. B. M. t. 3139.

— *ornatum*. Indian Archipelago. 1884.

— *porphyrophyllum*. Leaves purplish. Penang. Syn., *Cissus porphyrophyllus*.

— *pulchellum*. 3. Green. S. America.

— *rubronodatum*. Columbia. 1877.

— *rubrovenosum*. Leaves bright green, with rosy veins. 1887. Ill. Hort. 1887, p. 91, t. 53.

— *tomentosum*. 14. August. W. Ind. 1768.

— *trio'cum*. 6. E. Ind. 1818.

— *tuberculatum*. 6. S. Amer. 1816. Jacq. Ic. t. 211.

— *umbellatum*. 3. June. W. Ind. 1748. Jacq. Ic. t. 216.

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 or more in diameter are the best.

TABLE of the quantity of pipe, four inches diameter, which will heat one thousand 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°
Freezing point.	10°	126	160	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	

To ascertain by the above table the quantity of pipe which will heat one thousand 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. *Eriocaulon*.

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 shade from the sun until they are rooted. See **Carnation**.

Piptade'nia. (From *pipto*, to fall, and *aden*, a gland; alluding to the falling gland of the anthers. Nat. ord., *Leguminosæ*; Tribe, *Adenanthereæ*.)

Stove shrubs. For cultivation, see ACACIA.

P. guianensis. See *Strophodendron guianense*.
— *latifolia*. 4. E. Indies. 1820.

Pipta'nthus. (From *pipto*, to fall, and *anthos*, a flower; short duration of the flowers. Nat. ord., *Leguminosæ*; Tribe, *Podalyriæ*. Allied to *Anagryris*.)

Hardy deciduous shrubs. 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. nepalensis. 10. Yellow. May. Nepal. 1821. Swt. Fl. Gard. t. 264.

— *auræa*. Yellow. 1879. Syn., *Thermopsis nepalensis*, var. *auræa*.

— *tomentosus*. Covered with silky hairs. Yunnan, China. 1887.

Piptospa'tha. (From *pipto*, to fall, and *spathe*, a sheath or spathe; the top of the spathe falls off like an extinguisher after fertilization. Nat. ord., *Araceæ*; Tribe, *Philodendree*. Allied to *Schismatoglotitis*.)

Stove herbaceous perennial, of dwarf tufted habit. Divisions and seeds. Rich sandy loam, fibry peat, and rotten leaves well drained; requires a very moist atmosphere. Summer temp., 70° to 90°; winter, 60° to 65°.

P. insignis. Spathe green and pinkish; spadix white. Summer. N. Borneo. 1879. B. M. t. 6598.

Pique'ria. (Named after A. Piqueria, a Spanish botanist. Nat. ord., *Compositæ*; Tribe, *Eupatoriaceæ*.)

Hardy herbaceous plants. Seeds, but chiefly division in spring; common soil.

P. latifolia. 1½. Purple. July. Peru. 1800. Syns., *Ageratum latifolium* and *Phalaræa celestina*.

— *trinervis*. 2. White. July. Mexico. 1798. B. M. t. 2650. Perennial.

Pirique'ta. (Probably from the native name. Nat. ord., *Turneraceæ*.) A synonym of *Turnera*.

Pironnea'va. See *Æchmea*.

Pisci'dia. Jamaica Dogwood. (From *piscis*, a fish, and *cedo*, to kill; the leaves, twigs, and bark are used to stupefy fish. Nat. ord., *Leguminosæ*. Allied to *Andira*.)

Stove evergreen, white-flowered trees, from the West Indies. Cuttings of half-ripened shoots in sand, under a glass, in heat; sandy, fibry loam. Winter temp., 48° to 60°; summer, 60° to 85°.

P. carthagine'nsis. See *P. erythrina*.

— *erythrina*. 30. White. May. W. Indies. 1890.

— *longifolia*. See *Sesbania longifolia*.

Piso'nia. (After *Willem Piso*, a physician at Amsterdam in the seventeenth century. Nat. ord., *Nyctagineæ*.)

Stove or greenhouse shrubs. Loam. Cuttings. *P. aculeata*. 10. Green. March. W. Indies. 1806. West Indian Cockspur. Stove.

— *grandis*. See *P. inermis*.

— *inermis*. 10. Green. March. Australia. 1806. Syn., *P. grandis*. Greenhouse.

— *obtusata*. 4. Green. April. W. Indies. 1824. Stove.

Pista'cia. Pistachia-tree. (Altered from its Arabic name, *Foustag*. Nat. ord., *Anacardiaceæ*; Tribe, *Anacardiæ*. Allied to *Schinus*.)

P. mutica and *lenticus* 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 hardest 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. lenticus. 15. May. South Europe. 1654. B. M. t. 1967.

— *angustifolia*. 10. May. South Europe. 1667.

— *Chia*. May. Scio.

DECIDUOUS TREES.

P. americana. W. Indies.

— *atlantica*. A synonym of *P. mutica*.

— *mutica*. Russia. 1844.

— *Terebinthus*. 20. June. South Europe. 1656. Sibth. Fl. Gr. t. 956.

— *sphaerocarpa*. May. Evergreen.

— *vera*. 20. May. Syria. 1770.

— *narbonensis*. 20. April. Narbonne.

— *trifolia*. 20. May. Syria. Syn., *P. officinarum*.

Pi'stia. (From *pistillum*, the female organ; signifying the appearance of the spathe inflorescence. Nat. ord., *Araceæ*; Tribe, *Arinææ*.)

Beautiful stove aquatic. Seeds and divisions; rich, strong loam; a tub or tank in the plant-stove or aquarium.

P. Stratiotes. ½. Greenish. Jamaica. 1843. B. M. t. 4564. Water Lettuce.

Pistol Plant. *Pilea muscosa*.

Pistori'nia. (Derivation not explained. Nat. ord., *Crassulaceæ*.) See **Cotyledon**.

P. hispanica. See *Cotyledon hispanica*.

Pi'sum. The Pea. (From *pis*, the Celtic name. Nat. ord., *Leguminosæ*; Tribe, *Vicææ*.)

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*. A synonym of *Lathyrus magelanicus*.
 — *maritimum*. A synonym of *Lathyrus maritimus*.
 HARDY ANNUALS.
P. arve'nse. Sibth. Fl. Gr. t. 687. See *P. elatum*.
 — *elatum*. 6. Dark blue. Iberia. 1820. Syn., *P. arvense*.
 — *Joma'rdi*. 3. White. Egypt. 1820.
 — *sati'vum*. 3. White. South Europe.
 — *hu'mile*. 1. White.
 — *macrocarpum*. 4. White.
 — *quadratum*. 3. White.
 — *saccharatum*. 4. White.
 — *umbellatum*. 4. Purple. G. C. 1873, p. 45.
 — *thebaicum*. 3. 1825.

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.

Pitcairnia. (Named after *Dr. Pitcairn*. Nat. ord., *Bromeliaceæ*; Tribe, *Pitcairnieæ*. Allied to *Tillandsia*.)

Stove herbaceous perennials. Division, and by suckers in spring, or when they can best be obtained; sandy, fibry peat, and good, mellow loam. Winter temp., 50° to 55°; summer, 60° to 85°.

- P. a'lystos*. 3. White. September. Brazil. 1824. B. M. t. 2642. Syns., *P. odorata*, Gfl. t. 114, and *Tillandsia Schuckii*.
 — *albuco'folia*. Red. Martinique. 1837. Syn., *P. angustifolia* of some gardens.
 — *alta*. 3. Red. W. Indies. B. M. t. 6006. Syns., *P. intermedia* and *P. Skinneri*.
 — *Altenstei'nii*. 1½. Whitish; bracts crimson. Columbia. 1840. Syns., *P. undulatifolia*, B. M. t. 4241, *Lamprococcus Altensteini* and *Puya Altensteini*.
 — *giga'ntea*. 7. White. February. B. M. t. 4309. Syn., *P. undulatifolia*, var. *gigantea*.
 — *Andrea'na*. 1. Orange, yellow. Summer. Columbia. 1872. B. M. t. 6480.
 — *angustifolia*. 2. Scarlet. Santa Cruz. 1777. B. M. t. 1547.
 — *aphelandra'eflora*. Vermilion. Brazil. 1870. Syn., *Pepinia aphelandra'eflora*.
 — *arcua'ta*. Red, yellow. New Grenada. 1876. Syn., *Neumannia arcuata*. Rev. Hort. 1886, p. 108.
 — *atrору'bens*. 1½-3. Whitish. Mountains of

- Chiriqui. 1850. Syn., *Puya Warszewiczii*. B. M. t. 5225.
P. bractea'ta. 2. Scarlet. April. W. Indies. 1799. Syns., *P. commutata*, Gfl. t. 557, and *P. latifolia* of Red. Lil. t. 74.
 — *commuta'ta*. 1½. Scarlet. Tropical America. 1868. Syn., *P. Girooudiana*.
 — *sulphu'rea*. 2. Yellow. August. W. Indies. 1797. Syn., *P. sulphurea*.
 — *bromelio'flora*. 2. Scarlet. June. Jamaica. 1781. B. M. t. 834.
 — *chile'nsis*. 1. Scarlet. July. Chili. 1820.
 — *cinnabari'na*. Red. July. Brazil. 1851.
 — *coa'retata*. 4. Yellow. July. Chili. 1852.
 — *coerulea*. 3. Blue. N. Chili. 1826. Syns., *Puya coerulea*, B. R. 1840, t. 11, and *Puya Whytei*, B. M. t. 5732.
 — *commuta'ta*. See *P. bractea'ta*.
 — *coralli'na*. Red. Columbia. 1875. B. M. t. 6600.
 — *corcovade'nsis*. 1. Red. Brazil. 1884.
 — *Darblaya'na*. Garden hybrid. 1888.
 — *Decai'nei*. See *P. fulgens*.
 — *densiflora*. 3. Green, yellowish-red.
 — *echina'ta*. 6. Cream. June. New Grenada. 1852. B. M. t. 4709.
 — *exsca'pa*. See *P. heterophylla*.
 — *ferruginea*. 3. Pale yellow. Andes, not Mexico. Syn., *Puya grandiflora*. B. M. t. 5234.
 — *fla'mnea*. 2. Bright red. November. Rio Janeiro. 1825. B. R. t. 1092.
 — *flave'scens*. B. M. t. 6318. See *P. xanthocalyx*.
 — *flocosa*. 3. Blue. Venezuela. 1847. Syns., *Pourretia lanuginosa* and *P. violacea*.
 — *fulgens*. Crimson. Guadeloupe. 1851. Syns., *P. Decaisnei* and *P. L'Herminieri*.
 — *Funkia'na*. Yellow, white. Central America. 1851. Syn., *P. macrocalyx*. B. M. t. 4705.
 — *furfuracea*. B. M. t. 2657. See *P. latifolia*, var. *furfuracea*.
 — *graminifolia*. See *P. integrifolia*.
 — *heterophylla*. 2. Bright red. Central America. 1838. Syns., *P. cernua*, *P. exsca'pa*, B. M. t. 4591, *P. Moreni*, *Puya heterophylla*, and *P. longifolia*, Paxt. Fl. Gard. iff. p. 86.
 — *hu'milis*. 1. Scarlet. July. S. America. 1820.
 — *imbricata*. Yellow. Mexico. 1868.
 — *integrifolia*. 2. Red. August. W. Ind. 1800. B. M. t. 1462. Syn., *P. graminifolia*. There is a variety:—*major*.
 — *intermedia*. See *P. alta*.
 — *iridiflora*. 2. Scarlet. July. 1820.
 — *Jackso'ni*. 2. Scarlet. Gnatemala. 1850. B. M. t. 4540. Syn., *Lamprococcus Jacksoni*, Lem. Fl. Jard. t. 127.
 — *jalisco'na*. Deep rose, scarlet. Mexico. 1888.
 — *Karwinskia'na*. 2. Red. June. Mexico. Syns., *P. montalbensis* and *P. ringens*.
 — *latifolia*. 2. Scarlet. August. W. Indies. 1785. B. M. t. 856.
 — *Lehma'nni*. 3. Bright red. New Grenada.
 — *leiole'ma*. See *P. muscosa*.
 — *lepido'ta*. Orange, yellow. Venezuela. 1874.
 — *longifolia*. B. M. t. 4775. See *P. pulverulenta*.
 — *lu'tea*. 3. Yellow. 1853.
 — *macrocalyx*. B. M. t. 4705. See *P. Funkiana*.
 — *maidifolia*. 3. Greenish-white. May. Venezuela. 1848. Fl. Ser. t. 915. Syn., *Puya maidifolia*.
 — *Maro'ni*. Hybrid between *P. Altensteini* and *P. corallina*. 1884. Rev. Hort. 1885, p. 108.
 — *megasta'chya*. 3. Pale pink, dark blue. Andes of Pern. 1873. Syn., *Puya Roelzii*.
 — *montalbe'nsis*. See *P. Karwinskiana*.

- P. Moritziana*. 1½. Red, yellow. Mountains of Venezuela. 1874.
 — *Morre'nii*. See *P. heterophylla*.
 — *muscosa*. 1. Red. December. Central Brazil. 1838. B. M. t. 4770. Syn., *P. leiotelema*.
 — *ni'gra*. 1. Bright red, very dark purple. Ecuador. 1870. Syn., *Neumannia nigra*, Rev. Hort. 1881, p. 390.
 — *nubi'gena*. 3. Bright red. October. Venezuela. 1852. Fl. Ser. t. 847.
 — *odora'ta*. See *P. albiflos*.
 — *Palme'ri*. Light red. Mexico. 1888. G. and F. 1883, i, p. 211, fig. 38.
 — *petiola'ta*. 3. Greenish-white. Mountains of Guatemala. 1856. Syn., *Neumannia petiolata*.
 — *platyphy'lla*. See *P. bromeliæfolia*.
 — *pulverule'nta*. 12. Bright red. December. Andes of Peru. 1852. Syn., *P. longifolia*. B. M. t. 4775.
 — *pu'ngens*. Scarlet, yellow. Quito. 1863. B. M. t. 5356.
 — *puni'cea*. Red. July. Mexico. 1857.
 — *recu'rra*. 2. Milk-white. June. Brazil? 1839.
 — *ri'ngens*. Gfl. t. 53. See *P. Karwinskiana*.
 — *Roe'zlii*. 2. Scarlet. Organ Mts., Brazil. Belg. Hort. xxxv. p. 285, tt. 18-19.
 — *Skinne'ri*. See *P. alta*.
 — *speciosis'sima*. See *P. undulata*.
 — *sple'ndens*. 2. Bright red. Central America. 1851.
 — *stami'nea*. 2. Bright red. January. Rio Janeiro. 1820. B. M. t. 2411.
 — *suave'olens*. 2. Yellow. July. Organ Mts. 1826. B. R. t. 1099.
 — *sulphu'rea*. See *P. bracteata*, var. *sulphurea*. B. M. t. 1416.
 — *tabulae'formis*. Orange. Mexico. 1862. Belg. Hort. 1862, p. 257. Flor. Mag. t. 297. The leaves lie flat on the soil.
 — *undula'ta*. 1. Bright red. July. Brazil? 1843. Syn., *P. speciosissima*.
 — *undulati'folia*. See *P. Altensteinii*.
 — *giga'ntea*. See *P. Altensteinii*, var. *gigantea*.
 — *viola'cea*. 6. Violet. Mexico or Andes? 1833.
 — *vire'scens*. 2. Yellowish-green. March. Venezuela. 1857. Syn., *Puya virescens*. B. M. t. 4991.
 — *Warcewicziana*. See *P. Karwinskiana*.
 — *Wendla'ndi*. 3. Sulphur-yellow. 1853. Syns., *Neumannia sulphurea* and *Puya sulphurea*. B. M. t. 4696.
 — *xanthoc'a'tyza*. 2. Primrose-yellow. June. Brazil. 1877. Syn., *P. flavescens*. B. M. t. 6318.
 — *zeifo'lia*. 1½. White, reddish-yellow. Guatemala. B. M. t. 6535.

Pitcher-plant. *Nep'e'nthes* and *Sar-race'nia*.

Pitch-tree, Burgundy. *Pi'cea exce'lsa*.

Pitheco'tenium. Monkey's Comb. (From *pithex*, a monkey, and *kteis*, a comb. Nat. ord., *Bignoniaceæ*.)

- Stove climbing shrubs. For culture, see BIGNONIA.
 — *buccinato'rium*. Crimson, yellowish. July. French Guiana. Syn., *Bignonia cherere* of B. R. t. 1301. This is now known as *Bignonia buccinatoria*.
 — *Caroli'nae*. 10. White, yellow. May. Tropical America. Syn., *Bignonia Carolinae*, B. R. 1844, t. 54.
 — *clemati'deum*. White, yellow. Argentine Republic. 1890. Bull. Soc. Tosc. 1890, p. 24, t. 2. Syn., *Anemopogma clematideum*.

Pithecolo'bium. (From *pithekos*, an ape, and *lobos*, the lobe of the ear; on account of the native name—Monkey's earring. Nat. ord., *Leguminosæ*; Tribe, *Ingeæ*. Allied to *Albizzia*.)

Stove trees. For cultivation, see INGA.
 — *P. pruino'sum*. White. Queensland. 1869.

Pitto'sporum. (From *pitte*, to tar or pitch, and *sporos*, seed; seeds covered with resinous pulp. Nat. ord., *Pitto-sporaceæ*.)

Greenhouse, evergreen shrubs. Cuttings of shoots in sand, under a bell-glass, in April, and kept in a close frame, without bottom-heat; sandy, fibry loam and a few nodules of fibry peat. Winter temp., 38° to 48°; summer, 60° to 75°. *P. Tobira* and *undulatum* have delightfully-scented flowers, and both have stood against walls, in the climate of London, with a little protection.

- *P. Anderso'nii*. 4. Yellow. May. Australia. 1820.
 — *angustifo'lium*. See *P. phillyræoides*.
 — *bi'color*. 3. Chocolate. Van Diemen's Land. 1842.
 — *bracteola'tum*. Norfolk Island. 1837.
 — *cape'nse*. See *P. viridifolium*.
 — *coria'ceum*. 8. Blue. May. Madeira. 1783.
 — *corni'folium*. 3. Brown. May. New Zealand. 1827.
 — *crassti'folium*. 4 to 10. Brown-purple. New Zealand. 1872.
 — *Enderi*. Black purple. Australia. 1868.
 — *eugenio'ides variega'tum*. Leaves pale green with white borders. New Zealand. 1882.
 — *ferrugi'neum*. 6. Yellow. March. Guinea. 1787.
 — *fla'vum*. B. M. t. 4799. See *Hymenospodium flavum*.
 — *fru'itum*. See *P. revolutum*.
 — *glabra'tum*. 1½. Bright yellow. May. Hong-Kong. 1845.
 — *hirtum*. See *P. revolutum*.
 — *ligustrifo'lium*. See *P. phillyræoides*.
 — *mauritia'num*. See *P. senacia*.
 — *Ma'yii*. 3. 1845.
 — *oleifo'lium*. See *P. phillyræoides*.
 — *phillyræoi'des*. 4. Yellow. Summer. Australia. 1823. Syns., *P. angustifolium*, *P. ligustrifolium* and *P. oleifolium*.
 — *revolu'tum*. 6. Yellow. March. Australia. 1795. Syns., *P. fulvum*, *P. hirtum*, and *P. tomentosum*.
 — *rhytidoc'a'rpum*. White. Fiji. 1887.
 — *senacia*. 8. Yellow. May. Mauritius. 1825. Syn., *P. mauritiana*.
 — *tenuifo'lium*. 4. May. New Zealand. 1820.
 — *Tobira*. 12. White. May. Japan. 1804.
 — *toment'o'sum*. See *P. revolutum*.
 — *undula'tum*. 10. White, green. April. N. S. Wales. 1789.
 — *variega'tum*. 5. White, yellow. April. Gardens.
 — *viridifo'lium*. May. 1820. Syn., *P. capense*.

Pla'cea. (Commemorative. Nat. ord., *Amarylloideæ*. Allied to *Pancreatium*.)

Greenhouse bulbs. For cultivation, see NERINE.

- *P. Ar'ceæ*. 1½. Pale yellow, purple. Chili.
 — *grandi'flora*. White, crimson. Chili. 1869.
 — *orna'ta*. White, vermilion. May. Chili. 1840.

Plade'ra. (From *pladaros*, full of

moisture; referring to the nature of the places in which they grow. Nat. ord., *Gentianaceæ*; Tribe, *Chironiaceæ*.) Now referred to **Canscora**.

Greenhouse annual. For culture, see **CHIRONIA**.

P. decussa'ta. $\frac{1}{2}$. White. B. M. t. 3066.

Plagi'anthus. (From *plagios*, oblique, and *anthos*, a flower; in allusion to the unusual unequal-sided petals. Nat. ord., *Malvaceæ*; Tribe, *Malvaceæ*. Allied to *Malvastrum*.)

Hardy or greenhouse shrubs with white flowers. For cultivation, see **MALVAVISCU**.

P. betuli'nus. 49. New Zealand. 1870. Rib-bon-tree.

— *Dampieri*. See *P. Lampenii*.

— *divarica'tus*. 8. June. New Zealand. 1820. B. M. t. 3271.

— *Lampe'nii*. 8. Pale yellow. Winter. Tasmania. 1833. G. C. 1884, xxii. p. 200.

— *Lya'llii*. 20. White. New Zealand. 1871. B. M. t. 5935.

— *pulche'llus*. 4. March. Tasmania and Victoria. Syn., *Sida pulchella*. B. M. t. 2753.

— *sidoi'des*. September. Tasmania. 1834. B. M. t. 3396.

Plagioli'rion. (From *plagios*, oblique, and *leirion*, a lily; the perianth is oblique. Nat. ord., *Amaryllidaceæ*.)

Stove bulb, propagated by offsets.

P. Horsma'nni. $\frac{1}{2}$. White. June. Columbia. 1883. G. C. 1883, xx. p. 105, fig. 16.

Plagiolo'bium. (From *plagios*, transverse, and *lobos*, a pod. Nat. ord., *Leguminosæ*.) See **Hovea**.

P. chorozemae'folium. See *Hovea chorozemae'folia*.

— *ilicifo'lium*. See *Hovea ilicifolia*.

Pla'nera. (Named after *J. Planer*, a German botanist. Nat. ord., *Urticaceæ*; Tribe, *Ulmeeæ*. Allied to the Elm.)

Hardy herbaceous trees. Layers, and grafting on the elm; common, rich loam.

P. acumina'ta. See *Zelkova acuminata*.

— *aqua'tica*. 12. Brown. April. N. America. 1816. Syn., *P. Gmelini*.

— *carpini'folia*. Wats. Dendr. t. 106. See *Zelkova*.

— *Gmeli'ni*. See *P. aquatica*.

— *japo'nica*. See *Zelkova acuminata*.

— *parvifo'lia*. See *Ulmus parvifolia*.

— *Richa'rdi*. 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 scolope'n-dria*.

Planta'go. (A name used by Pliny. Nat. ord., *Plantagineæ*.)

Hardy perennials, propagated by seeds. The British species, especially *lanceola'ta* and *ma'jor* are very troublesome in lawns.

P. aqua'tica. See *Pistia stratiotes*.

— *brasili'e'nsis*. 1. Whitish. Summer. Brazil. 1823. B. M. t. 2616.

— *lanceola'ta margina'ta*. The leaves are bordered with white, and the flower spike is terminated by white spotted leaves. 1889. Increased by divisions.

Plantain. *Planta'go*. The name is also applied to some species of *Mu'sa*.

Pla'ntia. (Named by Dr. Herbert after *Mr. Plant*, nurseryman at Cheadle, in commemoration of his success in cross-breeding. Nat. ord., *Iridaceæ*; Tribe, *Moraceæ*.) Probably synonymous with **Hexaglottis**.

Greenhouse bulb. Seeds in spring, in a slight hotbed; offsets; light, rich, sandy loam; bulbs requiring to be taken up, or protected in a frame during winter.

P. fla'va. Yellow. June. Cape of Good Hope. 1842.

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 *Rhodo-de'ndron*, may be planted in October, as well as in July, August, 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 many of the following directions relative to planting ornamental trees and shrubs are 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 three feet deep. In the case of single plants, where a pit or hole only is required, the narrowest diameter ought to be four 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 firmly pressed down, and the pit filled up to near the surface of the ground, or to within three or four 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 four or five 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.

Flashing 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 very seldom require to be thus maimed.

Plaster of Paris. See **Gypsum**.

Platanthe'ra. (From *platys*, broad, and *anthera*, an anther. Nat. ord., *Orchideæ*; Tribe, *Ophrydeæ-Habenariæ*.) See **Habenaria**.

- P. cilia'ris.* See *Habenaria ciliaris*.
- *cris'ta'ta.* See *Habenaria cristata*.
- *dila'ta'ta.* See *Habenaria dilatata*.
- *fimbria'ta.* A synonym of *Habenaria psychodes*.
- *herbi'ola.* See *Habenaria herbiola*.
- *holope'tala.* See *Habenaria blephariglottis*.
- *Hook'e'ri.* See *Habenaria Hookeri*.
- *hyperbo'rea.* See *Habenaria hyperborea*.
- *inci'sa.* See *Habenaria incisa*.
- *psycho'des.* A synonym of *Habenaria psychodes*.
- *radia'ta.* A synonym of *Habenaria radiata*.
- *Susa'nica.* A synonym of *Habenaria Susanna*.

Platanus. Plane-tree. (From *platys*, broad; the wide-spreading head of the trees. Nat. ord., *Platanaceæ*.)

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.* See *P. orientalis*, var. *acerifolia*.
- *cunea'ta.* See *P. orientalis*, var. *cuneata*.
- *occidenta'lis.* 70. N. Amer. 1636. Wats. Dendr. t. 100.
- — *av'rea varia'ga'ta.* 70. 1846.
- — *fo'lis arge'n'teis.* Garden variety. 1887.
- — *heterophy'lla.* America. 1842.
- — *integri'fo'lia.* 70. 1845.
- *orienta'lis.* 50. Levant. 1548. Wats. Dendr. t. 101.
- — *acerifo'lia.* 70. Levant. Syn., *P. acerifolia*.
- — *cunea'ta.* 20. Levant. 1739. See *P. cuneata*.
- — *hispa'nica.* 70. Spain.
- — *lacini'a'ta.* 70. 1845.
- *monstro'sa.* 70. 1845.

Platycar'pum. (From *platys*, broad, and *karpos*, fruit. Nat. ord., *Rubiaceæ*.)

Stove tree. Loam and leaf-mould. Cuttings of half-ripened wood, in sand, under a bell-glass.

- P. orinoce'nse.* 20. Pale rose. Spring. Orinoco. 1813.

Platycar'rya. (From *platys*, broad, and *karyon*, a nut. Nat. ord., *Juglandaceæ*.)

A shrub, or small tree, hardy in sheltered positions in the south of England. For culture, see JUGLANS.

P. strobilacea. Yellowish-green. August. North China and Japan. 1844. Rev. Hort. 1888, p. 88, figs. 18-19. Syn., *Fortunaea chinensis*.

Platyrium. Elk's-horn or Stag's-horn Fern. (From *platys*, broad, and *keras*, a horn; form of the fertile fronds. Nat. ord., *Filices*—*Polypodiaceae*.)

Stove ferns. See FERNS.

P. aethiopicum. 3. Guinea. 1822. Hook. Gard. Ferns, t. 9. Syn., *P. Stemmaria*.

— *angolense*. Frond broad at the scarcely forked apex.

— *alcicornis*. ♂. Brown. August. N. S. Wales. 1808. B. R. t. 262-263.

— *majus*. Polynesia. 1870.

— *biflorum*. ♀. Brown. April. E. Ind. 1842.

— *Ghelli-neckii*. 1882.

— *grande*. Brown, July. Moreton Bay. 1828.

— Lowe, Ferns, vii. t. 64.

— *Hilli*. Queensland. 1878.

— *Stemmaria*. Lowe, Ferns, vii. p. 62. See *P. aethiopicum*.

— *Walli-chii*. Moulmein. 1860. Hook. Fil. Exot. t. 97.

— *Willi-neckii*. Java. 1875.

Platyrium. (From *platys*, broad, and *cheilos*, a lip. Nat. ord., *Leguminosae*; Tribe, *Genisteae*.) A synonym of *Hovea*.

P. Celsiana. See *Hovea Celsii*.

Platylinis. (From *platys*, broad, and *clinis*, a couch; referring to the shape of the clinandrium. Nat. ord., *Orchideae*; Tribe, *Epidendreae-Lipariceae*.)

Stove epiphytal orchids, with small flowers. For culture, see LIPARIS.

P. Cobbiana. See *Dendrochilum Cobbianum*.

— *cucumerinum*. Light green. East Indies. 1885. Syn., *Dendrochilum cucumerinum*.

— *filiformis*. Pale yellow. Manilla. 1836.

Syns., *Dendrochilum filiforme* and *D. glumaceum* of LIL. Hort. 1878, t. 323.

— *glumacea*. White; fragrant. Philippines. Syn., *Dendrochilum glumaceum*, B. M. t. 4853.

Platydon. (From *platys*, broad, and *kodon*, a bell; form of flower. Nat. ord., *Campanulaceae*.)

Hardy herbaceous perennials. Seeds and divisions in spring, and cuttings of young shoots in summer, under a hand-light; sandy, mellow loam.

P. autumnale. See *P. chinense*.

— *chinense*. 3. Blue. June. China. 1846.

Paxt. Fl. Gard. ii. p. 61. Syn., *P. autumnalis*.

— *grandiflorum*. 1. Blue. June. Dahuria. 1782. Syn., *Campanula grandiflora*, B. M. t. 252.

— *alba*. 1. White. June. North of China. 1845.

— *alba semipleina*. 1. White. June. China. 1845.

— *Marie-sii*. A plant of more dwarf habit than the type, but with larger flowers. 1881. Garden, March, 1885.

— *sinese*. Lem. Jard. Fl. t. 250. A synonym of *Campanula sinense*.

Platy crater. (From *platys*, broad, and *krater*, a bowl; in allusion to the expanded calyx of the barren flowers. Nat. ord., *Saxifragaceae*; Tribe, *Hydrangeae*.)

Hardy shrub. Allied to *PHILADELPHUS*, to which refer for cultivation.

P. arguta. Whitish. Japan.

Platylobium. Flat Pea. (From *platys*, broad, and *lobos*, a pod. Nat. ord., *Leguminosae*; Tribe, *Genisteae*. Allied to *Hovea*.)

Greenhouse evergreens, from Australia and Tasmania. Orange-flowered, except where otherwise mentioned. Seeds in spring, in a slight hotbed, after placing them several hours in water, at a temp. of 130°; also by cuttings of the half-ripened shoots in sand, under a bell-glass, in April; fibry, sandy peat chiefly, with a very little fibry loam, charcoal, and broken potsherds, with pots extra well drained. Stagnant water, especially in winter, destroys them. Winter temp., 40° to 48°.

P. formosum. 4. July. Australia. 1790. B. M. t. 469.

— *Murrayanum*. 1. Yellow, red. May. Tasmania. 1832. B. M. t. 3259.

— *obtusangulum*. 1. Yellow, red. May. Tasmania. 1832. B. M. t. 3258.

— *parvisolum*. 4. July. 1792. B. M. t. 1520.

— *triangulare*. 4. July. 1805. B. M. t. 1508.

EXCLUDED SPECIES.

P. lanceolatum. Andr. Rep. t. 205. See *Bossicea heterophylla*.

— *microphyllum*. B. M. t. 863. See *Bossicea microphylla*.

— *ovatum*. Andr. Rep. t. 266. See *Bossicea heterophylla*.

— *Scolopendrium*. Andr. Rep. t. 191. See *Bossicea Scolopendria*.

Platyoma. (From *platys*, broad, and *loma*, an edge. Nat. ord., *Filices*—*Polypodiaceae*.)

Stove, brown-spored fern. See FERNS.

P. andromedaeifolia. May. 1840.

— *atro-purpurea*. ♂. May. N. Amer. 1770.

— *bellum*. California. 1873.

— *brachypterum*. California. 1873.

— *Bridgesii*. California. 1875. Syn., *Pellaea Bridgesii*.

— *Brownii*. May. Australia.

— *calomelanos*. See *Pteris calomelanos*.

— *cordata*. See *Pellaea cordata*.

— *falca*. 1. May. N. Holland. 1823.

— *flexuosa*. May. Peru. 1838.

— *grandifolia*. 2. September. W. Ind. 1793.

— *ornithopus*. California. 1875. Syn., *Pellaea ornithopus*.

— *rotundifolia*. 1½. July. New Zealand. 1824.

— *sagittata*. 3. June. S. Amer. 1826.

— *ternifolia*. 1½. Mexico. 1840.

Platylophus. (From *platys*, broad, and *lophos*, a crest; seed-pod compressed so as to seem winged. Nat. ord., *Saxifragaceae*; Tribe, *Cunoniaceae*. 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. trifoliata. A synonym of *Weinmannia trifoliata*.

Platypetalum. (From *platys*, broad, and *petalum*, a petal. Nat. ord., *Cruciferae*; Tribe, *Camelineae*.) A synonym of **Braya**.

Hardy herbaceous perennial. Seeds and divisions in spring; sandy peat, in a very sheltered border, but better still treated as an Alpine herbaceous plant, by giving it rather a shady place in summer, and protecting it from wet and cold in winter.

P. purpura-scens. †. Purplish. May. Melbourne Island. 1827. Now known as *Braya purpurascens*.

Platystachys. (From *platys*, broad, and *stachys*, a spike. Nat. ord., *Bromeliaceae*; Tribe, *Tillandsiæ*.) See **Tillandsia**.

Platystemon. (From *platys*, broad, and *stemon*, a stamen. Nat. ord., *Papaveraceae*; Tribe, *Romneyæ*. Allied to *Platystigma*.)

Hardy, yellow-flowered annuals. Seeds in April; common, rich, light soil.

P. californicum. 1. August. California. 1833. B. M. t. 3579.

— *leiocarpum.* 1. July. N. California. 1837. B. M. t. 3750.

Platystigma. (From *platys*, broad, and *stigma*, the female organ. Nat. ord., *Papaveraceae*; Tribe, *Romneyæ*. Allied to *Platystemon*.)

Half-hardy herbaceous perennial. Seeds and divisions in spring; common, light soil; requires a little protection in winter.

P. lineare. †. Yellow. California. 1833. B. R. t. 1954.

Platytheca. (From *platys*, broad, and *theca*, a cell; the anther-cells are broad. Nat. ord., *Tremandreae*.)

Greenhouse shrub, with the habit of a heath. For culture, see **TETRATHECA**.

P. galioides. 1. Blue. June. S. W. Australia. Syn., *Tetratheca verticillata*. Paxt. Mag. xiii. p. 171.

Pleasure-ground is a collective name for that combination of parterres, lawns, shrubberies, ornamental waters, arbours, etc., which are noticed individually in these pages. One observation may be applied to all—let harmony 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 proportionate to the residence. It is quite as objectionable to be over-gardened as to be over-housed.

Plectocomia. (From *plektos*, plaited, and *kome*, leaves; probably from the leaves being used in plaiting. Nat. ord., *Palmeæ*; Tribe, *Lepidocarpeæ*.)

Stove palm. Seed. Sandy loam. Summer temp., 60° to 80°; winter, 50° to 55°.

P. Andersoni. India. 1874.

— *assamica.* 80. Yellow. Assam. 1841.

— *elongata.* Java. 1869.

— *himalayana.* Himalayas. 1878.

Plectranthus. (From *plektron*, a cock's spur, and *anthos*, a flower. Nat. ord., *Labiatae*; Tribe, *Ocimoideæ*.)

Herbaceous perennials, 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.

P. asper. See *Coleus barbatus*.

— *australis.* 3. Pale purple. Summer. Australia. B. C. t. 1185.

— *barbatus.* Andr. Rep. t. 594. See *Coleus barbatus*.

— *coleoides.* 1-2. Pale lilac. Neilgherries.

— *des.* Syn., *Coleus Colvillei*.

— *comosus.* B. M. t. 2318. See *Coleus barbatus*.

— *foetidus.* Purple? Australia. 1877.

— *Forska'hlui.* B. M. t. 2036. See *Coleus barbatus*.

— *fruticosus.* 4. Blue. Cape Colony.

— *incanus.* 3. Blue. July. 1822. Greenhouse herbaceous.

— *rubicundus.* See *Orthosiphon rubicundus*.

— *scutellarioides.* See *Coleus Blumei*.

— *ternatus.* †. Purple. August. Madagascar.

1821. Stove herbaceous. B. M. t. 2460.

Opime Plant.

— *ternifolius.* 2. Blue. August. Nepal.

1820. Greenhouse herbaceous. Ic. Pl.

t. 460.

— *viscosus.* 1½. Blue. August. E. Ind. 1826.

Stove evergreen. Now known as *Ocimum viscosum*.

Plectritis. (From *plektron*, a cock's spur; the flower being swollen in front. Nat. ord., *Valerianaceae*. Syn., *Betckea*.)

Hardy American annuals. Seeds in April, in common garden-soil.

P. brachystemon. White. June. North California. 1836.

— *congesta.* 1. Rose. July. California. 1826.

Syn., *Valerianella congesta*. B. R. t. 1094.

— *minor.* 1. Rose. July. 1826.

— *major.* 1½. Rose. August. California.

1836. Syn., *Betckea major*.

— *samoifolia.* 1. Rose. July. Chili. 1835

Syn., *Betckea samoifolia*.

Plectronia. (From *plektron*, a cock's spur; the tree armed with large spines. Nat. ord., *Rubiaceae*; Tribe, *Vanguerieae*. Allied to *Vangueria*.)

Greenhouse evergreen tree. Cuttings in sand, under a bell-glass, in May, and placed in a cold frame; sandy peat and fibry loam. Winter temp., 40° to 48°.

P. corymbosa. 20. White, green. Cape of Good Hope. 1816.

Plei'one. See **Cœlogyne**.

Pleione'ma is a garden corruption of **Pleroma**, which see.

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., *Filices*—*Polyodiaceae*.) Now regarded as a section of **Polypodium**.

Stove ferns, chiefly with brown spores. See **FERNS**.

P. albidosquamata. Borneo. 1864.

— *elongata.* Yellow. May. S. Amer. 1843.

— *ensifolia.* †. May. S. Amer. 1823.

— *fossa.* 1. Malay Archipelago. 1881.

- P. hasta*. China. 1865.
 — *incurva*. Java.
 — *lancoala*. 1. August. W. Ind. 1812.
 — *latifolia*. ½. May. S. Amer. 1823.
 — *ni*. ¾. May. Nepal.
 — *peru* ssa. Yellow. Brazil. 1842.
 — *p*lta. ¾. South Sea Islands. 1831.
 — *salsicifolia*. Yellow. August. Brazil.
 — *scipias*. Polynesia. 1832.
 — *se*rpens. ½. May. W. Ind. 1816.
 — *xiphias*. 1. South Pacific Islands. 1831.

Plerandra. (From *pleres*, full, and *aner*, a male; stamens many. Nat. ord., *Araliaceae*. Syns., *Bakeria* (of Seemann) and *Nesopanax*.)

Stove trees. Sand, loam and leaf-mould. Cuttings in sand, under a bell-glass, in heat.

- P. Græffei*. An error for *P. Grayi*.
P. Grayi. Green. Fiji. 1887.
P. vitiensis. Green. Fiji. 1887. Syns., *Bakeria vitiensis* and *Nesopanax vitiensis*.

Pleroma. (From *pleroma*, fulness; in allusion to the cells of the seed-vessel. Nat. ord., *Melastomaceae*; Tribe, *Osbeckieae*. Allied to *Osbeckia*. Syns., *Lasiandra* and *Tibouchina*.)

Stove Brazilian evergreen shrubs, chiefly with purple flowers. Cuttings of half-ripened, or rather, the short, stubby side-shoots in sand, under a bell-glass, in summer, and plunged in a little bottom-heat, lifting the edge of the bell-glass at night, to prevent damping; sandy, fibry peat, with a few nodules of fibry loam, and pieces of broken pots and charcoal, to keep the soil open, and particularly well-drained. Winter temp., 48° to 55°; summer, 60° to 85°. *Elegans* and several others do best in an intermediate house, not so hot as a stove. It does better in the greenhouse than in the stove.

- P. barbigerum lepidotum*. Violet-purple. Peru. Syns., *Lasiandra lepidota* and *Tibouchina Mathœi*.
 — *Benthiana* num. 6. August. 1841. B. M. t. 4007. Syn., *P. Kunthianum* of Paxt. Mag. xii. p. 125.
 — *elegans*. 5. June. Organ Mountains. 1844.
 — *Gaudichaudia* num. Rosy-violet. Summer. Brazil. 1836. Syns., *Pleionema Gaudichaudiana*, *Lasiandra petiolata*, B. M. t. 3766, *Rhezia petiolata* and *R. petiolaris*.
 — *Gaya* num. White, yellow. Late autumn. Peru. 1874. B. M. t. 6345.
 — *glomeratum*. A synonym of *Osbeckia glomerata*.
 — *granulosum*. 6. Rio Janeiro. 1816. Syns., *Lasiandra Fontanestana* and *Melastoma granulosum*. B. R. t. 671.
 — *heteromallum*. 4. July. 1819. Syn., *Melastoma heteromallum*. B. M. t. 2337.
 — *holosericeum*. 5. July. Rio Janeiro. 1816. Syn., *Lasiandra argentea*.
 — *Kunthianum* of Paxt. Max. xii. p. 125, see *P. Benthianum*; of others, see *P. semidecandrum*.
 — *macranthum*. B. M. t. 5721. See *P. semidecandrum*.
 — *marmoratum*. Bluish-purple. Leaves dark green, mottled with white. 1884.
 — *sarmentosum*. Violet. Cool valleys of Peru. 1867. Greenhouse. B. M. t. 5629.
 — *semidecandrum*. Purple. July. Brazil. 1847. Syns., *P. macranthum*, B. M. t. 5721, *P. Kunthianum*, B. M. t. 4412, and *Lasiandra macrantha*.
 — *floribundum*. Violet-blue. St. Catherine's, Brazil. 1870. Syn., *P. macranthum*, var. *floribundum*.

- P. villosum*. 3. White. July. 1820. Syns., *Dissotis villosa* and *Melastoma villosum*. B. M. t. 2630.
 — *vimi* neum. 6. July. 1821.

Pleuraandra. (From *pleuron*, a side, and *aner*, a male; the stamens arranged on one side of the pistil, giving the centre of the flower a one-sided appearance. Nat. ord., *Dilleniaceae*.) A synonym of **Hibbertia**.

- P. acicularis*. See *Hibbertia acicularis*.
 — *calycina*. See *Hibbertia stricta*.
 — *cono*rum. See *Hibbertia nitida*.
 — *ericafolia*. See *Hibbertia stricta*.
 — *nitida*. See *Hibbertia nitida*.
 — *scabra*. See *Hibbertia Billardieri*.
 — *stricta*. See *Hibbertia stricta*.

Pleuri'dium. (From *pleuron*, a side; alluding to the lateral attachment of the fructification. Nat. ord., *Filices* — *Polypodiaceae*.) A section of **Polypodium**.

- Stove ferns. See FERNES.
P. crassifolium. 3. Tropical America. 1823.
 — *juglandifolium*. 2½. E. Indies.
 — *palma* tum. 1. Java.
 — *rupes* tre. 1. Java. 1857.
 — *venustum*. 1½. E. Indies.

Pleurogramma. (From *pleuron*, a side, and *gramma*, writing; disposition of the spore or seed-cases. Nat. ord., *Filices* — *Polypodiaceae*.) Now united with **Monogramme**.

- Stove fern. See FERNES.
P. linearis. Brown. June. Jamaica. 1823.

Pleurogyne. (From *pleuron*, a side, and *gyne*, the female organ; the stigmas issue from the side of the seed-vessel. Nat. ord., *Gentianeae*; Tribe, *Swertieae*. Allied to *Gentiana*.)

- Hardy annual. Seeds in April; chalky loam, and a small portion of peat.
P. carinthica. ¾. Blue. August. Siberia. 1827. Syn., *P. rotata*.
 — *rotata*. See *P. carinthica*.

Pleurope'talum. (From *pleuron*, a side, and *petalon*, a petal; referring to the shape of the corolla. Nat. ord., *Portulacaceae*.)

Stove shrub. Rich sandy loam mixed with a little peat or leaf-mould. Cuttings in bottom-heat under a bell-glass.

- P. costaricensis*. Green to scarlet. August. Central America. 1883. B. M. t. 6674. Syn., *Melanocarpum Sprucei*.

Pleurospe'rmum. (From *pleuron*, a side, and *sperma*, seed; the fruit has large ridges on its sides. Nat. ord., *Umbelliferae*.)

- Hardy perennial. Common garden-soil. Seeds; divisions.
P. austriacum. 3. White. Summer. South Europe. 1597.

Pleurotha'llis. (From *pleuron*, a side, and *thallo*, to bloom. Nat. ord.,

Orchideæ; Tribe, *Epidendrea-Pleurothalleæ*. Allied to *Masdevallia*.)

Steve 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 the 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.

- P. apthosa*. Yellow. January. Mexico. 1839.
 — *atropurpurea*. †. Dark purple. Jamaica. 1838. Syns., *Cryptophoranthus atropurpureus* and *Masdevallia fenestrata*. B. M. t. 4164.
 — *auriculigera*. Yellowish. Brazil. 1871.
 — *aviceps*. Green, yellow. Brazil. 1871.
 — *Barberiana*. Pale ochre, dark purple, whitish. January. Tropical S. America. 1881.
 — *bicarinata*. †. Greenish-yellow. Brazil. 1839. B. M. t. 4142.
 — *bilameella*. Cinnabar-red. Mexico. 1870. Ref. Bot. t. 95.
 — *Bowmanii*. Brazil. 1869.
 — *cardiocrepis*. September. 1891.
 — *ciliata*. †. Yellow. Demerara. Ref. Bot. t. 142.
 — *circumplexa*. Green. February. Mexico. 1837.
 — *coccinea*. See *Rodriguezia secunda*.
 — *discolor*. †. Yellow. August. Trinidad. 1880.
 — *e'legans*. Violet. New Grenada.
 — *ferus*. Purple. September. Peru. 1839. Syn., *P. luteola*.
 — *fragilis*. Orange, yellow. May. Rio Janeiro. 1841.
 — *floripeten*. Yellowish, purple. Venezuela. 1867.
 — *fulgens*. Scarlet. Costa Rica. 1875.
 — *gelida*. Yellowish. May. Jamaica. 1841.
 — *geniculata*. Pale yellow. Mexico. Syn., *P. Hartwegii*.
 — *glossopogon* of B. M. t. 6936. See *P. insignis*.
 — *grandiflora*. Peru. 1842.
 — *Grobyi*. †. Yellow, crimson. Brazil. 1834. B. M. t. 3682.
 — *Hartwegii*. See *P. geniculata*.
 — *hemisphaerica*. White, red. Columbia. 1852.
 — *insignis*. Pale green, dull purple, blackish-purple. Venezuela? 1837. Syn., *P. glossopogon* of B. M. t. 6936.
 — *Lanceana*. †. Yellow, crimson. Surinam. 1831. B. C. t. 1767.
 — *lateritia*. Red. Costa Rica. 1872.
 — *lingua*. Purple. August. Mexico. 1842.
 — *liparanges*. Pale reddish-ochre. Brazil. 1885.
 — *longissima*. Greenish. Ref. Bot. t. 141.
 — *luteola*. See *P. fragilis*.
 — *macroblepharis*. Whitish, blackish. Peru. 1875.
 — *maculatus*. Yellow, crimson. Brazil? Syn., *Cryptophoranthus maculatus*.
 — *monophyllus*. White. Demerara. Syn., *Epidendrum* (?) *monophyllum*.
 — *muscoideus*. Pale yellow. June. Brazil. 1837.
 — *mutabunda*. February. Brazil.
 — *oblongifolia*. Red. Jamaica.
 — *obovata*. Pale yellow. May. Brazil. 1834.
 — *occulta*. Brown. January. Brazil. 1837.
 — *ochrea*. Red, yellow. September. Brazil. 1839.
 — *octomeroides*. November. Mexico.
 — *ophiocephala*. See *Restrepia ophiocephala*.
 — *orbicularis*. Demerara. 1842.
 — *ornata*. Yellow with purple spots. April. Mexico. B. M. t. 7094.
 — *pachygloussa*. Purple. March. Mexico. 1837.
 — *pandurifera*. Yellow. Brazil.

- P. pa'rdipes*. Yellowish-brown. Brazil. 1868.
 — *pectinata*. Green, purple. July. Brazil. 1837.
 — *pedunculata*. Green. December. Caraccas. 1852.
 — *pectata*. Yellow, red. Demerara. G. C. 1837, ii. p. 431.
 — *plantaginea*. Jamaica.
 — *platyrrhina*. †. Yellow. Cesta Rica. 1834. B. M. t. 1884.
 — *platystachyus*. Green, with purple dots. Brazil. 1888.
 — *plumosa*. Green, purple. Trinidad. 1840.
 — *polyrrhina*. Whitish-green. Costa Rica. 1871.
 — *prolifera*. †. Purple, pink. November. Brazil. 1826. B. R. t. 1928.
 — *pulchella*. Purple. Peru.
 — *punctata*. See *Notylia punctata*.
 — *punctulata*. Light yellow, with purplish-brown spots. New Grenada. G. C. 1883, iv. p. 756.
 — *pyrroides*. Orange. Central America. 1876.
 — *recurva*. Purple. January. Brazil. 1841.
 — *Regelia*. Reddish ochre, whitish; lip rosy. Minas Geraes, Brazil. 1886.
 — *restrepoides*. Purple green. Peru.
 — *Reymondii*. Dull purple. Mexico. 1863.
 — *Roëzii*. Purplish-brown. Columbia. Orch. 1888, p. 80.
 — *ro'seo-punctata*. White, rose. Sierra Nevada.
 — *rubens*. Reddish. June. Brazil.
 — *Saunderiana*. Whitish-brown. Brazil. 1866.
 — *scapha*. Whitish, brownish-purple. July. 1874. A very fine species.
 — *scia'ra*. Cinnabar, orange. 1876.
 — *semipellucida*. April. Peru and Columbia.
 — *seriata*. Yellow, green. May. Brazil. 1842.
 — *sertularioides*. White. Jamaica.
 — *sicaria*. Green, yellow. May. Trinidad. 1841.
 — *Smithiana*. Green, purple. May. Rio Janiero. 1842.
 — *spectabilis*. Whitish (hyaline), mauve, purple, olive-brown. G. C. 1882, xviii. p. 457.
 — *stenopetala*. Brown, yellow. July. Brazil. 1837.
 — *strupifolia*. Purple, white. Year. Brazil. 1837.
 — *tes'eres*. Cinnamon. August. Brazil. 1842.
 — *testofo'lia*. 1. Jamaica. 1881.
 — *tigrina*. Yellow, purple. August. Mexico. 1838.
 — *tribuloides*. †. Brick-red. Jamaica. G. C. 1887, ii. p. 335.
 — *tricarinata*. Orange. Peru.
 — *velaticarilis*. September. Columbia.
 — *velatipes*. May. Venezuela.
 — *villo'sa*. Purple. May. Mexico. 1838.
 — *vitta*. Purple. April. Mexico. 1837.
 — *Wendlandiana*. November. Tropical Amer.

Plocama. (From *plokamos*, bent hairs. Nat. ord., *Rubiaceæ*.)

Greenhouse shrub, with slender, pendent branches. Mixture of loam and peat. Cuttings in sand under a bell-glass.

- P. pedicula*. 2. White. Canary Islands. 1772.

Plocoglossis. (From *plokos*, a fold, and *glotta*, a tongue; in allusion to a fold in the lip. Nat. ord., *Orchideæ*; Tribe, *Vandee-Cyrtopodieæ*.)

Stove epiphyte. For cultivation, see CYRTOPODIUM, to which it is allied.

- P. Lowii*. Ochre, brown. Borneo. 1865.

Plocostemma. (From *plokos*, curled, and *stemma*, a crown; referring to the crown of the stamens. Nat. ord.,

Asclepiadaceæ; Tribe, *Marsdeniææ*.) See **Hoya**.

P. lasianthum. B. M. t. 5081. See *Hoya lasiantha*.

Ploughman's Spikenard. *Baccharis*.

Plum. *Prunus domestica* or *insittia*.

Superior kinds:—1. Smith's Orleans; 2. Greengage; 3. Précoce de Tours; 4. Washington; 5. White Magnum Bonum; 6. Impératrice; 7. Denistoun's Superb; 8. Golden Drop; 9. Early Favourite; 10. Ickworth Impératrice; 11. Cox's Late Red; 12. Jefferson's; 13. Reine Claude-Violette; 14. Royal Hâtive; 15. Wine Sour. Of these, Nos. 1, 3, and 9 are remarkable for their earliness as table fruit. Nos. 6, 7, 10, 11, 12, 13, for lateness as table fruit. Nos. 4, 7, 12, 15 are adapted for the kitchen. Others that require special mention are: Cooper's Large; Early Rivers; Guthrie's Late Green; Red Magnum Bonum; The Czar; Victoria, etc.

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, etc., it is a question whether the Mussel stock would not be better. 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, etc., will be found detailed in the articles **Peach** and **Pear**.

Culture during the Growing Period.—As with the Peach, the Nectarine, Pear, etc., 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 foreright 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 six inches long, should have the points pinched off by way of balancing. 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 shoot-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**.

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., *Plumbaginaceæ*.)

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 fibry peat and dried leaf-mould.

GREENHOUSE EVERGREENS.

- P. cœrulea*. 1½. Blue. Summer. South Amer. 1826. Syn., *P. rhomboidea* of B. M. t. 2917. Annual.
- *capensis*. 1½. Blue. November. Cape of Good Hope. 1818. B. M. t. 2110.
- *alba*. White. 1886.
- *tristis*. 1½. Brown. May. Cape of Good Hope. 1792.

STOVE EVERGREENS.

- P. mexicana*. See *P. scandens*.
- *occidentalis*. See *P. scandens*.
- *pulchella*. 3. Bluish-violet. Mexico. Syn., *P. rhomboidea* of B. C. t. 1536.
- *rhomboidea* of B. M. t. 2917, see *P. cœrulea*; of B. C. t. 1536, see *P. pulchella*.
- *rosea*. 1½. Red. May. E. Ind. 1777. B. M. t. 230.

- P. rosea coccinea*. Flowers larger and brighter than in type. Neilgherries. 1863.
 — *scandens*. 3. White. July. W. Ind. 1699. Climber. Syns., *P. mexicana* and *P. occidentalis*.
 — *zeylanica*. 2. White. June. E. Ind. 1731. B. R. 1846, t. 23.

HARDY HERBACEOUS.

- P. europæa*. 3. Blue. September. South Europe. 1596. Sibth. Fl. Gr. t. 191.
 — *Larpenæ*. 2. Blue. July. China. 1845. Pax. Mag. xiv. p. 267. Now known as *Ceratostigma plumbaginoides*.
 — *micrantha*. 2. White. July. Siberia. 1829.

Plume'ria. (Named after *Plumier*, a celebrated French botanist. Nat. ord., *Apocynaceæ*; Tribe, *Plumeriaceæ*. 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 fibry peat. Winter temp., 50° to 55°, and rather dry; summer, 60° to 85°, with moist roots and atmosphere.

- P. acuminata*. B. M. t. 3952. See *P. acutifolia*.
 — *acutifolia*. 20. Red, yellow. July. E. Ind. 1790. Syn., *P. acuminata*.
 — *bicolor*. 25. White, yellow. August. S. Amer. 1815. B. R. t. 480.
 — *blanfordiana*. 10. July. S. Amer. 1825.
 — *incarnata*. 20. Flesh. July. Peru. 1820. Syn., *P. Milleri*.
 — *Jamesoni*. 4. Yellow and pink. Guayaquil. July. B. M. t. 4751.
 — *Kerri*. See *P. tricolor*.
 — *Lambertiana*. 10. White. July. Mexico. 1819. B. R. t. 1378. Syn., *P. Gouani*.
 — *leucantha*. 10. White. July. S. Amer. 1825.
 — *lutea*. 10-20. Pinkish, yellow. June. Peru. 1869.
 — *macrophylla*. 10. White. July. S. Amer. 1825.
 — *mexicana*. White, yellow. June. Mexico. B. C. t. 1024.
 — *Milleri*. See *P. incarnata*.
 — *Northiana*. 7. July. S. Amer. 1820.
 — *obtusata*. 10. White. July. W. Ind. 1733.
 — *parvifolia*. White. July. W. Ind. 1813.
 — *pubesca*. 5. Yellow. July. S. Amer.
 — *purpurea*. 20. Purple. July. Peru. 1820.
 — *rubra*. 15. Red. July. Jamaica. 1690. B. R. t. 780.
 — *tricolor*. 15. Yellow, white, red. July. Mexico. 1815. B. R. t. 150. Syn., *P. Kerri*.
 — *tuberculata*. 6. White. August. St. Domingo. 1812. B. C. t. 681.

Plum, Ginger-bread. *Parinarium macrophyllum*.

Plum, Maiden. *Comocladia*.

Plum-Nutmegs. The fruits of *Monimiaceæ*.

Poa. (From *poa*, an ancient Greek name for grass or fodder. Nat. ord., *Gramineæ*; Tribe, *Festuceæ*.)

A large genus of grasses, which forms one of the chief elements of pasturage. The few species in cultivation are hardy, and may be increased by seeds or divisions.

- P. flabellata*. Falkland Islands, etc. Syns., *Dactylis cæspitosa* and *Festuca flabellata*.
 — *palustris*. 3. Purplish. South Europe. Syn., *P. fertilis*.

- P. trivialis a'bo-vittata*. $\frac{1}{2}$. England. 1868. Fl. Ser. t. 1695.

Podalyria. (A classical name. *Podalirius* was the son of *Æsculapinus*. Nat. ord., *Leguminosæ*; Tribe, *Podalyriacæ*. Allied to *Brachysema*.)

Greenhouse evergreen shrubs, from South Africa. The following, with two 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 fibry peat, well-drained. Winter temp., 40° to 48°
P. alba. B. M. t. 1177. See *Baptisia alba*.

- *argentea*. 6. White, red. April. 1789. Salis. Parad. t. 7. Syn., *P. biflora*. B. M. t. 753.
 — *biflora*. See *P. argentea*.
 — *bucofolia*. 2. Blue. June. 1790.
 — *calyptrota*. 6. Pale purple. Summer. 1792. B. M. t. 1580. Syn., *P. styracifolia*.
 — *glauca*. 6. June. 1810.
 — *myrtillifolia*. 6. June. 1795.
 — *oleofovia*. 4. May. 1804. Salis. Parad. t. 114.
 — *sericea*. 6. June. 1778. B. M. t. 1923.
 — *styracifolia*. See *P. calyptrota*.
 — *tinctoria*. B. M. t. 1099. See *Baptisia tinctoria*.

Podanthes. (From *pous*, *podos*, a food, and *anthos*, a flower; the flowers are borne on long stalks. Nat. ord., *Asclepiadaceæ*.)

Leafless, fleshy, stove shrubs. For culture, see STAPELIA.

- P. geminata*. B. M. t. 1326. See *Piaranthus geminatus*.
 — *irrorata*. Sulphur, blood-red, purple. Autumn. "South Africa. 1795. Syn., *Stapelia irrorata*. B. C. t. 127.
 — *puhura*. Green, sulphur, dark-brown. 1800.
 — *verrucosa*. Pale yellow, dark purple. Syn., *Stapelia verrucosa*. B. M. t. 786.

Podanthus. (From *pous*, *podos*, a foot, and *anthos*, a flower; referring to the flowers being stalked. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. Syn., *Euzenia*.)

Greenhouse shrubs. Cuttings in sand under a bell-glass.

- P. Mitiqui*. 3. Yellow. Chili. 1824.
 — *ovatifolius*. 2. Yellow. Chili. 1828. Syn., *Euzenia grata*.

Podocarpus. (From *pous*, a foot, and *karpos*, a fruit; long footstalks. Nat. ord., *Coniferæ*; Tribe, *Podocarpeæ*. 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°. *P. nerifolia*, *latifolia*, *spinulosa*, and *nucifera* have stood some time against walls in the climate of London. They are all good things for a winter garden.

- P. andina*. 50. Valdivia. 1860. Syn., *Prumnopitys elegans*.
 — *antarctica*. Patagonia.
 — *Bidwilli*. See *P. Totara*.
 — *chiliana*. 40. Chili.
 — *chinensis*. 20. China and Japan. 1838. Syn., *P. Maki*. There is also a variegated form.
 — *coriacea*. 50. Jamaica. Richard, Commentatio de Coniferis, t. 1, fig. 3. *Cephalotaxus drupacea* is sometimes grown under this name.

- P. dacrydioides*. 200. New Zealand.
 — *elongata*. Cape of Good Hope.
 — *Endlicheriana*. Nepal.
 — *ensifolia*. Tasmania.
 — *ferruginæa*. 80. New Zealand.
 — *japonica*. Japan.
 — *koraiæna*. A synonym of *Cephalotaxus pedunculata*, var. *fastigiata*.
 — *latifolia*. 200. March. Pandua. 1828. Syn., *P. zamiaefolia* of gardens.
 — *macrophylla*. See *P. nerifolia*.
 — *Nageia*. 60. China and Japan. Sieb. Fl. Jap. t. 135. Syn., *Nageia japonica*.
 — *nerifolia*. Java. B. M. t. 4655. Syn., *P. macrophylla*.
 — *nubiæna*. Chili.
 — *nucifera*. See *Torreya nucifera*.
 — *Purdieana*. 100. Jamaica. Yacca-wood Tree.
 — *spinulosa*. 20. Australia. Illawarra Pine.
 — *taxifolia*. 40. Peru. 1820.
 — *Totara*. 60. New Zealand. Syn., *P. Bidwillii*. Totara Pine.
 — *variegatus*. Leaves white-striped. Japan.
 — *vitensis*. 60. Leaves bright green. Fiji. G. C. 1886, xxv. p. 464, fig. 89.
 — *yaeca*, of London's Hortus Britannicus, p. 388, is *P. coriacea*; of Sweet's Hortus Britannicus, ed. 3, p. 622, is *P. taxifolia*.

Podocytisus. (From *pous*, *podos*, a foot, and *Cytisus*. Nat. ord., *Leguminosæ*; Tribe, *Genistecæ*.) A synonym of **Laburnum**.

P. caramanicus. See *Laburnum caramanicum*.

Podola'sia. (From *pous*, *podos*, a foot, and *Lasia*; differing from *Lasia* in having the spadix with a long stalk. Nat. ord., *Aroideæ*; Tribe, *Orontieæ*.)
 Stove perennial aroid.

P. stipitata. 1½. Spathe brownish-red or purple. Borneo. 1882.

Podolepis. (From *pous*, a foot, and *lepis*, a scale; flower-stalks, scaly. Nat. ord., *Compositæ*; Tribe, *Inuloidæ*. Allied to *Helichrysum*.)

P. acuminata and *P. aristata* are hardy annuals; *P. gracilis* is a half-hardy perennial. 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. acuminata*. 1½. Yellow. Summer. Australia. Syns., *P. rugata* and *Scalia jaceoides*, B. M. t. 956.
 — *aristata*. 1. Golden-yellow, pink. Summer. Australia. Syn., *P. chrysantha*.
 — *chrysantha*. See *P. aristata*.
 — *gracilis*. 3. Pink. August. N. S. Wales. 1826. B. M. t. 2904.
 — *Lessonii*. Yellow. King George's Sound. 1862. Syn., *Panætia Lessonii*.

Podolobium. (From *pous*, a foot, and *lobos*, a pod; the seed-pod on a foot-stalk within the calyx. Nat. ord., *Leguminosæ*; Tribe, *Podalyriæ*. Allied to *Gompholobium*.) A synonym of **Oxylobium**.

- P. berberifolium*. See *Oxylobium berberifolium*.
 — *heterophyllum*. See *Oxylobium heterophyllum*.
 — *scandens*. See *Oxylobium scandens*.
 — *staurophyllum*. B. R. t. 959. See *Oxylobium staurophyllum*.

P. trilobatum. B. R. t. 1333. See *Oxylobium trilobatum*.

Podophyllum. Duck's-foot. (Contracted from *anapodophyllum*, or duck's-foot-leaved. Nat. ord., *Berberideæ*; Tribe, *Berberæ*.)

Hardy herbaceous perennials. Division at the root; moist, marshy peat, and a shady situation.

P. diphyllum. A synonym of *Jeffersonia diphylla*.

- *Emodi*. White. May. California. 1845.
 — *pellatum*. ½. White. May. N. Amer. 1864. B. M. t. 1819. May Apple.
 — *pleianthum*. 1-2. Rich purple. China. G. C. 1889, vi. p. 299, fig. 44.

Podopteris. (From *pous*, a foot, and *pteris*, a wing; the mode of growth. Nat. ord., *Polygonaceæ*; Tribe, *Triplurideæ*.)

Greenhouse evergreen. Cuttings of half-ripened shoots under a glass, in sandy loam, in April; sandy, fibry loam, and a little peat. Winter temp., 40° to 48°.

P. mexicana. 2. Pink. July. Mexico. 1825.

Podoria. (Derivation uncertain. Nat. ord., *Capparideæ*.) A synonym of **Boscia**.

P. senegalensis. See *Boscia senegalensis*.

Podosperma. (From *pous*, *podos*, a foot, and *sperma*, seed. Nat. ord., *Compositæ*.) A synonym of **Podothea**.

Podospermum. (From *pous*, a foot, and *sperma*, a seed. Nat. ord., *Compositæ*; Tribe, *Cichoraceæ*.) A synonym of **Scorzonera**.

P. calcitrapifolium. See *Scorzonera calcitrapifolia*.

- *canum*. See *Scorzonera Jaquiniana*.
 — *coronopifolium*. See *Scorzonera resedæfolia*.
 — *intermedium*. See *Scorzonera intermedia*.
 — *lacinia tum*. See *Scorzonera lacinia*.
 — *octangulare*. See *Scorzonera octangulatis*.
 — *pumilum*. See *Scorzonera pumila*.
 — *resedæfolium*. See *Scorzonera resedæfolia*.
 — *taraxacifolium*. See *Scorzonera taraxacifolia*.

Podostigma. (From *pous*, *podos*, a foot, and *stigma*; the style is elongated. Nat. ord., *Asclepiadaceæ*.)

Half-hardy, tuberous herb. For culture, see ASCLEPIAS.

P. pubescens. ½-1. Orange. July. S. United States. 1824. Syn., *Stylandra pumila*.

Podotheca. (From *pous*, *podos*, a foot, and *theca*, a capsule; the fruit is stalked. Nat. ord., *Compositæ*.)

Hardy annual. Ordinary garden-soil. Seeds. *P. gnaphalioides*. 1-1½. Yellow. June. Australia. 1841. B. M. t. 3920.

Pæcilopteris. (From *poikolos*, checkered, and *pteris*, a fern; alluding to the net-like veins. Nat. ord., *Filices* — *Polypodiaceæ*.) Sometimes united with **Acrostichum**.

Stove fern. See FERNs.

P. crispata. E. Indies.

- P. diversifolia*. Malay Archipelago.
- *flagellifera*. E. Indies. 1825.
- *punctulata*. Mauritius.
- *repanda*. Malay Archipelago.
- *scandens*. Brazil.
- *sinuosa*. Luzon.

Pædisca 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, *Pædisca angustiorana*. 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.

Poet's Cassia. *Osy'ris*.

Poet's Narcissus. *Narci'ssus poeticus*.

Pogo'gyne. (From *pogon*, a beard, and *gyne*, the female organ; fringe on the style. Nat. ord., *Labiatae*; Tribe, *Satureineae*. Allied to *Melissa*.)

- Hardy annuals. Cultivated like **PODOSPERMUM**.
- P. Douglasii*. 1. Purple, dark violet. California. 1871. B. M. t. 5896.
 - *multiflora*. $\frac{1}{2}$. Pale lilac. August. California. 1836.
 - *multiflora*. See *P. Douglasii*, var. *multiflora*.
 - *nudiuscula*. 1. Bright blue. California. 1887. Gf. t. 1242.

Pogonia. (From *pogon*, a beard; alluding to the fringed lip. Nat. ord., *Orchideae*; Tribe, *Neottieae-Arethuseae*.)

Greenhouse or stove terrestrial orchids. See **ORCHIDS**.

- P. Barklyana*. 2. Green. South-east Africa. 1885.
- *debillia*. Andr. Rep. t. 212. A synonym of *Myoporum debile*.
- *discolor*. $\frac{1}{2}$. Green, white. Java. 1859.
- *Fordii*. Dull ochre, white, rose. April. Hong-Kong. 1883. Syn., *P. pulchella*, B. M. t. 6851.

- P. Gammieana*. $\frac{1}{2}$. Pale lilac; lip pale green. May. Sikkim. 1847. B. M. t. 6671.
- *glabra*. Andr. Rep. t. 283. A synonym of *Myoporum ellipticum*.
- *ophioglossoides*. $\frac{3}{4}$. Rose-pink. June. N. America. 1816. B. R. t. 148.
- *pendula*. $\frac{1}{2}$. Pink. August. N. America. 1824. B. R. t. 908. Syn., *Triphora pendula*.
- *placida*. Yellowish-green, pink. E. Indies.
- *pulchella*. See *P. Fordii*.
- *rosea*. 3-5. Greenish, pink, lilac, white. August. Guiana. 1844.

Pogonopus. (From *pogon*, a beard, and *pous*, a foot. Nat. ord., *Rubiaceae*; Tribe, *Condamineae*. Syn., *Howardia*.)

Stove shrub. To be grown in a compost of peat, loam, and leaf-mould, mixed with a little silver sand. Cuttings during early summer in sand, under a bell-glass, in heat.

- P. caracasensis*. Rose-pink. Summer. Caraccas, Venezuela. 1855. Syn., *Howardia caracasensis*, B. M. t. 5110.

Pogostemon. (From *pogon*, a beard, and *stema*, a stamen; the stamen filaments being hairy. Nat. ord., *Labiatae*; Tribe, *Satureineae*.)

Soft-wooded small shrubs. *P. Patchouli* requires a warm greenhouse, *P. plectranthoides* a stove. For cultivation, see **COLEBROOKIA**.

- P. Patchouli*. 3. White, purple. June. E. Indies. 1848.
- *plectranthoides*. 3. White. July. E. Indies. B. M. t. 3238.

Poinciana. Flower Fence. (Named after *Poinci*, once governor of the Antilles. Nat. ord., *Leguminosae*; Tribe, *Eucæsalpineae*. 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, fibry loam. Winter temp., 50° to 60°; summer, 60° to 90°.

- P. elata*. 15. Yellow. E. Ind. 1778.
- *Gilliesii*. B. M. t. 4006. A synonym of *Cæsalpinia Gilliesii*.
- *insignis*. 15. Copper. S. Amer. 1823. A synonym of *Cæsalpinia insignis*.
- *pulcherrima*. B. M. t. 995. A synonym of *Cæsalpinia pulcherrima*.
- *regia*. Crimson. Madagascar. 1828. B. M. t. 2884. The pods of this are often two feet long.
- *ta'ra*. A synonym of *Coulteria tinctoria*.

Poinsettia. (Named after its discoverer, *M. Poinsette*. Nat. ord., *Euphorbiaceae*.) This genus should have been united to **Euphorbia**.

Stove Mexican evergreen shrubs. Cuttings taken off in spring, or when the old plant has done flowering; dried at the base after cutting to a joint, and after several days inserted in sandy loam, in a gentle hotbed; sandy loam, and a little peat and leaf-mould. Winter temp., 50° to 60°; summer, 60° to 85°. When done flowering, they may be kept dry, in a temperature of from 40° to 45°, if not above a period of two or three months.

- P. pulcherrima*. 4. Scarlet. March. 1834. B. M. t. 3493. Now known as *Euphorbia pulcherrima*.
- *albida*. 4. White. December. 1834.
- *major*. Larger. 1881.

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. (After *M. J. L. M. Poiret*, a French writer in the eighteenth century. Nat. ord., *Leguminosæ*; Tribe, *Genistææ*.) See **Hovea**.

P. elliptica. A synonym of *Hovea Celsi*.
— *linearis.* A synonym of *Hovea linearis*.

Poison-Bulb. *Brunsvi'gia cora'nica* and *toxica'ria*, and *Cr'num asia'ticum*.

Poison - Nut. *Stry'chnos nux-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 biglandulo'sa*, the *Manchineel*, the *Tanghin*, *Sa'pium lau'ro ce'rasus*, and *Comocla'dia denta'ta*, 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 iron-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, nar-

cotic 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 tree absorb a quart of camphorated spirits of wine through one of its branches, one-half of the tree was destroyed.

Poitæ'a. (After *M. Poiteau*, a French botanist. Nat. ord., *Leguminosæ*.)

Stove shrub. Well-drained sandy loam. Cuttings in sand, in heat, under a bell-glass.

P. galegoi'des. 1. Rosy-purple. June. St. Domingo. 1826.

Poi'vrea. (Named after *N. Poivre*, a Frenchman. Nat. ord., *Combretaceæ*.) A synonym of **Combretum**.

P. Afze'lii. See *Combretum grandiflorum*.

— *alternifolia.* See *Combretum decandrum*.

— *barba'ta.* See *Combretum barbatum*.

— *coccinea.* See *Combretum coccineum* and *C. purpureum*.

— *comosa.* See *Combretum comosum*.

— *deca'nara.* See *Combretum decandrum*.

— *interme'dia.* See *Combretum comosum* and *C. intermedium*.

— *macrophy'lla.* See *Combretum latifolium*.

— *pilo'sa.* See *Combretum pilosum*.

Poke Weed. *Phytola'cca*.

Polani'sia. (From *poly*, many, and *anisos*, unequal; many stamens of unequal lengths. Nat. ord., *Capparidaceæ*; Tribe, *Cleomeæ*. Allied to *Cleome*.)

Hardy annuals, flowering in June. Seeds in a slight hotbed, under a glass frame, in March and April, and pricked out and finally placed in the open ground in the beginning of June.

P. Cheladonii. 1½. Rose. E. Ind. 1792.

— *dodeca'nara.* 1½. White. E. Ind. 1795.

Syn., *Cleome Burmanni*.

— *grave'olens.* 1½. Pinkish. Canada.

— *uniglandulo'sa.* 1. White, red. Mexico. 1823.

— *visco'sa.* 2. Yellow. E. Ind. 1730.

— *icosa'nara.* 1½. Yellow. Ceylon. 1730.

Polemium. Greek Valerian. (From *polemos*, war; according to *Pliny*, a dispute about its discovery led to warfare. Nat. ord., *Polemoniaceæ*.)

Hardy herbaceous perennials. Seeds; but generally division of the plant; common garden-soil.

- P. cœruleum*. 2. Blue. June. Britain.
 — *album*. 2. White. June. Britain.
 — *dissectum*. 2. White. June. Siberia.
 1800. Syn., *P. sibiricum*.
 — *grandiflorum*. Brown. June. India.
 Biennial.
 — *himalayanum*. Lilac-blue. Himalayas.
 1887.
 — *maculatum*. 2. Striped. June. Britain.
 — *piliferum*. Blue. June. N. Amer.
 — *variegatum*. 1. Blue. June. Britain.
 — *villosum*. Pale blue. August. Siberia.
 1826. Syn., *P. villosum*.
 — *confertum*. Rich blue. Summer. Rocky
 Mountains. G. C. 1885, xxiv, p. 12, fig. 3.
 — *flavum*. 8. Light yellow. New Mexico.
 B. M. t. 6965.
 — *gracile*. 1½. Blue. June. Dauria. 1818.
 — *humile*. ½. Blue. July. N. America.
 1926. Syns., *P. moschatum* and *P.*
Richardsoni, B. M. t. 2800. *P. humile*
 of B. R. t. 1304, see var. *pulchellum*.
 — *pulchellum*. ¾. Blue. July. N. Amer.
 1827. Syns., *P. humile* of B. R. t. 1304,
 and *P. pulcherrimum*, B. M. t. 2979.
 — *laetum*. White. May. 1829.
 — *mexicanum*. 1. Blue. April. Mexico.
 1817. B. R. t. 460.
 — *moschatum*. See *P. humile*.
 — *pauciflorum*. 1½. Yellow, tinged with red.
 Mexico. G. C. 1889, vi, p. 96, fig. 15.
 — *pulcherrimum*. See *P. humile*, var. *pul-*
chellum.
 — *reptans*. 1½. Lilac, blue. April. N. Amer.
 1758. B. M. t. 1887.
 — *maius*. 1. Dark blue. April.
 — *Richardsoni*. B. M. t. 2800. See *P. humile*.
 — *sibiricum*. Swt. Fl. Gard. t. 182. See *P.*
cœruleum, var. *dissectum*.
 — *villosum*. Swt. Fl. Gard. t. 266. See *P.*
cœruleum, var. *villosum*.

Polianthes. Tuberose. (From *polis*, a city, and *anthos*, a flower; referring to its general use in city decoration. Nat. ord., *Amaryllidæ*; Tribe, *Agaveæ*.)

Greenhouse bulbs. Offset bulbs; old bulbs 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 bulb, and not the top, should be kept warm), before getting them ready for rooms or greenhouses.

- P. gracilis*. See *P. tuberosa*, var. *gracilis*.
 — *tuberosa*. 3. White. August. Mexico.
 1829. B. M. t. 1817, B. R. t. 63.
 — *florople-no*. 3. White. August.
 — *gracilis*. 8. Pale yellow. August.
 Brazil. 1822. Syn., *P. gracilis*.

Pollen occurs in all flowers containing male organs. It generally exists in the form of separate grains, most frequently of a yellow or yellowish-green colour, but varying from reddish-brown in some Lilies to blue in Scilla. These grains are the result of repeated divisions of certain cells in the anther; those by whose immediate division the pollen grains are formed are known as *parent cells*. Each parent cell produces four grains, each of which contains protoplasmic matter termed *fovilla*, and is surrounded by two coats, the *extine* and the *intine*. When applied to the stigma

of a flower the intine bursts through the extine in the form of a tube, and penetrates the style until it comes in contact with the ovule, which it fertilizes. The shape of the grain varies much, but as four are generally formed from a more or less spherical mother cell, it is usually a three-sided pyramid with a convex base. The extine may be smooth, granular, warted, or spiny. In some cases the grains remain attached together in waxy club-shaped masses, e.g. certain *Orchidæ* and *Asclepiadææ*. In some *Conifereæ* the grain has two bladder-like appendages, containing air, to render it more capable of being dispersed by the wind.

Pollia. (After *Van der Poll*, once a consul in Holland. Nat. ord., *Comelinaceæ*.)

Stove herbaceous, trailing perennial. Sandy loam and leaf-mould. Seeds; divisions.
P. crispata. Blue. Australia. 1822. Syn., *Anilema crispata*.

Pollination. The act of applying pollen to the stigma of a plant. In a state of nature this is done by the agency of wind or insects, or sometimes by the direct application of the pollen to the stigma of the same flower (self-fertilization). Under cultivation the gardener employs it to raise new hybrids.

Poly, or Germander. *Teucrium*.

Polyachyrus. (From *poly*, many, and *achuron*, chaff. Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*.)

Half-hardy herbaceous perennial. 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. Poeppigii. Blue. June. Chili. 1830.

Polyalthia. (From *polys*, much, and *althecis*, healthy; the plants were supposed to maintain health. Nat. ord., *Anonaceæ*.)

Stove trees. Rich sandy, fibry loam. Cuttings of half-ripened shoots in April, in sand, under a bell-glass, in a brisk bottom-heat.

- P. cerasodes*. 60. Green. East Indies. 1820.
 Syn., *Guatteria cerasodes*.
 — *suberosa*. 30. White. East Indies. 1820.
 Syn., *Guatteria suberosa*.

Polyanthus. A race of Primulas derived from a cross between the Primrose and the Cowslip. There are many varieties, and their excellence as florists' flowers may be determined by the following rules:

The Pip.—1. This should be perfectly flat and round, slightly scalloped 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, etc.*

Culture.—The Polyanthus is much easier to cultivate than the Auricula.

Polybo'trya. (From *poly*, many, and *botrys*, a bunch ; alluding to the fructification. Nat. ord., *Filices*—*Poly-podiaceae*.) This is sometimes united with **Aerostichum**.

Stove ferns. See FERNS.

- P. acuminata*. July. W. Ind. 1831. Syn., *Gymnopteris acuminata*.
- *apifolia*. July. Isle of Luzon.
- *appendiculata*. July. W. Ind.
- *articulata*. July. Isle of Luzon.
- *cerifolia*. ½. April. Jamaica. 1823.
- *corcovadensis*. July. Brazil. 1837
- *incisa*. July. W. Ind.
- *intermedia*. April. Isle of Luzon.
- *Lechleriana*. Peru and Ecuador. G. C. 1886, xxv. p. 400, figs. 79, 80.
- *Lo'wi*. Borneo. 1861. Syn., *Lindsaya Lowii*.
- *Osmunda cea*. July. Mexico.
- *serrulata*. July. Isle of Luzon.
- *speciosa*. July. W. Ind.
- *vivipara*. ½. June. W. Ind. 1823.

Polycaly'mna. (From *poly*, many, and *kalydna*, a covering ; the involucrel bracts are numerous. Nat. ord., *Compositae*.)

Half-hardy perennial herb. For culture, see CENTAUREA.

P. Stue'rtii. 1. White. Australia.

Polyca'ropa. (From *poly*, many, and *karpos*, fruit. Nat. ord., *Bixineae*.) See **Idesia**.

P. Maximowiczii. See *Idesia Polycarpa*.

Polycarpæ'a. (From *poly*, many, and *karpos*, a fruit ; the plants bear many seeds. Nat. ord., *Caryophyllaceae*.)

- Hardy perennials, except *P. memphitica*. Light, sandy loam. Seeds; cuttings.
- P. aristata*. †. White. June. Canary Islands. 1780.
- *gnaphalioides*. White. June. North Africa. 1818.
- *latifolia*. †. White. June. Teneriffe. 1810.
- *memphitica*. †. White. July. Egypt. 1828. Annual.

Polychilus. (From *poly*, many, and *cheilos*, a lip. Nat. ord., *Orchidæ*; Tribe, *Vandæe.*) See **Phalænopsis**.

P. cornu-cervi. B. M. t. 5570. See *Phalænopsis cornu-cervi*.

Polycygnis. (From *poly*, many, and *kyknos*, a swan; because the lip and column, together, bear some resemblance to a swan. Nat. ord., *Orchidæ*; Tribe, *Vandæe-Stanhopeicæ*. Allied to *Cycnoches*.)

Stove epiphytes. For cultivation, see CATA-SETUM.

- P. barbata*. White, pink. June. New Grenada. Syn., *Cycnoches barbata*. B. M. t. 4479.
- *gratiosa*. Brownish, purple. Costa Rica. 1871.
- *lepidia*. Pale brown, cream, purple. Columbia. 1870.
- *muscifera*. 1. Pale brown. Early Spring. Columbia. 1849. Syn., *Cycnoches muscifera*.
- *vittata*. 1. Yellow, dark chocolate. British Guiana. 1841. Syn., *Houlletia vittata*. B. R. 1841, t. 69.

Polygala. Milkwort. (From *poly*, much, and *gala*, milk; abundance of milky juice. Nat. ord., *Polygalacæe.*)

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 *chamæbrus*, 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 hardness, should be tried against conservatory walls, such as *latifolia*, *myrtifolia*, *grandiflora*, *speciosa*, etc.

HARDY ANNUALS.

- P. fastigiata*. †. Red. June. N. Amer. 1824.
- *monspeliaca*. †. Blue. June. Mediterranean.
- *purpurea*. See *P. sanguinea*.
- *sanguinea*. Purple. June. N. Amer. 1739. Syn., *P. purpurea*.
- *umbellata*. 1. Purple. July. Cape of Good Hope. Stove.

HARDY HERBACEOUS.

- P. alba*. White. June. Louisiana. 1827.
- *alpestris*. See *P. amara*.
- *amara*. †. Blue. June. W. and Cent. Europe, Britain. B. M. t. 2437. Syn., *P. alpestris* and *P. austriaca*.
- *austriaca*. See *P. amara*.
- *chamæbrus*. †. Yellow. May. Austria. 1658. Evergreen. B. M. t. 316.
- *purpurea*. Leaves purplish. 1878.
- *cymosa*. †. Lilac, yellow. June. Carolina. 1824. Syn., *P. graminifolia*.
- *graminifolia*. See *P. cymosa*.

- P. major*. 1. Red. July. Austria. 1739.
- *parviflora*. †. Purple. Summer. N. America. 1812. B. M. t. 2852.
- *polygama*. †. Pale red. June. N. America. 1828. Syn., *P. rubella*.
- *rubella*. See *P. polygama*.
- *Senega*. †. 1. May. N. America. B. M. t. 1051.
- *vulgaris*. †. White to blue or pink. June. Britain. Eng. Bot. ed. 3, t. 185.

GREENHOUSE EVERGREENS.

- P. attenuata*. B. C. t. 1000. See *P. oppositifolia*.
- *borboniæfolia*. See *P. oppositifolia*.
- *bracteolata*. 6. Purple. July. S. Africa. 1713. B. M. t. 345. A synonym of *Brachycarpæa varians*.
- *Burmanni*. 3. Purple. June. S. Africa. 1800.
- *cordifolia*. B. M. t. 2438. See *P. oppositifolia*.
- *Dalmasiæna*. See *P. myrtifolia*, var. *grandiflora*.
- *Garcini*. 3. Purple. July. S. Africa.
- *genistorides*. See *P. virgata*.
- *gracilis*. Blue. May. New Zealand.
- *grandiflora*. B. C. t. 1227. See *P. myrtifolia*, var. *grandiflora*.
- *Hilariana*. 1. White. Spring. Bahia. B. M. t. 5057.
- *intermedia*. See *P. peduncularis*.
- *lanceolata*. 3. Purple. July. S. Africa. 1820.
- *latifolia*. B. C. t. 769. See *P. oppositifolia*.
- *ligularis*. B. R. t. 637. See *P. myrtifolia*.
- *liviifolia*. 4. Purple. July. S. Africa. 1823.
- *myrtifolia*. 3. Purple. July. South Africa. 1707. B. R. t. 669. Syn., *P. liviifolia*.
- *grandiflora*. 4. Purple. July. South Africa. 1818. B. M. t. 3616. Syn., *P. grandiflora*, B. C. t. 1227. *P. Dalmasiæna* is probably a form of this.
- *nummularia*. See *P. oppositifolia*.
- *oppositifolia*. 3. Purple, yellowish-green. June. South Africa. 1790. B. M. t. 492. The following are forms of this species:—*P. attenuata*, B. C. t. 1000, *P. borboniæfolia*, *P. cordifolia*, B. M. t. 2438, *P. latifolia*, B. R. t. 645, *P. nummularia* and *P. tetragona*.
- *major*. 4. Purple. July. South Africa. B. R. t. 1146.
- *peduncularis*. 3. Purple. June. South Africa. Syn., *P. intermedia*.
- *pinifolia*. 3. Purple. July. South Africa. 1823.
- *simplex*. See *P. virgata*.
- *speciosa*. See *P. virgata*, var. *speciosa*.
- *teretifolia*. 3. Purple. August. South Africa. 1791. Andr. Rep. t. 370.
- *tetragona*. See *P. oppositifolia*.
- *virgata*. 4. Purple. July. South Africa.
- *speciosa*. 6. Purple. July. South Africa. 1814. Syn., *P. speciosa*, B. C. t. 1780.

EXCLUDED SPECIES.

- P. alopecuroides*. Andr. Rep. t. 371. See *Muraltia alopecuroides*.
- *bracteolata*. A synonym of *Brachycarpæa varians*.
- *filiformis*. See *Muraltia filiformis*.
- *Heisteria*. B. M. t. 340. See *Muraltia Heisteria*.
- *humilis*. B. C. t. 420. See *Muraltia humilis*.
- *micrantha*. Andr. Rep. t. 424. See *Muraltia filiformis*.
- *mixta*. Andr. Rep. t. 445. See *Muraltia mixta*.
- *spinosa*. See *Mundia spinosa*.
- *stipulacea*. Andr. Rep. t. 363. See *Muraltia stipulacea*.
- *vimiæna*. See *Mundia spinosa*, var. *angustifolia*.

Polygonatum. Solomon's Seal. (From *poly*, many, and *gonu*, a joint, or knee; numerous joints of the stem. Nat. ord., *Liliaceæ*; Tribe, *Polygonateæ*. Allied to *Convallaria*.)

Hardy, white-flowered, herbaceous perennial. Seeds and divisions in spring; rich, light soil. *P. leptophyllum* and *oppositifolium* require protection in winter.

- P. angustifolium*. See *P. biflorum*.
 — *biflorum*. 1-3. Greenish. May. N. America. 1812. Syns., *P. angustifolium*, *P. canaliculatum*, and *P. pubescens*.
 — *canaliculatum*. See *P. biflorum*.
 — *hirtum*. See *P. latifolium*.
 — *japonicum*. 1½. White, green. April. Japan.
 — *latifolium*. 3. White. May. Central Europe. 1802. Syn., *P. hirtum*.
 — *leptophyllum*. 2. White. June. Nepal. 1816.
 — *macrophyllum*. See *Convallaria leptophylla*.
 — *multiflorum*. 2-3. White. June. Britain. Syn., *Convallaria multiflora*. Solomon's Seal; David's Harp; Lady's Seal.
 — — *floribus no.* Double-flowered.
 — — *striatum*. Leaves variegated.
 — *officinale*. 1. White. Britain. Syns., *P. vulgare* and *Convallaria Polygonatum*.
 — — *macranthum*. 1½. Flowers larger than in the type. Japan. B. M. t. 6183.
 — *oppositifolium*. 2-4. White. April. Himalayas. 1822. Syn., *Convallaria oppositifolia*, B. M. t. 3529.
 — — *albavittatum*. White; stems red, leaves white-striped. Japan. 1862.
 — *polyanthum*. 1. May. Caucasus. 1826.
 — *pubescens*. See *P. biflorum*.
 — *punctatum*. 1½. White. April. Bhotan. B. M. t. 5061.
 — *roseum*. 2. Pink. Siberia. B. M. t. 5049.
 — *verticillatum*. 1. May. Scotland. Syn., *Convallaria verticillata*.
 — *vulgare*. See *P. officinale*.

Polygonum. (From *poly*, many, and *gonu*, a knee; numerous joints of the stem. Nat. ord., *Polygonaceæ*; Tribe, *Eupolygoneæ*.)

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 fibry loam, with a little peat; several of them, such as *adpressum*, which sends out very long shoots, should be tried against a wall. The fruit of several, such as *tataricum* are used for tarts.

GREENHOUSE EVERGREENS AND HERBACEOUS.
P. adpressum. B. M. t. 3145. See *Muehlenbeckia adpressa*.

- *Brunonis*. ½. Pink. August. North of India. 1845. Lem. Jard. Fl. t. 117.
 — *capitatum*. Pink. N. India.
 — *decipiens*. 2. Red. July. Australia. 1822.
 Herbaceous.
 — *gracile*. 1. Red. July. Australia. 1822.
 Herbaceous.
 — *hermarioides*. ½. July. Egypt. 1827.
 — *injustudum*. B. R. t. 1250. See *Muehlenbeckia injustudum*.
 — *platycladum*. See *Muehlenbeckia platyclada*.
 — *tinctarium*. 2. Red. July. China. 1776.
 Biennial.
 — *tomentosum*. Pink. India. 1875.

HARDY HERBACEOUS.

- P. affine*. ¾. Red. June. Nepal. 1822.
 — *alpinum*. 2. White. July. Switzerland. 1816.

- P. amphibium*. 1. Pink. July. Britain. Aquatic.
 — — *hirsutum*. 1. Red. July. Britain.
 — *amplexicaule*. Red. July. India. 1837. B. R. 1839, t. 46.
 — *balaschudanicum*. Bright pink. Eastern Buchara. 1888. Gf. t. 1278.
 — *barbatum*. 2. White. July. China. 1819. Trailing.
 — *chinense foliis pictis*. Leaves, some green, others purple, and all with a white V-shaped mark. China.
 — *cooccineum*. 1. Scarlet. July. N. America. 1819.
 — *crispulum*. B. M. t. 1065. A synonym of *Atraphaxis buxifolius*.
 — *cuspidatum*. Green. July. Japan. 1825.
 — — *compactum*. 2. White. September. Japan. Before 1875.
 — *elegans*. 2. White, green. June. Nepal. 1824. Trailing.
 — *ellipticum*. 2. Pink. June. Siberia. 1807.
 — *filiforme variegatum*. Leaves mottled with yellow. Japan. 1865.
 — *frutescens*. 1-3. Pale rose. August. Siberia. 1770. B. R. t. 254.
 — *glabrum*. 1. N. America.
 — *lanceolatum*. 6-10. Carnation red. Natal. Gf. 1890, p. 224, fig. 52.
 — *Lacina*. 1. White. June. Dahuria. 1800.
 — *macrophyllum*. 1½. Purple. June. Nepal. 1820.
 — *molle*. 2. White. Nepal. 1882.
 — *multiflorum*. China and Japan. 1881.
 — *sachalinense*. Whitish. Sachalin Islands. 1869.
 — *sphaerostachyum*. ¾. Crimson. Himalayas. 1889. B. M. t. 6847.
 — *sericeum*. ½. White. July. Siberia. 1820.
 — *setosum*. 1. White. July. Asia Minor. 1817.
 — *vacciniifolium*. Pink. Himalaya. 1845. Trailing evergreen. B. M. t. 4622.
 — *virginicum*. 3. White. August. N. Amer. 1840.
 — *volcanicum*. Mexico. 1831. Trailing evergreen.

HARDY ANNUALS.

- P. arenarium*. 1. Purple. June. Hungary. 1807. Trailing.
 — *emarginatum*. White, pink. China. B. R. t. 1065.
 — *Fagopyrum*. See *Fagopyrum esculentum*.
 — *floribundum*. 2. Red. July. Siberia. 1818.
 — *mitis*. 1. Red. July. N. Amer. 1800. Aquatic. Water-pepper.
 — *orientale*. 6. Red. August. E. Ind. 1707. B. M. t. 213.
 — — *album*. 4. White. August. E. Ind. 1781.
 — *peninsulare*. 1. Red. July. N. Amer. 1800.
 — *persicarioides*. 1½. Pink. July. Mexico. 1816.
 — *salsugineum*. 1. Pink. June. Caucasus. 1817. Aquatic.
 — *senegalensis*. 1½. Red. July. Guinea. 1825. Aquatic.

Polygonia. (One of the Muses. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)

Greenhouse or hardy perennials. *P. pyramidalis* is best propagated by seed, which should be raised in a hotbed, and then transplanted where the plants can have plenty of room. It is a very rapid grower, attaining a height of six to eight feet the first year, and flowering the second

year. Rich loam, leaf-mould, and manure. Summer temp., 70° to 85°; winter, 60° to 70°.

P. canadensis. 6. Pale yellow. July. N. America. 1768.

— *edulis*. Yellow. Cultivated in the Andes. The tubers are edible.

— *grandis*. } See *Montanoa bipinnatifida*.

— *heracleifolia*. } See *Montanoa bipinnatifida*.

— *pyramidalis*. 10. Yellow, brown. New Grenada. 1867. Rev. Hort. 1867, p. 211.

— *Uvedalia*. 4-10. Yellow. September. N. America. 1699.

Polypo'dium. Polypody. (From *voly*, many, and *pous*, a foot; numerous feet-like divisions of the creeping stems. Nat. ord., *Filices*—*Polypodiaceae*.)

A large genus of ferns, distributed throughout the world. Attempts have been made by many authors to split it up into smaller genera, characterized by the arrangement of the veins in the frond. Amongst these genera are:—AGLAOMORPHA, CAMPYLONEURON, COLYSIS, CRASPEDARIA, CRYPTOSORUS, CYRTOMIPHLEBIUM, DIBLEMMA, DICTYMYIA, DICTYOPTERIS, DRYNARIA, DRYOSTACHYUM, GONIOPHLEBIUM, GONIOPTERIS, GRAMMITIS (partly), LECANOPTERIS, LEPICYSTIS, LOPHOLEPIS, MICROGRAMME, MICROSORIUM (partly), NIPHOBOLUS, NIPHOPSIS, PARAGRAMMA, PHEGOPTERIS, PHLEBODIUM, PHYMATODES, PLEPELTIS, PLEURIDIUM, etc. Most of the species in cultivation require stove treatment. See FERNES.

P. acrostichoides. 2. Ceylon. Syn., *Niphobolus acrostichoides*. Greenhouse.

— *adnascens*. 1. India. 1824. Syn., *Niphobolus adnascens*.

— *adnatum*. 3. Guatemala. Syn., *Goniophlebium adnatum*.

— *albo-punctatissimum*. See *P. crassifolium*, var. *albo-punctatissimum*.

— *albo-squamatum*. 2. Malaga. Syn., *Phymatodes albo-squamata*.

— *alpestre*. 4. July. Britain. Syn., *Pseudathyrium alpestre*. Hardy.

— *flexile*. Syn., *Pseudathyrium flexile*.

— *amphostemon*. See *P. angustifolium*, var. *amphostemon*.

— *androgynum*. 4. Tropical America. Syns., *P. tetragonum* and *Goniopteris tetragona*.

— *angustum*. 1. N. India. Greenhouse.

— *angustifolium*. 1. May. Tropical America. 1820. Syn., *Campyloneuron angustifolium*.

— *amphostemon*. A variety with broad fronds.

— *ensifolium*. A variety with narrow fronds.

— *areolata*. 1. Brazil. 1824.

— *argutum*. 2. Himalayas. 1843. Greenhouse.

— *asperulum*. 2. August. Isle of Luzon. 1842. Syn., *Phegopteris asperula*.

— *asplenifolium*. 2. July. Martinique. 1790.

— *asplenoides*. See *P. reptans*.

— *attenuatum*. See *P. Brownii*.

— *aureum*. 2-5. Tropical America. 1742. Syn., *Phlebodium aureum*.

— *areolata*. Sori in a single row. Syn., *P. sporadocarpum* and *Phlebodium areolatum*.

— *pulvinatum*. Syn., *Phlebodium pulvinatum*.

— *auriculatum*. 4. Himalayas. 1824.

— *bifrons*. 4. Ecuador. Syn., *Phymatodes bifrons*.

— *Billardiæri*. 1. May. South Australia. 1823. Syn., *Phymatodes Billardiæri*. Greenhouse.

P. biserratum. See *P. subpictolatum*.

— *brasiliense*. 2. Brazil. 1837. Syn., *P. nerisifolium*.

— *Brownii*. 1. Australia. 1823. Syns. *P. attenuatum* and *Phymatodes Brownii*. Greenhouse.

— *calcareum*. 4. July. Britain. Hardy.

— *californicum*. 1. California. Syn., *Goniophlebium californicum*. Greenhouse.

— *camerooniana*. 4-8. Cameroon Mountains. Syn., *Dictyopteris camerooniana*.

— *capitellatum*. See *P. juglandifolium*.

— *cathartense*. 1. Brazil. 1824.

— *caudiceps*. Formosa. 1886. Syn., *Goniophlebium caudiceps*.

— *ciliatum*. See *P. plesiosoloides*.

— *colpodes*. See *P. plesiosorum*.

— *conjugatum*. 4. India. Syns., *P. coronans* and *Drynaria conjugata*.

— *connecticile*. 1. June. Canada. 1823. Hardy.

— *contiguum*. April. Isle of Luzon. 1842.

— *coronans*. See *P. conjugatum*.

— *corymbiferum*. See *P. lingua*.

— *crassifolium*. 3. August. West Indies. 1823. Syn., *Pleuridium crassifolium*.

— *albo-punctatissimum*. A dotted variety. Syn., *Pleuridium albo-punctatissimum*.

— *crassinervium*. See *P. platyphyllum*.

— *crenatum*. 2-4. West Indies. 1823.

— *curvatum*. 1. August. Jamaica. 1823. Syn., *Goniopteris curvata*.

— *cuspidatum*. See *P. persicifolium*.

— *decumanum*. 5. August. Brazil. 1818. Syns., *P. dictyocallis* and *Phlebodium decumanum*.

— *decurrens*. 3. Brazil. Syn., *Campyloneuron decurrens*.

— *decussatum*. 5. West Indies. Syn., *Phegopteris decussata*.

— *deflexum*. 2. July. New Grenada. 1830. Syn., *Phegopteris deflexa*.

— *Dianaæ*. See *P. molle*.

— *dictyocallis*. See *P. decussatum*.

— *difforme*. 4. Malay Peninsula. Syn., *P. irregularis* and *Dictyopteris irregularis*.

— *dilatatum*. 3. North India. Syn., *Colysis dilatata*.

— *dissimile*. 2. July. Brazil. 1820.

— *divergens*. June. West Indies. 1841.

— *diversifolium*. 2. South Brazil. Syn., *P. fraziniifolium*.

— *drepanum*. 2. Madeira. Syn., *Phegopteris drepanum*. Greenhouse.

— *Dryopteris*. 1. Britain. Oak Fern. Hardy.

— *Robertiana*. A more rigid variety.

— *effusum*. 3. November. Jamaica. 1769.

— *elastium*. 14. Mexico. 1824. Syns., *P. plumula* and *P. Schtuhri*.

— *ensifolium*. See *P. angustifolium*.

— *flipes*. A form of *P. tenellum*.

— *foseum*. 1. 1882. Syn., *Pleopeltis fossa*.

— *fraternum*. 1. Mexico. Syn., *P. Henckmanni*.

— *fraziniifolium*. 2. August. Caracas. 1817. Syn., *Goniophlebium fraziniifolium*.

— *Gardneri*. 1. Ceylon. Syn., *Niphobolus Gardneri*.

— *geminata*. 4. Brazil. Syn., *Anapeltis geminata*.

— *Ghiesbreghtii*. 14. South Mexico. Syn., *Goniopteris crenata*.

— *glaucochyllum*. 1. Tropical America. 1874. Syn., *Goniophlebium glaucochyllum*.

— *gonatoides*. See *P. plesiosorum*.

— *grandiceps*. 4. Formosa. 1885. Syn., *Goniophlebium grandiceps*.

— *grandidens*. See *P. persicifolium*.

— *grandifolium*. See *P. membranaceum*.

- P. guatemalense*. 2½. Guatemala. Syn., *Phlebodium inaequale*.
 — *harpeodes*. See *P. loriceum*, var. *latipes*.
 — *hastatofolium*. 1. West Indies. Syn., *Phlegopteris hastatifolia*.
 — *hastatum*. 2. July. Jamaica. 1820.
 — *hemionitideum*. 1. India and China.
 — *Henchmanii*. See *P. fraternum*.
 — *Heraclium*. 4. Java and Philippines. Syns., *P. morbiliosum* and *Drynaria Heraclia*.
 — *heterophyllum*. ½. July. West Indies. 1820.
 — *hexagonopterum*. 1. July. North America. 1811. Hardy.
 — *himalayense*. 2. North India. Syns., *P. venustum* and *Phymatodes himalayense*.
 — *incanum*. ½. August. Temperate America. 1811. Syn., *Lepicystis incana*. Greenhouse.
 — *incisum*. 1. July. West Indies. 1810.
 — *incurvatum*. ½. Moluccas. Syn., *Phymatodes incurvata*.
 — *iridifolium*. 1½. September.
 — *irregularis*. See *P. difforme*.
 — *jamaicense*. 1½. June. Jamaica. 1820.
 — *juglandifolium*. 1½. July. North India. Syns., *P. capitellatum* and *Pleuridium juglandifolium*.
 — *Kramerii*. Japan. 1878.
 — *lanceolatum*. 4. June. Jamaica. 1843.
 — *lanceolatum*. 1. August. West Indies. 1812. Syn., *Pleopeltis ensifolia*.
 — *la'tipes*. 1½. October. Brazil.
 — *letorhizon*. 4-6. North India. Syn., *Phymatodes letorhiza*.
 — *lepidopteris rufulum*. 1. Mexico. Syn., *P. rufulum*.
 — — *sepiolum*. Syn., *P. sepiolum*.
 — *Lindleyanum*. See *P. palmatum*.
 — *lineare*. ½-1. North India. Syn., *Pleopeltis munda*.
 — *lingua*. ¾. North India. Syn., *Niphobolus lingua*.
 — — *heteractis*. Fronds broader. Himalayas. Syn., *Niphobolus latus*.
 — *longifolium*. 2. Philippines. 1819.
 — *longipes*. See *P. Phymatodes*.
 — *longissimum*. 1. North India. Syn., *Phymatodes longissima*.
 — *loriceum*. 1½. Central America. Syn., *Goniophlebium loriceum*.
 — — *la'tipes*. A larger variety. Syns., *P. harpeodes* and *P. vacillans*.
 — *lucidum*. ½-1. Brazil. Syns., *P. nitidum* and *Campyloneuron rigidum*.
 — *lycopodioides*. ¾. July. West Indies. 1793. Syn., *Anapeltis lycopodioides*.
 — — *owariense*. Fronds shorter. Syn., *P. owariense*.
 — *macrocarpum*. ½. Chili.
 — *macrodon*. 3. Philippines. 1840. Syn., *Dictyopteris macrodonta*.
 — *macropterum*. 4-8. Brazil.
 — *macrotum*. 3. Queensland? 1886.
 — *madreense*. ¾. Mexico.
 — *marginellum*. ½. West Indies. Syn., *Grammitis marginella*.
 — *Martensii*. 1. Mexico.
 — *megalo'dus*. See *P. androgynum*.
 — *membranaceum*. 1-3. India. Syn., *Colysis membranacea*.
 — — *grandifolium*. A larger variety.
 — *menisicifolium*. 2-3. Brazil. 1840. Syn., *Goniophlebium menisicifolium*.
 — *Meyenianum*. 2-3. Philippines. Syns., *Aglaomorpha Meyenianum*, *Drynaria Meyenianum* and *D. philippense*.
 — *molle*. 3. St. Helena. Syn., *P. Dianæ* and *Phegopteris mollis*.
 — *morbilliosum*. See *P. Heraclium*.
 — *muscefolium*. 3. Malaya. Syn., *Phymatodes muscefolia*.
 — *myriocarpum*. See *P. pellucidum*.
 — *neritifolium*. See *P. brasiliense*.
 — *nigrescens*. 3. India. Syn., *Phymatodes nigrescens*.
 — *nigripes*. 1. Venezuela. Syn., *Phlebodium nigripes*.
 — *nitidum*. See *P. lucidum*.
 — *nitens*. July. Malacca.
 — *obliquatum*. 1. India. 1841.
 — *olivaceum*. 1. South America.
 — *Oti'tes*. See *P. tenuifolium*.
 — *owariense*. See *P. lycopodioides*, var. *owariense*.
 — *oxylobum*. See *P. trifidum*.
 — *palmatum*. 1. Philippines. Syns., *P. angustatum* and *Pleuridium palmatum*.
 — — *Lindleyanum*. Syn., *P. Lindleyanum*.
 — *papillosum*. 1. Isle of Luzon.
 — *Paradi'seae*. 4. May. Brazil. 1841.
 — *pectinatum*. 3. Mexico. 1793.
 — *pellucidum*. 1. Sandwich Islands.
 — — *myriocarpum*. More divided.
 — *peltideum*. See *P. Phymatodes*.
 — *pennigerum*. 2. New Zealand. 1835. Syn., *Goniopteris pennigera*. Greenhouse.
 — *percussum*. 1. Brazil. Syn., *Pleopeltis percussa*.
 — *persicatifolium*. 3. Java. Syn., *P. cuspidatum* and *Goniophlebium persicatifolium*.
 — — *granidens*. Pinnae deeply toothed.
 — *Phegopteris*. 1-2. Britain. Beech Polypody.
 — *Phyllitidis*. 3. Central and South America. 1793. Syn., *Campyloneuron Phyllitidis*.
 — *Phymatodes*. 3. July. East Indies. 1823. Syn., *Phymatodes vulgaris*. Forms have been named: *P. longipes*, *P. peltideum*, and *P. terminale*.
 — *Picotti*. 3. Brazil. Rev. Hort. 1886, p. 206, fig. 62.
 — *piloselloides*. ½. August. West Indies. 1793. Syn., *Goniophlebium piloselloides* and *Lopholepis piloselloides*.
 — — *cikatum*.
 — *plantagineum*. 1. July. West Indies. 1817.
 — *platyphyllum*. 2. Java. Syn., *P. crassinervium*.
 — *plebeum*. 1. Central and South America.
 — *plectolpis*. 2. Central America. Syn., *Goniophlebium plectolpis*.
 — *plesiosorum*. 1. Central and South America. Syns., *P. colpodis*, *P. gonatodes*, and *P. rhodopleuron*.
 — *Plumula*. See *P. elasticum*.
 — *polyanthum*. Brazil. 1824.
 — *proliferum*. 1. Madeira.
 — *propinquum*. ¾. India. Syns., *P. Wildenowii* and *Drynaria propinqua*.
 — *pruinatum*. 2. September. Central America. 1793.
 — *punctatum rugulosum*. 1-6. Australia. Syns., *P. rugulosum* and *Phegopteris rugulosa*. Greenhouse.
 — *pustulatum*. 1-2. New Zealand. Syn., *Rhy-matodes pustulata*. Greenhouse.
 — *quercifolium*. 1½. September. India and Australia. 1824. Syn., *Drynaria quercifolia*.
 — *rece'dens*. June. Isle of Luzon.
 — *refractum*. July. Brazil. 1837.
 — *Reinwardtii*. See *P. subariculatum*.
 — *repandum*. 1½. August. Jamaica. 1820.
 — *repens*. 2. May. West Indies. 1810.
 — *reptans*. 1. West Indies.
 — — *asplenioides*. A larger form.
 — *rhodopleuron*. See *P. plesiosorum*.
 — *rigidulum*. 2-4. Queensland. Syns., *P. diversifolium* and *Drynaria rigidula*.
 — *rufescens*. 1½-3. Java to Australia.
 — *rufulum*. See *P. lepidopteris*, var. *rufulum*.

- P. rugulosum*. See *P. punctatum*, var. *rugulosum*.
- *rupéstre*. 1. Java and Philippines. Syn., *Pleuridium rupestre*.
- *salicifolium*. †. August. Brazil.
- *sa'nctum*. 1‡. July. West Indies. 1823.
- *sandwicense*. See *P. stegnoqrammoides*.
- *Schkuhri*. See *P. elasticum*.
- *scopolendrioides*. 1‡. May. West Indies. 1820.
- *Scouleri*. 1. North-west America. Syn., *Goniophlebium Scouleri*.
- *sepultum*. See *P. lepidopteris*, var. *sepultum*.
- *serpens*. †. Australia and New Zealand.
- *Syns.*, *P. rupestre* and *Niphobolus rupestris*. Greenhouse.
- *serraeforme*. July. Isle of Luzon. 1841.
- *serrula'tum*. †. West Indies. 1823. Syn., *Xiphopteris serrulata*.
- *sertularioides*. April. Malacca.
- *Siberia'num*. See *P. cyathæfolium*.
- *Si'mile*. 2.
- *sinuosum*. †. Malacca. Syn., *Phymatodes sinuosa*.
- *soro'rium*. 1-2. South America and West Indies.
- *spectabile*. See *Nephrodium villosum*.
- *spéctrum*. †. Sandwich Islands. Syn., *Colysis spectra*.
- *sporadocarpium*. See *P. aureum*, var. *areolatum*.
- *squama'tum*. 1-2. West Indies, Central and South America. Syn., *Leptocystis squamata*.
- *stegnoqrammoides*. 1‡-2. Sandwich Islands. Syns., *P. sandwicense* and *Goniopteris stegnoqrammoides*.
- *stigmat'icum*. †. North India. 1823. Syn., *Anapeltis venosa*.
- *stigma'sum*. 2. May. Himalayas. 1823. Syn., *Niphobolus costatus*.
- *subauriculatum*. 3. Himalayas. Syn., *Schollepis subauriculata*.
- *Reinwa'dtii*. Margins of pinnae crenate.
- *subfalca'tum*. 1. July. Island of Luzon. 1839.
- *subpetiolatum*. 2. May. Mexico. 1845.
- *surrucuehense*. 2. West Indies and South America. Syn., *Goniophlebium surrucuehense*.
- *Swa'rtzii*. †. West Indies. Syns., *P. serpens* and *Anapeltis serpens*.
- *sylvicolum*. New Grenada. 1881.
- *tene'llum*. 1-2. Australia. 1823. Syn., *Arthropteris tenella*. Greenhouse.
- *tenuifolium*. 1. Brazil. 1834. Syn., *P. Otites*.
- *terminalé*. A form of *P. Phymatodes*.
- *tetra'gonum*. See *P. androgynum*.
- *thyssanolepis*. 1. Central and South America. Syn., *Goniophlebium thyssanolepis*.
- *tricho'des*. 1-4. East Indies. 1840. Syn., *Phegopteris trichodes*. Greenhouse.
- *trichomanoides*. †. August. West Indies. 1822.
- *tri'fidum*. 1. India. Syns., *P. oxylobum* and *Pleuridium oxylobum*.
- *trifurcatum*. †. July. West Indies. 1820.
- *triparti'tum*. Calabar. 1865.
- *triquetrum*. 1. Java. Syn., *Pleuridium triquetrum*.
- *tuberosum*. 2. West Indies.
- *unidenta'tum*. 3. Sandwich Islands. Syn., *Phegopteris unidentata*.
- *vacciniifolium*. †. September. West Indies. Syn., *Lopholepis vacciniifolia*.
- *vacillans*. See *P. loriceum*, var. *latipes*.
- *venosum*. See *P. lycopodioides*.
- *ven'stum*. See *P. himalayense*.
- *verruco'sum*. 4. Philippines. Syn., *Schellepis verrucosa*.
- *vulga're*. 1. Britain. Common Polypody.

The varieties of this are extremely numerous.

- P. vulga're acut'm*. Pointed.
- *auri'tum*. 1. Base of pinnae auricled.
- *bi'fidum*. 1. Fronds forked.
- *ca'mbriacum*. 1-1‡. Fronds bipinnatifid.
- *compo'situm*. 1-1‡. Fronds forked and serrate.
- *cornubi'ense*. Cornwall. 1871.
- *crena'tum*. Margins crenate.
- *crista'tum*. 1. Tip of pinnae crested.
- *elegant'issimum*. Fronds much divided.
- *marginat'm*. 1. Pinnae unequally serrate.
- *multi'fido-crista'tum*. †. Much forked and crested.
- *omnilo'cerum*. Pinnae deeply lobed, but not overlapping.
- *pulche'rriimum*. 1. A broad, deeply serrate variety.
- *semila'cerum*. 1. Bipinnatifid below, pinnate above. Ireland.
- *serra'tum*. Margins serrate.
- *suprasori'ferum*. Sori on the edges of the upper surface.
- *varia'bile*. Much divided.
- *crista'tum*. Densely crested. Also known as *glomeratum*.
- *variega'tum*. Fronds variegated with whitish-yellow.
- *virginia'num*.
- *Wildeno'vii*. See *P. propinquum*.
- *Xi'phias*. 1. South Pacific Islands. Syn., *Pleopeltis Xiphias*.

Polypody. *Polypo'dium*.

Polyporus. A genus of Fungi containing many species found growing upon the stems of old trees. Some of them attain a diameter of two feet, and becoming woody in age, are occasionally dried and used as brackets. The under surface is densely perforated with pores, which are lined with minute spores or reproductive bodies. The appearance of these fungi is a sure sign of an unhealthy state of the timber of the tree.

Poly'scias. (From *poly*, much, and *skias*, shade; the leaves afford abundant shade. Nat. ord., *Araliaceae*.)

Stove trees. For culture, see *TREVESIA*.

- P. cutisp'ngia*. Mauritius. Syn., *Gastonia cutispongia*.
- *panicula'ta*. Madagascar. 1866. Syn., *Terminalia elegans* of gardens.

Polyspo'ra. (From *poly*, many, and *spora*, seed; many-seeded capsules. Nat. ord., *Ternströmiaceae*; Tribe, *Gordoniae*.) See *Gordonia*.

- P. axillaris*. B. M. t. 4019. See *Gordonia anomala*.

Polysta'chya. (From *poly*, many, and *stachys*, a spike; referring to the inflorescence. Nat. ord., *Orchideae*; Tribe, *Vandæo-Cymbidiæe*.)

Stove, epiphytal orchids. For culture, see *ORCHIDS*.

- P. abbrevia'ta*. Brazil. 1874.
- *bractea'sa*. Yellow, brown. Sierra Leone. 1838. B. M. t. 4161.
- *bulbophylloides*. White, with orange spot on lip. West Coast of Africa. 1891.

- P. diza'ntha*. Ochre, purple. West Tropical Africa. 1882.
 — *galea'ta*. Green with red spots; lip whitish-green. July. Sierra Leone. 1837. Syn., *P. grandiflora*. B. M. t. 3707.
 — *grandiflora*. See *P. galeata*.
 — *hypocrita*. Light green with brown spots; lip whitish. West Tropical Africa. 1881.
 — *laxiflora*. January. Sierra Leone.
 — *leone'nsis*. Light green; lip white. July. Sierra Leone. 1888.
 — *linea'ta*. Green, brown. Guatemala. 1869.
 — — *ela'tior*. Plant larger. Mexico. 1869.
 — *luteola*. Yellowish-green. Mexico. 1818. Syn., *Dendrobium polystachyon*. B. C. t. 423.
 — *puberula*. Green. Sierra Leone. 1822. B. R. t. 851.
 — *pubescens*. Bright yellow, red. January. Delagoa Bay. 1838. B. M. t. 5586. Syn., *Epiphora pubescens*.
 — *purpurea*. Purplish. July. India.
 — *rufinula*. Brown, greenish, yellowish, purple. Zanzibar. 1879.

Poly'stichum. (From *poly*, many, and *stichus*, a row; numerous rows of spore cases. Nat. ord., *Filices*.) A section of **Aspidium**.

For culture, see FERNS.

- P. acrosticoi'des*. 2. N. America. 1820.
 — — *grandiceps*. N. America. 1880.
 — *aculeatum*. 3. Britain.
 — *angulare*. 4. Britain.
 — — *Ma'ya*. 1. Totnes Down Hill. 1881.
 — *anomalum*. 2. Ceylon. 1856.
 — *aristatum*. 1. July. Norfolk Island.
 — *auriculatum*. July. East Indies. 1793.
 — *Brau'ni*. Germany.
 — *capense*. South Africa. 1823.
 — *conceatum*. Japan. 1862. Syn., *Lastrea Standishii*.
 — *conifolium*. 1½. June. E. Indies. 1841.
 — *coriaceum*. 3. Mauritius. Stove.
 — *crenatum*. New Grenada. Stove.
 — *denticulatum*. July. Jamaica.
 — *discre'tum*. May. Nepal.
 — *drapa'num*. June. Madeira. 1822.
 — *falcinellum*. May. W. Indies.
 — *flavum*. 3. Juan Fernandez. 1856. Stove.
 — *frondosum*. 3. Madeira. Greenhouse.
 — *glandulosum*. June.
 — *hispidum*. July. New Zealand. 1845.
 — *lentum*. India. 1879.
 — *lepidocaulon*. Japan. 1875.
 — *lobatum*. 2. Britain.
 — *Lonchitis*. 1½. Britain.
 — *mechianum*. 2. Mexico. 1857. Stove.
 — *mauronia'tum*. Jamaica. 1838.
 — *mun'ium*. May. Jamaica. 1839.
 — *obtusum*. June. Isle of Luzon.
 — *ordina'tum*. S. America.
 — *platyphyllum*. 3. Columbia. Greenhouse.
 — *polyblepharum*. Japan. 1884.
 — *proliferum*. July. Brazil. 1842.
 — *ru'ngens*. May. South Africa. 1823.
 — *rhomboideum*. April. E. Ind.
 — *setosum*. Japan. 1862.
 — *spectiosum*. July. Nepal.
 — *triangulum*. ¾. Jamaica. Stove.
 — *tripteron*. Japan. 1880.
 — *vestitum*. June. Tasmania. 1842.
 — — *grandidens*. 1882.
 — — *venustum*.
 — *viviparum*. W. Indies.

Polyxe'na. (After *Polyxena*, the daughter of Priam. Nat. ord., *Liliaceae*; Tribe, *Alliæ*.)

South African bulbs. For culture, see MASONIA.

- P. odora'ta*. ¾. White. October. South Africa. 1871. Syn., *Massonia odorata*. B. M. t. 5891.
 — *pygmaea*. ½. Lilac. April. South Africa. 1790. Syn., *Massonia ensifolia*, B. M. t. 554, *M. uniflora* and *M. violacea*.

Pomade'rris. (From *poma*, a lid, and *derris*, a skin; the membranous covering of the seed vessel. Nat. ord., *Rhamnaceae*; Tribe, *Rhamneae*.)

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°. *Elliptica*, with the exception of having creamy-like flowers, resembles the *Ceanothus azureus*, and no doubt would prove almost as hardy against a wall.

- P. acuminata*. See *P. discolor*.
 — *andromedae'folia*. See *P. phillyreoides*.
 — *apetala*. 4. Greenish. June. 1803. Syn., *P. aspera*. Victorian Hazel.
 — *aspera*. See *P. apetala*.
 — *betulin*. Pale yellow. B. M. t. 3212.
 — *discolor*. 5. Whitish. April. 1814. Syn., *P. acuminata* and *P. elliptica*, var. *discolor*.
 — *elliptica*. 6. June. 1805. B. M. t. 1510.
 — *ericifolia*. See *P. phillyce'folia*.
 — *ferruginea*. 6. April. 1810. Syn., *P. viridiflora* and *P. Wendlandiana*.
 — *globulosa*. See *Spyridium globulosum*.
 — *lanigera*. 3. April. 1806. B. M. t. 1823. Syn., *Ceanothus laniger*.
 — *ledifolia*. 2. April. 1824.
 — *ligustri'na*. White. June. 1828.
 — *phillyreoi'des*. 2. April. 1818. Syn., *P. andromedae'folia*. B. M. t. 3219.
 — *phlyctifolia*. 2. April. 1819. B. C. t. 120. Syn., *P. ericifolia*.
 — *vaccinifolia*. Cream-colour. Victoria. 1869.
 — *viridiflora*. } See *P. ferruginea*.
 — *Wendlandia'na*. }

Poma'ria. (Named after *Pomar*, a Spanish physician. Nat. ord., *Leguminosae*; Tribe, *Cæsalpinieae*. Allied to *Cæsalpinia*.)

Greenhouse evergreen shrub. Seeds in a hotbed, in spring; cuttings of half-ripened shoots in May, in sand, under a bell-glass; sandy loam and fibry peat. Winter temp., 40° to 48°.

- P. glandulos*. 6. Yellow. May. New Spain. 1826. Syn., *Cæsalpinia glandulosa*.

Po'max. (From *poma*, a lid; the operculum, or covering of the seed-vessel. Nat. ord., *Rubiaceae*; Tribe, *Anthospermeae*. Allied to *Opercularia*.)

- Greenhouse evergreen. See OPERCULARIA.
P. hirta. 1. White, green. July. Australia. 1826.

Pomegranate. *Pu'nica*.

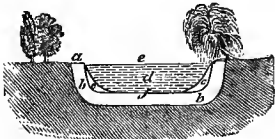
Pompion. *Cucu'rbita*.

Poncele'tia. (Named after *M. Poncelet*, author of a treatise on Wheat. Nat. ord., *Epacridaceae*; Tribe, *Epacreae*.) See **Sprengelia**.

- P. sprengelii'des*. See *Sprengelia Ponceletia*.

Ponds are reservoirs for 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 be of any convenient size, from a couple of yards upwards to as many acres. The following is the section of a pond thus formed :



a indicates the surface of the ground at the edge of the water; *b*, the puddle; *c*, the facing to preserve the puddle from injury; *d*, the water; *e*, the surface of the latter; and *f*, the ordinary bottom. 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 three feet is the proper space to allow for this; the puddle requiring about two feet, and the facing which requires to be laid upon the puddle ought to be about a foot more, making together three feet. Ponds may be made very ornamental.

Pone'ra. (From *poneros*, miserable ;

appearance of the plants. Nat. ord., *Orchideæ* ; Tribe, *Epidendrea-Labiææ.*)

Stove epiphytal orchids. See ORCHIDS.

P. amethystina. Whitish, purple. Veraguas. 1899.

— *juncifolia.* Mexico. Syn., *Nemaconia graminifolia.* Kn. and West. ii. p. 127.

— *Kienastii.* See *Scaphyglottis Kienastii.*

— *pellita.* Yellowish, striped with purple. New Grenada. 1880.

— *striata.* 2. Green. Guatemala. 1851.

Pongamia. (*Pongam*, its Malabar name. Nat. ord., *Leguminosæ* ; Tribe, *Dalbergiææ.* Allied to *Dalbergia.* Syn., *Galedupa.*)

Stove evergreen shrubs and climbers, all but one white-flowered, and from the East Indies. For culture, see DALBERGIA.

P. glabra. 5. India. 1699.

— *grandiflora.* 6. India. 1818.

— *marginata.* 3. Yellow. May. 1824. Twiner.

A synonym of *Derris cuneifolia.*

— *piscidia.* India. 1818.

— *uliginosa.* W. Ind. 1824. Twiner. A synonym of *Derris uliginosa.*

Pontede'ria. (Named after *J. Pontedera*, professor of botany at Padua. Nat. ord., *Pontederiaceæ.*)

Blue-flowered aquatics. Divisions of the roots; rich, strong, loamy soil, in a tub of water or an aquarium.

P. angustifolia. See *P. cordata*, var. *angustifolia.*

— *azu'rea.* B. M. t. 2932. See *Eichornia crassipes.*

— *cœrulea.* 2. July. N. America. 1830.

— *cordata.* 2. July. N. America. 1759. B. M. t. 1156.

— — *angustifolia.* 2. July. N. America. 1806. Syns., *P. angustifolia* and *P. lanceolata*, B. C. t. 1613.

— *crassipes.* See *Eichornia crassipes.*

— *dilatata.* Andr. Rep. t. 490. See *Monochoria hastata.*

— *lanceolata.* B. C. t. 613. See *P. cordata*, var. *angustifolia.*

Ponthie'va. (After *M. de Ponthieu*, a West Indian merchant. Nat. ord., *Orchideæ* ; Tribe, *Neottiaæ-Spirantheæ.*)

Stove, terrestrial orchids. Sandy loam and peat. Divisions.

P. glandulosa. 1. Bright green, white. West Indies. 1800. Syn., *Neottia glandulosa.* B. M. t. 842.

— *maculata.* 1. Buff, white, green, yellow. March. Venezuela. 1882. B. M. t. 6637.

— *petiolata.* 1½. Cinnamon-yellow. St. Vincent. B. R. t. 760.

Pon'tia. A genus of butterflies, also known as *Pieris*, 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, two 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. ra'pæ (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*.

Popcorn. *Ze'a Ma'ys*.

Poppe's Head. *Meloc'ctus commu'nis*.

Poplar. *Po'pulus*.

Poppy. *Papa'ver*.

Poppy, Californian. *Platyste'mon califo'rnicus*.

Poppy, Corn. *Papa'ver Rhæ'as*.

Poppy Gall Fly. *Au'lax rhæa'dis*.

Poppy, Horned. *Glan'cium lu'teum*.

Poppy-Mallow. *Callirho'e*.

Poppy, Opium. *Papa'ver somni'ferum*.

Po'pulus. Poplar. (From *arbor-poli* of the Romans, or the tree of the public; the Turin poplar much planted in their cities. Nat. ord., *Salicinez.*)

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. 100. March. Britain. Eng. Bot. ed. 3, t. 1299. Abele; White Poplar.

— *Bollea'na*. Tifis. 1879.

— *canescens*. 40. March. England. Eng. Bot. ed. 3, t. 1300. Syn., *P. canescens* Grey Poplar.

— *acerifo'lia*. Maple-leaved.

— *egypti'aca*. Egypt.

— *aremb'rgica*. 1835.

— *be'lgica*. South Europe. 1335.

— *hy'brida*. 40. April. Caucasus. 1816.

— *ni'va*.

— *pe'ndula*. Drooping-branched.

— *macrophy'lla*. Large leaved.

— *Pica'rdi*.

— *angula'ta*. See *P. monilifera*.

— *balsami'fera*. 70. April. N. America. 1792.

— *ca'ndicans*. Syn., *P. macrophylla*.

— *fo'liis variegat'is*. April.

— *interme'dia*. April.

— *latifo'lia*. 40. April.

— *laurifolia*. April. Siberia. Syn., *P. laurifolia*.

— *suave'olens*. 76. April. Russia. 1825.

— *viminalis*. 40. April. Altaï. 1826.

— *betulifo'lia*. 40. March. N. America. Black American Poplar.

— *canadensis*. See *P. monilifera*.

— *au'rea*. See *P. monilifera*, var. *aurea*.

— *canescens*. See *P. alba*, var. *canescens*.

— *dilatata*. See *P. nigra*, var. *pyramidalis*.

— *Euge'ni*. See *P. monilifera*, var. *Eugenii*.

— *euphratica*. Turkestan. 1831.

— *fastigiata*. See *P. nigra*, var. *pyramidalis*.

— *græ'ca*. See *P. tremuloides*.

— *grandidentata*. 60. March. N. America. 1772.

— *pe'ndula*. 40. Branches drooping. March. N. America. 1820.

— *heterophy'lla*. 60. March. N. America. 1765.

— *laurifo'lia*. See *P. balsamifera*, var. *laurifolia*.

— *longifo'lia*. April. N. America. 1843.

— *macrophy'lla*. See *P. balsamifera*, var. *candicans*.

— *monilifera*. 70. May. Canada. 1772.

Wats. Dendr. t. 102. Syns., *P. angulata* and *P. canadensis*.

— *au'rea*. Leaves tinged with golden-yellow.

Syn., *P. canadensis*, var. *aurea*.

— *Euge'ni*. Garden variety. 1887. Syns., *P. Eugenii* and *P. pyramidalis*, var. *Meetensis*.

— *Lindleyana*. April. Canada. 1772.

— *variegata*. May.

— *nigra*. 50. March. Britain. Eng. Bot. ed. 3, t. 1302. Black Poplar.

— *pyramida'lis*. Pyramidal. Syns., *P. dilatata* and *P. fastigiata*. Lombardy Poplar.

— *salsifo'lia*. April. Floetbeck. 1834.

— *sine'nsis*. China. 1867.

— *viridis*. April. Britain.

— *pseudobalsamifera*. April. N. America. 1843.

— *Simo'ni*. China. 1867.

— *Steiniana*. Garden hybrid. Gf. 1888, p. 173, figs. 37, 38.

— *tremula*. 80. March. Britain. Eng. Bot. ed. 3, t. 1307. Aspen.

— *laevigata*. 80. March. N. America. 1760.

— *pe'ndula*. April.

— *supi'na*. March. N. America. 1824.

— *tremuloides*. 50. N. America. Syns., *P. græca* and *P. tremuloides*.

— *trepida*. 30. N. America. 1812.

— *tristis*. April. N. America. 1843.

— *Via'dri*. Germany. 1890.

Pora'na. (From *poreno*, to travel;

3 E

the twining stems extending far and wide. Nat. ord., *Convolvulaceæ*; Tribe, *Convolvuleæ*. Allied to *Convolvulus*.)

Stove evergreen, East Indian, 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. October. 1823. Syn., *Dinetus paniculatus*.

— *racemosa*. July. 1823. Syn., *Dinetus racemosus*. Swt. Fl. Gard. t. 127.

— *volubilis*. 50. July. 1820.

Poranthe'ra. (From *poros*, a pore, or opening, and *anthera*, an anther, or pollen-bag; anthers opening by pores. Nat. ord., *Euphorbiaceæ*; Tribe, *Stenolobieæ*.)

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. 1. White. July. Australia. 1824.

Porlie'ra. (Named after *P. A. Porlier*, a Spaniard. Nat. ord., *Zygophyllaceæ*. Allied to *Melanthus*.)

Stove evergreen shrub, with leaves which close before rain; hence called *hygrometrica*. 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. hygrometrica. 6. Peru. 1820.

Por'pax of Lindley. (From *porpax*, a button; shape of pseudo-bulbs. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Eriacæ*.) See **Eria**.

P. reticulata. See *Eria reticulata*.

Por'pax of Salisbury. (Nat. ord., *Liliaceæ*.) A synonym of **Aspidistra**.

Porphyro'coma. (From *porphyra*, purple, and *koma*, a head; flower-heads purple. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*.) See **Dianthera**.

P. lanceolata. B. M. t. 4176. See *Dianthera lanceolata*.

Por'tea. (Dedicated to its discoverer, *Marius Porte*. Nat. ord., *Bromeliaceæ*; Tribe, *Bromeliææ*.)

Stove perennials. For cultivation, see **BILLBERGIA**.

P. kermesina. Bluish-lilac; bracts rosy. Bahia. 1870. Gf. t. 828. Syn., *Billbergia Brongniarti*.

— *Legrelliana*. 1. Bright red, purple. Brazil. 1875. Syns., *Echinea Legrelliana*, *Hohenbergia Legrelliana*, Ref. Bot. t. 285, and *Ortgiesia Legrelliana*.

tillandsioides. Red. Tropical America. 1860. Syns., *Echmea Ortgiesii* and *Ortgiesia tillandsioides*.

Portenschlag'gia. (After *F. v. Portenschlag-Ledemeyer*, an Austrian botanist, who died 1821. Nat. ord., *Celas-trineæ*.)

Hardy perennials, for culture, see **ELÆODENDRON**.

P. australis. A synonym of *Elæodendron australe*.
— *ramosissima*. Yellowish-white. Dalmatia. 1888.

Portla'ndia. (Named after the *Duchess of Portland*. Nat. ord., *Rubiaceæ*; Tribe, *Condamineæ*.)

Stove evergreen shrubs, from Jamaica. 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. 5. Scarlet. 1812.

— *grandiflora*. 12. White. 1775. B. M. t. 286.

— *hexandra*. A synonym of *Coularea speciosa*.

— *platyntha*. White. July. 1849. B. M. t. 4534.

Portugal Laurel. *Ce'rasus lusitania'nicus*.

Portugal Quince. *Cydo'nia vulgaris*, var. *lusitania'nica*.

Portula'ca. Purslane. (From *porto*, to carry, and *lac*, milk; milky juice. Nat. ord., *Portulacææ*. 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.

STOVE SUCCULENT.

P. soma'lica. ‡. Bright yellow. Somali Land. 1886.

GREENHOUSE TUBEROUS EVERGREENS.

P. Gillie'sii. ‡. Red, pink. Mendoza. 1827. B. M. t. 3064.

— *grandiflora*. Yellow, purple. June. Chili. 1827. B. M. t. 2885.

— *Regelii*. Pink, with yellow centre. Chili. 1885. Gf. t. 1209.

— *Thellusonii*. See *P. Thellusonii*.

— *splendens*. Crimson, purple. May. Chili. 1839. Herbaceous perennial. B. R. 1843, t. 34.

— *Thellusonii*. 1. Scarlet. July. South Europe. 1839. B. R. 1840, t. 31. Syn., *P. grandiflora*, var. *Thellusonii*.

— *lutea*. 1. Yellow. June. 1847.

— *splendens*. 1. Reddish-purple. June.

GREENHOUSE ANNUALS.

P. halimoides. See *P. pilosa*.

— *meridia'na*. See *P. quadrifida*.

— *olerea parvifolia*. ‡. Yellow. June. Jamaica. 1799.

— *pilosa*. ‡. Pink. June. S. Amer. 1690. Syn., *P. halimoides*.

— *pusilla*. ‡. Yellow. June. Trinidad. 1824.

— *quadrifida*. ‡. Yellow. August. E. Ind. 1773. Syn., *P. meridia'na*.

HARDY ANNUALS.

P. foliosa. B. R. t. 793. See *P. suffruticosa*.

— *grandiflora lutea*. Yellow. June. Chili. 1827.

— *guineensis*. ‡. Yellow. June. Guinea. 1823.

— *involuta*. See *P. suffruticosa*.

— *micronata*. ‡. Yellow. June. 1822.

- P. olera'cea*. $\frac{3}{4}$. Yellow. July. Europe. 1582.
 — — — *asi'rea*. 1. Yellow. August. S. Amer.
 1652.
 — — — *sati'va*. $\frac{1}{4}$. Yellow. August. S. Amer.
 1652.
 — *racem'osa*. See *Talinum racemosum*.
 — *sati'va*. See *P. oleracea*, var. *sativa*.
 — *suffrutico'sa*. $\frac{1}{4}$. Yellow, pink. June. Guinea.
 1820. Syns., *P. foliosa* and *P. involu-*
crata.

Posoque'ria. (*Posoqueri*, the Guianan name of *P. longifo'ra*. Nat. ord., *Rubiaceæ*; Tribe, *Gardenieæ*. 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*. See *Randia dumetorum*.
 — *fra'grans*. See *Randia malabarica*.
 — *fragrant'issima*. White. Brazil. 1870. III. Hort. 1870, t. 27.
 — *gra'cilis*. 5. Guiana. 1825.
 — *latifo'lia*. 5. September. Guiana. 1826. Syn., *P. revoluta*.
 — *longifo'ra*. 5. Guiana. 1822.
 — *multifo'ra*. See *Randia longifo'ra*.
 — *revolu'ta*. See *P. latifo'lia*.
 — *versi'color*. Pinky-white. September. Cuba. 1839. B. R. 1841, t. 26.

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; seaweed 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, through 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.

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, five or six 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 twelve inches long, they being covered three inches thick with mould at a joint. For the main crops, moderate-sized whole or half 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 twelve inches apart each way, and for the main ones eighteen inches; the sets six 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 six or eight feet wide. If the staple of the soil be good throughout, the alleys may be two 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.

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 a quarter of an inch deep, and six 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 three inches, they are moved into a similar soil, in rows sixteen inches apart each way. Being finally taken up in the course of October, they must be preserved until the following spring, to be then replanted 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 four 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 six inches deep, and the sets planted in rows six or eight 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 four 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 fifteen 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 six 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 two 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 four 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.

The best rules to obtain and preserve sound potatoes, and a good crop, are—1. Grow none but those which ripen by August. 2. Plant whole, middle-sized potatoes. 3. Plant on moderately light soil, manured some months previously. 4. Apply no manure at the time of planting. 5. Plant in November in light, dry soils, but not until February in wet soils. 6. Preserve your seed potatoes between layers of earth until required. 7. Plant

as you dig; that is, dig enough for one row, and then plant it with the dibble, so as to avoid trampling on the ground. 8. Let the tops of the sets be six inches below the surface. 9. Do not earth up the stems. 10. Do not cut down the stems. 11. Take up the crop as soon as the leaves begin to look yellow in July or early August. 12. Store in a dry shed between layers of earth, sand, or coal-ashes.

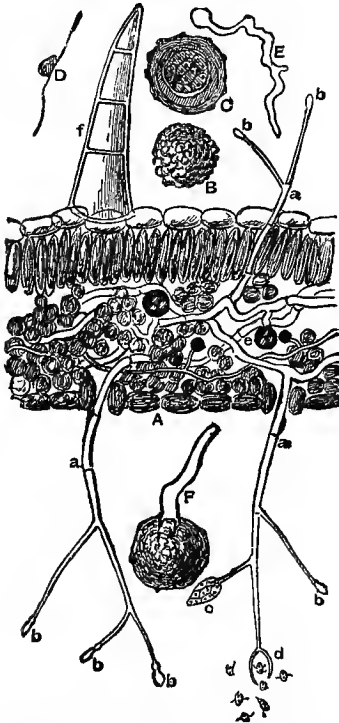
Potato, or Colorado Beetle.
Doryophora decemlineata.

Potato Murrain, or Potato Disease. This disease—which has been more or less destructive to the potato crops since the year 1845, when it was so general as to cause great losses and much distress in some parts of the kingdom, by the almost total failure of the crops—is caused by the attacks of two kinds of fungi, named *Peronospora infestans* and *Fusisporium solani*, which spread through the tissues of the potato, corroding and causing the death and decay of every part with which they come in contact, so that in the end, if left to themselves and the weather being favourable to their growth, they bring about the death and putrefaction of the entire potato plant. The disease usually makes its appearance in July or August, sometimes earlier, and is first made evident by the appearance of brown spots upon the leaves; it generally appears soon after the first heavy summer rains, as wet weather is favourable to the development and growth of the fungi, and it is more prevalent in wet seasons than in dry ones, especially if the season be a warm one and thunder storms frequent.

That the disease is caused by fungi, has been known for many years, but it was not until 1875 and 1876 that their life-history was fully worked out, when this was successfully accomplished by Mr. W. G. Smith, and thus a firm basis secured upon which to commence a war of extermination against the disease, because the first real step towards the cure of any disease is to thoroughly understand its cause. From the life-history of *Peronospora infestans* as published by Mr. Smith in the "Gardeners' Chronicle" for 1875 and 1876, we condense the following account:

If a section be made through a badly diseased potato leaf and highly magnified, it will present somewhat the appearance shown at A in our engraving, where the thread-like jointed *mycelium* of the fungus is seen growing among the cells

composing the potato leaf. Branches from this, as at *a a a*, grow through the epidermis, or pass through the stomata into the air, and there become branched. The ends of the branches develop spores of two kinds. One kind (*b b b b b b*) are called *conidia*, because they are so



minute and dust-like. As soon as one of these is detached from the branch producing it, another is formed in its place, and so a very abundant crop of these conidia is produced, each one of which is capable of reproducing the fungus if it falls upon, or is carried by the wind to, a place that is favourable for its growth. The second kind are the *zoospores*. These are formed in an egg-shaped cell terminating a branch (*c*), termed a *swarm-spore*. When wetted by dew or rain, the swarm-spore bursts and the zoo-spores are set free (*d*). These move about by means of the two little tails with which they are furnished, and often pass through the stomata into the interior of the leaf, and there germinate and reproduce the fungus. These two kinds of spores are produced in countless myriads during the brief vege-

tating period of the fungus, but with the decay of the plant these die, and for the preservation of the species during the winter months another kind of spore is formed. The mycelium in the interior of the leaf, stem, and tuber develops, at the ends of short branches, spherical bodies of two sizes, as shown at *e*. The smaller of these is the *antheridium*, and the larger the *ogonium*. The antheridium applies itself to the oogonium, which it pierces with a small tube that it protrudes, and the contents of the two bodies blend; this constitutes fertilization. The fertilized oogonium increases in size, and various internal and external changes take place, until it finally becomes matured into the *resting spore*, shown at *B*, with a thick warted outer wall; in this state it passes the autumn, winter, and spring months, being again called to life by the summer rains. The contents of some of the resting spores break up into the zoospores, (*C*), which, when set free, develop two tails, or cilia (*D*), by the vibration of which they move about in any moist medium. After a short time they come to rest, the tails fall into dust, and they germinate and produce mycelium, as at *E*. Other resting spores do not break up into zoospores, but at once develop a mycelial thread, as at *F*, which is much stouter than is produced by the zoospores, and it is most probable that there is a sexual relationship existing between them; for if the mycelium of each kind could be traced, it would probably be found that the slender threads, which produce the antheridia, are those developed from the zoospores of the resting spore, whilst the stouter threads, which produce the oogonia, are those directly produced from the resting spore. The figures *B* to *F* in our engraving are much more highly magnified than is Fig. *A*; *f* is a hair arising from the upper surface of the leaf.

The mycelium developed from the resting spores, whether these break up into zoospores or not, on coming in contact with a potato plant, penetrates and corrodes its tissues, passing up the stem, branching as it grows, and finally pushes branches through the tissues into the air, and there completes the cycle by producing conidia and zoospores, by which the disease is rapidly spread; for these are produced in myriads, and as they germinate under favourable conditions in about an hour, a large area may soon become affected with the disease, from the proximity of a single diseased Potato plant.

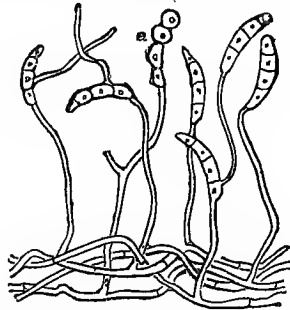
The *Peronospora* also attacks the Tomato, proving equally destructive to it as to the Potato.

Although the Potato disease has been such a terrible plague for so many years, there is no known remedy that seems to be of much avail against its ravages. If the season is a tolerably dry one and the tubers are well formed, the crop may be saved by pulling up the haulm before the heavy summer rains come. If the crop once becomes diseased, nothing is likely to stop the disease entirely, because the mycelium grows so rapidly, that although by the application of some remedy it may be killed where the disease seems worst, there is almost certain to be some distant branch of the mycelium that is not killed by the remedy applied, and which will continue the disease.

From what we know of the life-history of *Peronospora*, it appears that it does not exist in a vegetating condition during the winter, but only in the form of resting spores, for the mycelium, aerial zoospores, and conidia are said to perish annually. From these facts two things become very evident: first, that it is hopeless to attempt to exterminate the fungus when it is vegetating and producing conidia and zoospores; for these are produced in such abundance that the air may be said to swarm with them in the neighbourhood of infested Potato plants, and will very rapidly reproduce the fungus and spread the disease. Secondly, that the attack upon the fungus should be made when it is in the resting state, during late autumn and winter. The first step to take is to burn all the Potato haulm as soon as the crop is lifted, so that any resting spores that may be contained in the stems or leaves may be destroyed; for if they are thrown into a heap and allowed to rot, the resting spores will be preserved, and will, the next season, propagate the disease. The next thing is to endeavour to destroy the resting spores that are contained in the earth: if this could be successfully accomplished, the next year's Potato crop would be certain to be pretty free from the disease, unless it were in close proximity with an infected Potato patch, from which the disease could spread. How the resting spores may best be destroyed in the earth, is a question we are unable to answer, for it is here that practical experiments are greatly needed, as hitherto experiments have been confined to the discovery of remedies against the fungus when in a vegetating condition, and these remedies have all failed,

because, as shown above, they do not attack the root of the disease. What is required is something with which the ground can be watered after the crop is lifted, that is cheap enough to be used in large quantities, potent enough to penetrate deep into the soil and to kill the resting spores, and yet it must be quite harmless to the Potato when planted; that is, it should lose its power to hurt vegetation after the lapse of a month or so. It is in this direction that experimentalists should turn their attention. As a remedy of this kind, to be applied when the ground is clear of crops, we would suggest a trial of a dilute solution of sulphuric acid and water.

Fusisporium Sola'ni, of which we here give a magnified representation, is nearly as destructive to the Potato as the *Peronospora*, which it often accompanies. The slender mycelial threads of this fungus ramify through the tissues of the Potato, producing in places aerial fusiform bodies consisting of four cells (spores), one or more of which, in some



cases, germinates and produces a mycelial thread whilst attached to the thread from which it was developed. In other cases the cells become gradually rounded off, as shown at *a*, and separate from each other, forming the resting spores. These remain dormant for a few months, and then, under favourable conditions, they germinate and reproduce the fungus. Whatever remedy is found to answer with the *Peronospora* will also prevail against the *Fusisporium*.

Potato, or Under-ground Onion. (*Allium aggregatum*.) 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, eight 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 made more than four 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. *Batatas edulis.*

Potentilla. Cinquefoil. (From *potens*, powerful; the supposed medicinal quality. Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*.)

Hardy herbaceous perennials. *Candicans* and

lineariloba require 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. adscendens.* 1. June. Hungary. 1806.
— agrimonoides. ½. July. Caucasus. 1817.
— alba. ½. White. May. Wales.
— alpestris. ½. Orange. July. Britain. Eng. Bot. ed. 3, t. 429.
— ambigua. ½. Yellow. June. Himalaya. 1851. B. M. t. 4613.
— angustifolia. ½. June. Siberia. 1824.
— anserina. ½. July. Britain.
— apennina. ½. White. May. Apennines. 1821.
— argentea. 1. June. Britain.
— arguta. 1-3. Pale yellow. June. N. America. 1826. B. R. t. 1379.
— argyrophylla. 3. Yellow. Summer. Himalayas. 1840. Syn., *P. insignis*.
— atrosanguinea. 1½. Dark crimson. July. Himalayas. 1822. Syn., *P. atropurpurea*, B. M. t. 2689.
— astracinea. 1. July. Siberia. 1787. Jacq. Ic. t. 92.
— atro-sanguinea. See *P. argyrophylla*, var. *atro-sanguinea*.
— bicolor. 1. Yellow, red. March. Nepal. 1843. B. R. 1845, t. 62.
— biflora. ½. June. Siberia. 1820.
— bifurca. ½. June. Siberia. 1773.
— subsericea. ½. June. Astracan. 1827.
— Boeckni. ½. White. July. Apennines. 1823.
— Calabra. Yellow. July. 1829. B. C. t. 1757.
— canadensis. 1. June. N. Amer. 1800.
— candicans. ½. May. Mexico. 1820.
— caulescens. 1. White. July. Austria. 1759.
— chrysantha. 1. Golden. June. Siberia. 1827.
— Clusiana. ½. White, yellow. June. Austria. 1806. B. M. t. 1327.
— collina. 1. June. South Europe. 1816.
— Comarum. 2. Purple. June. Britain. Syn., *Comarum palustre*. Marsh Cinquefoil.
— conferta. ½. June. Altai. 1831.
— congesta. See *Horkelia congesta*.
— crocea. 1. Copper. August. Switzerland. 1816.
— dealbata. 1. July. Altai.
— desierorum. 1. June. Altai. 1830.
— diffusa. 1. July. 1817.
— effusa. 1. August. N. Amer. 1826.
— Egedii. ½. May. Denmark. 1820.
— ferruginea. Rusty-brown. July. Paxt. Mag. v. p. 223.
— filipendula. 1. June. Dauria. 1823.
— flagellaris. ½. June. Siberia. 1820.
— formosa. See *P. nepalensis*.
— Fragaria. ½. White. May. Britain.
— fragiformis. 1. June. South Europe. 1800.
— fruticosus. 3. July. England. Eng. Bot. ed. 3, t. 436.
— dahurica. 2. August. Dauria. 1824.
— tenuiloba. 1½. August. N. Amer. 1811.
— Garipeensis. White. June. Cape of Good Hope. 1837.
— glabra. White. Siberia. B. C. t. 914.
— glandulosa. 1. August. California. 1830. B. R. t. 1583.
— — incisa. 2. July. California. 1835.
— gracilis. 1. July. N. Amer. 1826. B. M. t. 2984.
— grandiflora. 1. June. Siberia. 1640. B. M. t. 75.
— Guntheri. 1. June. Europe. 1818.
— Hippiana. 1½. July. N. Amer. 1826.
— hirsuta. 1. June. N. Amer. 1820.

- P. Hopwoodia* 'na. 1½. Straw-colour to deep rose. June. B. R. t. 1387. A hybrid.
 — *hybrida*. ½. White. June. Germany. 1820.
 — *insignis*. See *P. argyrophylla*.
 — *laciniosa*. 1. Yellow. June. Hungary. 1816. B. R. t. 1478.
 — *lineariloba*. ¾. July. Mexico. 1824.
 — *Loddigésii*. 1. June. Siberia.
 — *lupinoides*. See *P. nivalis*.
 — *macrantha*. ½. May. Siberia. 1820.
 — *minima*. ¼. Yellow. May. Alps. 1818. B. C. t. 480.
 — *missouriensis*. See *P. pennsylvanica*.
 — *mollissima*. 1½. July. Europe. 1832.
 — *monsperliensis*. ¾. April. France. 1680.
 — *multifida*. ½. July. Siberia. 1759.
 — *angustifolia*. ¾. June. Siberia.
 — *nepalensis*. 1½. Purple. June. Nepal. 1822. Syn., *P. insignis*.
 — *nivida*. ½. White, red. June. Switzerland. 1816. Garden, June 21, 1884.
 — *nivalis*. ½. White. July. Pyrenees. 1739. Syn., *P. lupinoides*. B. C. t. 654.
 — *nivea*. ½. July. Siberia. 1816. B. C. t. 460.
 — *macrophylla*. ¾. June. N. Amer. 1827.
 — *ochrea* 'ta. Yellow. September. Himalaya. 1850.
 — *patula*. ½. June. Hungary. 1818.
 — *pectinata*. 1½. July. N. Amer. 1826.
 — *pedata*. 1. June. Europe. 1819. B. C. t. 579.
 — *pennsylvanica*. 1. July. N. Amer. 1725. Syn., *P. missouriensis*.
 — *pimpinelloides*. ¾. May. Levant. 1758.
 — *pulcherrima*. ½. May. N. Amer. 1837.
 — *pyrenaica*. 1. Golden-yellow. Summer. Pyrenees.
 — *recta*. 1. June. South Europe. 1648.
 — *reptans*. ½. May. Britain.
 — *floropleta*. ¾. July. Britain.
 — *variegata*. ½. July. Britain.
 — *Richardsonii*. 1. July. N. Amer. 1826.
 — *rupesstris*. 1. White. June. England.
 — *Russelliana*. 1. Rich scarlet. Summer. B. R. t. 1496. A hybrid.
 — *ruthenica*. 1½. July. Siberia. 1799.
 — *Saxifraga*. ½. White. May. Mentone.
 — *sericea*. ½. July. Siberia. 1780.
 — *Sibbaldia* 'ta. ½. Yellow. July. Britain. Eng. Bot., ed. 3, t. 426. Syn., *Sibbaldia procumbens*.
 — *Sieversiana*. June. Nepal. 1822.
 — *Smoultii*. Yellow with red centre. 1848. Fl. Ser. t. 373. Hybrid.
 — *speciosa*. 1. June. Crete. 1821.
 — *splendens*. ¾. Yellow. Autumn. Nepal. B. M. t. 2700.
 — *stipularis*. 1. July. Siberia. 1727.
 — *Thomasi*. ½. June. Italy. 1822. Swt. Fl. Gard., ser. 2, t. 365.
 — *Tormentilla*. ½. White. June. Britain. Eng. Bot., ed. 3, t. 430. Syn., *P. tridentata*.
 — *umbrosa*. ½. White. May. Tauria. 1818.
 — *unguiculata*. ½-1. Pearly white. July. California. 1880. B. M. t. 6560. Syn., *Ivesia unguiculata*.
 — *uniflora*. ½. May. Dauria. 1819.
 — *verna*. ½. June. Britain. Eng. Bot., ed. 3, t. 428.
 — *verticillaris*. ½. June. Siberia. 1818.
 — *villosa*. ½. June. N. Amer. 1820.
 — *viscosa*. 1. July. Dauria. 1797. B. R. t. 1492.
 — *Weinmannii*. ½. Yellow. May. Alps. B. C. t. 706.

Potherb Moth. *Mame'stra*.

Potherbs. See **Herbary**.

Po'thos. (The Cingalese name for one species. Nat. ord., *Aroidæ*; Tribe, *Orontieæ*. 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; fibry peat, fibry loam, rotten wood, and charcoal. Winter temp., 55° to 60°; summer, 60° to 90°.

- P. acutis*. A synonym of *Anthurium Hookeri*.
 — *angusta* 'ta. ½. May. Trinidad. 1823. A synonym of *ANTHURIUM ANGUSTATUM*.
 — *argentea*. Upper surface of leaves silvery grey, except the midrib, which is green. Borneo. 1887.
 — *argyrea*. See *Scindapsus argyrea*.
 — *au'rea*. Leaves variegated with yellow. Solomon Isles. 1880. This is probably some species of *SCINDAPSUS* or *RAPHIDOPHORA*.
 — *celavocensis*. Very useful for covering walls, trunks of tree-ferns, etc., the leaves being close together and applied flat to the surface of whatever the plant climbs upon. N. W. Borneo. 1980.
 — *crassinervis*. A synonym of *Anthurium crassinervis*.
 — *elongata*. Leaves dark shining green. 1885. A species of *Scindapsus*?
 — *Enderiana*. Leaves dark metallic green. 1885.
 — *flexuosa*. India. 1884.
 — *grandiflora*. A synonym of *Anthurium grandifolium*.
 — *macrophylla*. A synonym of *Anthurium grandifolium*.
 — *nigricans*. Leaves shining blackish green. 1886.
 — *nitens*. Leaves green, shaded with bronzy-purple. Malay Archipelago. 1887.
 — *rubrinervis*. South America. 1820. A synonym of *Anthurium rubrinervis*.
 — *scandens*. May. E. Indies. 1821.

Pothua 'va. (Derivation not given, probably from the native name. Nat. ord., *Bromeliaceæ*.) See **Æchmea**.

P. nudicaulis. Gfl. t. 1096. A synonym of *Æchmea nudicaulis*.

Pot-Marigold. *Calendula officinalis*.

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 fibry 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 more 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, fibry 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 fibry 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.

Drainage.—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. 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.

Immediate 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 irrigations in bright weather should be imparted, accompanied with shading, if necessary. 1. 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'rdia. (Called *Bois de Pourpart*, in the Isle of Bourbon. Nat. ord., *Anacardiaceæ*.) See **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. borbonica. See *Spondias borbonica*.

—*du'lcis.* See *Spondias dulcis*.

—*mangif'era.* 30. White. East Indies. 1820.

A synonym of *Dracontomelum mangiferum*.

Pourou'ma. (A native name. Nat. ord., *Urticaceæ*; Tribe, *Artocarpeæ*.)

Greenhouse evergreen tree. For cultivation, see **ARTOCARPUS**.

P. edulis. Cordilleras of Columbia. 1873.

Pourre'tia. (After *Pierre Andr. Pourret*, a French botanist of the eighteenth century. Nat. ord., *Bromeliaceæ*.)

P. Achapulla. See *Puya Achapulla*.

—*coarcta'ta.* See *Puya coarctata*.

—*frigida.* See *Dyckia frigida*.

—*Joinvi'llei* and *mexica'na.* See *Ruckia Ellemeeti*.

Prairie Clover. *Petalostem'on.*

Prasophy'llum. (From *Prason*, a Leek, and *phyllon*, a leaf; the leaves somewhat resemble those of the Leek. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Diurideæ*.)

Greenhouse, terrestrial orchids, with small flowers of no great beauty.

P. Laufferia'num. Dusky green. Australia. 1888. *Journal de Botanique*, 1888, p. 302.

Pra'tia. (Named after *M. Prat*, a French officer. Nat. ord., *Campanulaceæ*; Tribe, *Lobeliææ*.)

Greenhouse or half-hardy herbaceous 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. White. New Zealand. 1879. Creeping rockwork plant. Syn., *Lobelia littoralis*.

—*areno'sa.* White. September. New Zealand.

—*begonia'folia.* Blue. Summer. Nepaul. 1827.

B. R. t. 1373. Syn., *Lobelia begonia'folia*.

—*corymbo'sa.* White. June. South Africa.

1834. Trailer. Syn., *Isolobus corymbosus*.

—*ere'cta.* 1. Blue. June. Australia. 1819.

—*repens.* White, violet. Summer and autumn.

Falkland Islands. Syns., *Lobelia Pratiana*, and *L. repens*.

Pre'mna. (From *premnon*, the stump of a tree; referring to the habit of these plants. Nat. ord., *Verbena-ceæ*.)

Stove shrubs or trees. Sandy loam, peat and leaf-mould. Seeds or cuttings.

P. esculenta. 8. Yellowish-white. May. East Indies. 1824.

—*integrifolia.* 10. Greenish-white. July. East Indies. 1827. Syns., *P. serratifolia* and *P. spinosa*. Headache Tree.

P. latifolia. 15. White. June. East Indies.

1827.
— *serratifolia*. } See *P. integrifolia*.
— *spinosa* }

Prenanthes. (From *prenes*, drooping, and *anthos*, a flower. Nat. ord., *Compositæ*; Tribe, *Cichoraceæ*.)

P. arborescens and *pinna* are greenhouse shrubs, the rest tall, hardy herbs. Common treatment. See GREENHOUSE.

P. alba. 4. White. Autumn. North America. 1762. B. M. t. 1079.

— *arborescens*. Canary Islands.

— *pinna*. Canary Islands.

— *purpurea*. 4. Purple. August. Central Europe. 1658.

— *virgata*. 4. Lilac. August. North America. 1823.

Preptanthe. (From *preptos*, distinguished, and *anthos*, a flower. Nat. ord., *Orchideæ*; Tribe, *Epidendraceæ-Cœlogyneæ*.) A synonym of **Callanthe**.

Prepussa. (From *prepousa*, comely; the beauty of the flowers. Nat. ord., *Gentianeæ*; Tribe, *Chironiaceæ*. Allied to *Lisianthus*.)

Stove herbaceous perennials. Seeds in a hot-bed, in spring; division of the plant at the same time. Winter temp., 48° to 55°; summer, 60° to 80°.

P. Hookeri. 1. White, crimson. March. Brazil. 1839. B. M. t. 3909.

Prescottia. (Named after John Prescott, a botanist of St. Petersburg. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Spirantheæ*. Allied to *Spiranthes*.)

Stove terrestrial orchid. For cultivation, see ORCHIDS.

P. colorans. 2. Green. Brazil. 1834. B. R. t. 1915.

— *densiflora*. 3. White. Brazil. 1866.

— *plantaginæa*. Greenish-white. Brazil. 1822. B. C. t. 990.

Preslia. (In honour of C. B. and J. S. Presl, of Prague, botanical authors. Nat. ord., *Labiataæ*; Tribe, *Satureineæ*. Allied to *Mentha*.)

Hardy, perennial herb. Ordinary soil. Divisions.

P. cervina. Prostrate. Pale purple. June. Mediterranean region. 1684. Syn., *Mentha punctata*.

Prestoea. (After H. Prestoe, once Director of the Trinidad Botanic Gardens. Nat. ord., *Palmeæ*.)

Dwarf stove palms. For culture, see PHENIX.

P. Carderi. Columbia. 1876. B. M. t. 7108.

Syn., *Geonoma Carderi*.

— *montana*. Tropical America. Syn., *Euterpe montana*.

— *pubigera*. 12. West Indies. Syn., *Hypspathe pubigera*.

Prestonia. (Named after C. Preston, M. D. Nat. ord., *Apocynaceæ*; Tribe, *Echitideæ*. Allied to *Wrightia*.)

Stove evergreen, white-flowered twiners, from South America. Cuttings of half-ripened, stubby side-shoots in sand, under a bell-glass, in heat;

sandy loam, and a little fibry peat or dried leaf-mould. Winter temp., 48° to 58°; summer, 60° to 85°.

P. glabra. 8. July. Quito. 1823.

— *hirsuta*. 10. Yellow, rose. September. Brazil. 1843. Syns., *Echites hirsuta* and *E. hirtella*.

— *tomentosa*. 8. July. Brazil. 1820.

— *venosa*. Yellowish-green. June. St. Vincent. 1821. Syns., *Echites nutans*, B. M. t. 2473, *Hæmadictyon nutans*, and *H. venosum*.

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. *Cyathodes oxycedrus*.

Prickly Pear. *Opuntia*.

Prickwood or Timber. *Eucalyptus europæus* and *Cornus sanguinea*.

Priestleya. (Named after Dr. Priestley. Nat. ord., *Leguminosæ*; Tribe, *Gesticeæ*. Allied to *Liparia*.)

Greenhouse, yellow-flowered, evergreen shrubs, from South Africa, all about three feet high. Cuttings of half-ripened short shoots in sand, under a bell-glass; sandy loam and fibry peat, and thoroughly well-drained, to assist which charcoal and pieces of broken brick or sand-stone may be mixed with the compost. Winter temp., 40° to 48°. Such species as *vestita* should be tried against a wall.

P. axillaris. June. 1822.

— *capitata*. July. 1812.

— *elliptica*. 1825.

— *ericaefolia*. A synonym of *Amphithalia ericaefolia*.

— *graminifolia*. June. 1800.

— *hirsuta*. August. 1792.

— *lævigata*. July. 1820.

— *myrtifolia*. June. 1823.

— *sericea*. June. 1794.

— *teres*. June. 1816.

— *tomentosa*. July. 1812.

— *umbellifera*. July. 1826.

— *vestita*. May. 1800. Syns., *Liparia vestita*, B. M. t. 2223 and *L. villosa*, Andr. Rep. t. 382.

— *villosa*. June. 1774.

Primula. Primrose. (From *primus*, the first; early flowering. Nat. ord., *Primulaceæ*; Tribe, *Primuleæ*.)

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. *Prænitens*, or *sineensis*, and its varieties, 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. A history of the Chinese Primulas will be found in the "Journal of the Royal Horticultural Society," 1891, p. 99.

- P. acapulcensis*. See *P. vulgaris*.
 — *flöre ple'no*. A synonym of *P. vulgaris*, var. *flöre pleno*.
 — *ibérica*. Lilac-rose. Spring. 1885.
 — *admonte'nsis*. Lilac. May. Styrian Alps. 1883. A hybrid. Syns., *P. Churchillii* and *P. Chusiana*, var. *dentata*.
 — *a'lgida*. Purplish. Spring. Siberia.
 — *cuspidens*. Purple. Songaria. 1875.
 — *Allio'ni*. Mauve, white. April. South France.
 — *alp'i'na*. Violet-purple. May. A hybrid. Syns., *P. intermedia* and *P. rhætica*.
 — *alta'ica*. Mauve, yellow. Altai. 1819.
 — *amethy'stina*. Reddish-purple. June. Yunnan, China.
 — *ame'na*. See *P. cortusoides*, var. *Sieboldii*; also *P. elatior*, var. *amæna*.
 — *Arcto'tis*. White or lilac purple. 1886. A hybrid.
 — *Auri'cula*. Varying much in colour. Spring. Alps. 1596. B. M. t. 6837. Syn., *P. Goebélii*.
 — *brevistyl'a*. Purplish. Caucasus. 1875.
 — *calyc'a'ntha*. $\frac{1}{2}$. Yellow. April. Switzerland. 1596.
 — *dolomi'tica*. Lemon-yellow. Tyrol. 1884. Syn., *P. dolomitica*.
 — *hort'e'nsis*. $\frac{1}{2}$. Variegated. April. Europe. 1596.
 — *intege'r'rima*. $\frac{1}{2}$. Variegated. April. Switzerland. 1596.
 — *lu'tea*. $\frac{1}{2}$. Yellow. May. Switzerland. 1596.
 — *lu'tea ple'na*. $\frac{1}{2}$. Yellow. April. Garden origin.
 — *auricu'la'ta*. $\frac{1}{2}$. Purplish, white. June. Austria. 1825. Syn., *P. longifolia*, B. M. t. 392.
 — *Balbi'sii*. Yellow. April. South Europe. 1823. A form of *P. Auricu'la*.
 — *be'lla*. Violet-purple. Summer. Yunnan, China. 1884.
 — *bellu'ne'nsis*. Golden-yellow. May. Alps. A hybrid?
 — *Bern'i'nae*. Rosy-purple. April. Alps. A hybrid.
 — *bisfo'ra*. Deep rose. Spring. Tyrol.
 — *blattari'formis*. 1. Lilac. Yunnan, China. 1887.
 — *Bovea'na*. $\frac{1}{2}$. Yellow. March. Mount Sinai. 1826. Syn., *P. verticillata*, B. M. t. 2842. Abyssinian Primrose.
 — *bractea'ta*. Yellow. March. Yunnan, China.
 — *calyc'a'ntha*. See *P. elatior*, var. *calycantha*.
 — *calyc'i'na*. Purple. May. Alps of Lombardy. 1838. Syn., *P. glaucescens* of Sweet.
 — *Candolle'na*. See *P. integrifolia*.
 — *capita'ta*. Bluish-violet. April. Himalayas. 1850.
 — *carnio'lica*. Blue white. April. Carinthian Alps. Syns., *P. Freyeri*, *P. grandiflora* and *P. Jellenkiana*.
 — *multi'ceps*. Flowers darker. Syn., *P. multi'ceps*.
 — *carpa'tica*. Pale yellow. Alps. 1882.
 — *cashmeria'na*. $\frac{1}{2}$. Purple, with yellow eye. Cashmir. 1879.
 — *ce'nna*. Violet. July. Yunnan, China.
 — *Churchi'llii*. See *P. admontensis*.
 — *clia'ta*. See *P. viscosa*.
 — *Chus'i'na*. Bright rose. April. Tyrol.
 — *denta'ta*. See *P. admontensis*.
 — *Colu'mna*. See *P. suaveolens*.
 — *commuta'ta*. See *P. viscosa*.
 — *confu'sis*. See *P. viscosa*.
 — *cortuso'i'des*. $\frac{1}{2}$. Deep rose. May. Siberia. 1794.
 — *a'iba*. White. Japan. 1865.
 — *Siebo'ldii*. Deep rose. Japan. 1865. Syn., *P. amæna*.
 — *Cou'rtii*. See *P. verticillata*, var. *sinensis*.
- P. crena'ta*. See *P. marginata*.
 — *crida'e'nsis*. Rosy purple. Tyrol. 1884. A hybrid between *P. tyrolensis* and *P. Wulfeniana*.
 — *daone'nsis*. Pale rose, white. May. Swiss Alps. 1854. Syn., *P. cœnensis*.
 — *davi'rica*. Pink, lemon. May. Dahuria. Syn., *P. intermedia*, B. M. t. 1219.
 — *de'cora*. See *P. viscosa*.
 — *Delava'yii*. 1. Deep purple. August. Yunnan, China.
 — *denticu'la'ta*. Bright lilac. Spring. Himalayas. B. M. t. 3959.
 — *a'iba*. White. 1886.
 — *cashmeria'na*. Light purple, yellow. May. Cashmir.
 — *gulche'r'rima*. Deep lilac.
 — *purpu'rea*. $\frac{1}{2}$. Purple. Himalayas. 1873.
 — *varie'ga'ta*. Purple edged with white. 1889.
 — *dentifo'ra*. 1. Red. June. Siberia. 1806.
 — *dige'nea*. Yellow. Alps. A hybrid between *P. elatior* and *P. vulgaris*.
 — *Dinya'na*. Deep purple. Spring. Bavaria. A hybrid.
 — *di'scolor*. Purple. April. Tyrolean Alps. A hybrid.
 — *dolomi'tica*. See *P. Auricu'la*, var. *dolomitica*.
 — *dryadi'folia*. Violet. July. Yunnan, China.
 — *Dumoli'nii*. Deep rose. Spring. Austria. 1877. A hybrid.
 — *ela'tior*. Pale yellow. April. Britain. Eng. Bot. ed. 3, t. 1131. True Oxlip.
 — *ame'na*. Purple. Caucasus. Syn., *P. amæna* of B. M. t. 3252.
 — *calyc'a'ntha*. Calyx large and coloured. Syn., *P. calycantha*.
 — *int'rica'ta*.
 — *e'legans*. See *P. sibirica*, var. *cashmiriana*.
 — *elli'ptica*. $\frac{1}{2}$. Bluish-purple. June. Cashmir.
 — *Elwesia'na*. $\frac{1}{2}$. Dark purple. Sikkim.
 — *ero'sa*. Purple. Spring. Himalayas.
 — *Esche'ri*. Rose purple. April. 1880. A hybrid between *P. Auricu'la* and *P. integrifolia*.
 — *Facchi'nii*. Rosy-purple. May. Tyrol. A hybrid between *P. minima* and *P. spectabilis*.
 — *farino'sa*. Pale purple, yellow. Northern Europe. Eng. Bot. ed. 3, t. 1134.
 — *Fedtsche'nkoi*. $\frac{1}{2}$. Deep violet-purple. Summer. Turkestan. 1884.
 — *finna'r'chica*. $\frac{1}{2}$. Violet. May. Norway. 1798. Syn., *P. norvegica*.
 — *Flörke'na*. $\frac{1}{2}$. Lilac-purple. Spring. Switzerland. Syn., *P. minima*, var. *hybrida*. A hybrid.
 — *floribu'nda*. Yellow. Western Himalayas. 1883. B. M. t. 6712.
 — *Forbe'sii*. Pale lilac. November. Yunnan, China. 1891.
 — *Forste'ri*. Deep rose, white. Tyrol. 1880. A hybrid.
 — *Freye'ri*. See *P. carnio'lica*.
 — *Gambelia'na*. Purple. Himalayas. 1884.
 — *gerani'ifolia*. Pale purple. May. Eastern Himalayas. 1887. B. M. t. 6984.
 — *giga'n'tea*. $\frac{1}{2}$. Red. June. Siberia. 1820.
 — *glacia'lis*. Violet. June. Yunnan, China.
 — *glauce'scens*. See *P. calycina*.
 — *glutino'sa*. $\frac{1}{2}$. Bluish-purple. May. South Europe. 1824.
 — *Goebé'lii*. See *P. Auricu'la*.
 — *grandifo'ra*. See *P. carnio'lica*.
 — *gra'ndis*. $\frac{1}{2}$. Yellow. Central Asia. 1878.
 — *He'e'rii*. Purple. April. A hybrid between *P. viscosa*, var. *hirsuta*, and *P. integrifolia*.
 — *helve'tica*. 1. Red. June. Switzerland.
 — *a'iba*. $\frac{1}{2}$. White. May.
 — *hirsu'ta*. See *P. viscosa*, var. *hirsuta*.

- P. Hornemannia* n. See *P. stricta*.
 — *Huguemii* n. †. Deep purple. April. A hybrid between *P. glutinosa* and *P. integrifolia*.
 — *hu'niis*. See *P. pusilla*.
 — *Hule'ri*. Deep violet. May. Tyrol. A hybrid between *P. Flörkeana* and *P. glutinosa*.
 — *imperia'lis*. †. Yellow. Java. 1890.
 — *infla'ta*. †. Yellow. May. Hungary. 1825.
 — *integrifo'lia*. †. Rose. Spring. Pyrenees. 1792. B. M. t. 942. Syn., *P. Candolleana*.
 — *interme'dia*. See *P. alpina*.
 — *involuta'ra*. †. Cream, yellow. Spring. North India. 1845.
 — — *Mu'nroi*. White, yellow. March. North India. 1845. Syn., *P. Munroi*.
 — *Jæschkia'na*. See *P. Stuartii*, var. *purpurea*.
 — *japo'nica*. †. Crimson to white. Japan. 1871. B. M. t. 5916. Japanese Primrose.
 — *Jellenkia'na*. See *P. carniolica*.
 — *Kaufmannia'na*. †-1. Violet. Summer. Turkestan. 1883.
 — *Kerne'ri*. †. Reddish-violet. April. Styria. A hybrid between *P. Auricula* and *P. villosa*.
 — *Kitabelia'na*. See *P. spectabilis*, var. *Kitabeliana*.
 — *latifo'lia*. See *P. viscosa*, var. *latifolia*.
 — *Leblia'na*. Rose-purple. April. 1880. A hybrid between *P. Auricula* and *P. Wulfeniana*.
 — *longifo'ra*. Purple. May. Alps.
 — *longifo'lia*. B. M. t. 392. See *P. auriculata*.
 — *longoba'rda*. Rose-purple. April. Lombardy.
 — *longisca'pa*. Lilac. April. Altai. 1837.
 — *lute'ola*. †. Pale yellow. Summer. Caucasus. 1867.
 — *margina'ta*. †. Violet-rose. April. Switzerland. 1777. B. M. t. 191. Syn., *P. crenata*.
 — — *ma'jor*. Larger than the type and with darker flowers.
 — *magiasso'nica*. Rosy-purple. May. 1880. A hybrid between *P. spectabilis* and *P. minima*.
 — *microca'lya*. Red. May. Altai. 1838.
 — *mi'nima*. One-twelfth. Rose to white. Summer. South Europe. 1819. B. E. t. 581.
 — — *hy'bri'da*. See *P. Flörkeana*.
 — — *pub'e'scens*. See *P. Stuartii*.
 — *minuti'ssima*. Bright purple. June. Himalayas.
 — *mistassi'nica*. †. Red. June. North America. 1818. B. M. t. 2973. Syn., *P. pusilla*. B. M. t. 3020.
 — *mo'llis*. Deep rose. May. Bhotan. 1854. B. M. t. 4798.
 — *multiceps*. See *P. carniolica*, var. *multiceps*.
 — *Munro'i*. B. R. 1847, t. 15. See *P. involu-crata*, var. *Munroi*.
 — *muretia'na*. Deep purple. April. Alps. A hybrid between *P. integrifolia* and *P. viscosa*.
 — *musco'des*. Purple. Sikkim. 1884. There is a variety *tenutiloba*.
 — *Nelsoni*. See *P. viscosa*, var. *Nelsoni*.
 — *niva'lis*. †. Pure white. Spring. Caucasus. 1790. See also *P. pubescens*, var. *alba*.
 — — *farino'sa*. Leaves nearly beneath. Central Asia. 1878.
 — — *longifo'lia*. Deep violet. Central Asia. 1878. Gf. t. 930.
 — — *turkesta'nica*. †. Rose. Turkestan. 1878. Gf. t. 930.
 — *ni'va*. See *P. pubescens*, var. *alba*.
 — *norve'gica*. See *P. jinmarchica*.
 — *P. obco'nica*. †-1. Lilac. Central China. 1882. Garden, Sept. 6, 1884. Syn., *P. poculiformis*. B. M. t. 6582.
 — *obova'ta*. Pale rose. April. Valmenon. A hybrid between *P. tyrolensis* and *P. Balbristii*.
 — *obri'stii*. Purple. A hybrid between *P. Balbristii* and *P. Auricula*.
 — *obtusifo'lia*. †. Very deep crimson. May. Himalayas. 1887. B. M. t. 6956.
 — *œne'nis*. See *P. daonensis*.
 — *officina'lis*. †-1. Yellow. Britain. Eng. Bot. ed. 3, t. 1130. Cowslip.
 — — *ela'tior du'plex*. Calyx petaloid.
 — — *macroca'lya*. Calyx large, leafy.
 — *O'lgæ*. †. Rosy-lilac. Spring. Turkestan. 1887.
 — *Palinu'ri*. †. Bright yellow. April. South Italy. 1816. B. M. t. 3414.
 — *Palla'sii*. †. Yellow. June. Altai. 1823.
 — *pa'llida*. See *P. viscosa*, var. *hirsuta*.
 — *Pa'rnyi*. †. Bright purple, yellow. Spring. Rocky Mountains. 1865. B. M. t. 6185.
 — *pedemonta'na*. See *P. viscosa*, var. *pedemontana*.
 — *Perrinia'na*. †. Yellow. June. Spain.
 — *petiola'ris na'na*. Lilac-purple, white, yellow. Himalayas. 1889. B. M. t. 7079 b.
 — *Peyri'tschii*. Purple. Alps. Syn., *P. viscosa*, var. *ma'jor*. A hybrid between *P. Auricula* and *P. viscosa*.
 — *pinnati'fida*. Violet. July. Yunnan, China.
 — *Pla'ntæ*. Rosy-purple. April. 1880. A hybrid between *P. viscosa*, var. *hirsuta* and *P. daonensis*.
 — *poculiformis*. B. M. t. 6582. See *P. obco'nica*.
 — *Poisso'ni*. †. Rich purple. Yunnan, China. 1839.
 — *Por'tæ*. Red. April. Tyrol. 1873. A hybrid between *P. Auricula* and *P. daonensis*.
 — *præni'tens*. See *P. sinensis*.
 — *proli'fera*. †-2. Yellow. Himalayas. 1884. B. M. t. 6732.
 — *pub'e'scens*. †. Rosy crimson. April. South Europe. 1800. A hybrid.
 — — *al'ba*. †. White. Spring. Caucasus. 1790. Syns., *P. nivalis* of some gardens and *P. nivea*.
 — *pu'lehra*. Purple. Sikkim. 1884.
 — *pu'mila*. One-twelfth. Rosy-purple. April. Tyrol. A hybrid between *P. minima* and *P. daonensis*.
 — *purpi'rea*. See *P. Stuartii*.
 — *pusi'ta*. Violet-purple. Spring. Himalayas. Syn., *P. humilis*, *P. pusilla* of B. M. t. 3020 is *P. mistassinica*.
 — *Ree'dii*. Pure white. May. Sikkim. 1886. B. M. t. 6961.
 — *reticula'ta*. †-1. Yellow. May. Himalayas.
 — *rhœ'tica*. See *P. alpina*.
 — *ro'sea*. †. Rosy-carmine, yellow. Spring. Cashmir. 1879. B. M. t. 6437.
 — *rotundifo'lia*. †. Purple, yellow. June. Himalayas.
 — *Ru'sbyi*. †. Deep purple, yellow. Spring. New Mexico. 1881.
 — *salisburyhe'nsis*. Reddish-purple. April. A hybrid between *P. glutinosa* and *P. minima*.
 — *sapphi'ri'na*. †. Pale blue. Sikkim. 1884. B. M. t. 6961 A.
 — *sc'o'tica*. †. Purple, yellow. June. Scotland. Eng. Bot. ed. 2, t. 1135.
 — *secundifo'ra*. Violet. July. Yunnan, China.
 — *septemlo'ba*. Purple. July. Yunnan, China.
 — *seratifo'lia*. Golden-yellow. June. Yunnan, China. The same name has been given

- to a hybrid between *P. minima* and *P. Wulfeniana*.
- P. sibirica*. †. Red. May. Siberia. 1818. B. M. t. 3167.
- *cashmeriana*. †. Rosy-lilac. June. Western Himalayas. 1879. B. M. t. 6483. Syn., *P. elegans*.
- *integerrima*. Leaves not dentate. B. M. t. 3445.
- *Sieboldii*. See *P. cortusoides*, var. *Sieboldii*.
- *sikkime'nsis*. †. Pale yellow. Summer. Sikkim. 1850. B. M. t. 4597.
- *si'milis*. Purple. April. Styria. A hybrid between *P. Balbisti* and *P. Auricula*.
- *Si'moi*. See *P. villosa*, var. *fore albo*.
- *sine'nsis*. †. White or lilac. Spring. China. B. M. t. 2564. Syn., *P. pœnitens*. There are numerous varieties of this, such as:—*fimbriata alba*, *fimbriata rosea*, *fore albo*, *ple'na alba*, *ple'na rosea*, etc.
- *soldanelloides*. White. Sikkim. 1884.
- *sonchifolia*. Violet. June. China.
- *spectabilis*. †. Rosy-purple. July. Eastern Alps. 1879.
- *Kitabeliana*. Rosy-purple. April. Croatia. Syn., *P. Kitabeliana*.
- *Wulfeniana*. See *P. Wulfeniana*.
- *spicata*. Violet. June. Yunnan. China. 1884.
- *Ste'ni*. Bright purple. April. 1878. Gf. t. 991, figs. 1-3. A hybrid between *P. minima* and *P. viscosa*, var. *hirsuta*.
- *stri'cta*. †. Pink. April. Denmark. 1822. Syn., *P. Hornemanniana*.
- *Stu'rtii*. †. Golden-yellow. Summer. North India. 1845. B. M. t. 4356.
- *purpurea*. Purple. Summer. Himalayas. Syn., *P. Jeschkiiana*.
- *Stu'rtii*. Rose-purple. April. 1856. Syn., *P. minima*, var. *pubescens*. A hybrid between *P. minima* and *P. viscosa*.
- *suave'olens*. †. Yellow. April. Italy. 1824. Syn., *P. Columnæ*.
- *suffrutescens*. Rosy-purple. yellow. Spring. California. 1884.
- *tene'lla*. †. Pale blue. Thibet. 1884.
- *tenuilo'ba*. A variety of *P. muscoides*.
- *trunca'ta*. †. Purple. April. South Europe.
- *tyrole'nsis*. See *P. Allionii*.
- *unifo'ra*. Pale lilac. Sikkim. 1884.
- *varia'bilis*. †. Yellow. April. Britain. A hybrid between *P. officinalis* and *P. vulgaris*. False Oxlip.
- *venu'sta*. †. Purple. Hungary. 1833. B. R. t. 1983.
- *Venzo'i*. Pale purple. April. Tyrol. A hybrid.
- *ve'ris*. See *P. officinalis*.
- *verticilla'ta*. B. M. t. 2842. See *P. Bo'veana*.
- *sine'nsis*. †. Yellow. Spring. Abyssinia. 1870. B. M. t. 6042. Syn., *P. Courtii*.
- *villo'sa*. Purple. Alps.
- *vincifo'ra*. Violet-purple. Yunnan, China. G. C. 1887, i. p. 575, fig. 108.
- *visco'sa*. †. Rosy-purple, white. May. Pyrenees. 1768. B. M. t. 14.
- *villosa*. Larger than the type.
- *commuta'ta*. Bright rose. May. Alps.
- *conf'nis*. Deep rose. May. Alps.
- *hirsu'ta*. Pale lilac. Spring. Switzerland.
- *latifo'lia*. †. Violet. Pyrenees. 1820.
- *ma'jor*. See *P. Peyritschii*.
- *Nelso'ni*. Pale purple. April.
- *pedemonta'na*. †. Rosy-purple. Piedmont. 1820. B. M. t. 5794.
- *vulgaris*. †. Pale yellow. Spring. Britain. Eng. Bot. ed. 3, t. 1129. Syn., *P. acaulis*. Common Primrose.
- P. vulgari's alba*. †. White. April. Britain.
- *ple'na alba*. †. White. April. Britain.
- *ple'na atro-purpurea*. †. Purple. April. Britain.
- *ple'na ca'rnea*. †. Flesh. April. Britain.
- *ple'na cu'prea*. †. Copper. April. Britain.
- *ple'na ru'bra*. †. Red. April. Britain.
- *ple'na sulphu'rea*. †. Pale yellow. April. Britain.
- *ple'na viola'cea*. †. Violet. April. Britain.
- *poly'ntha*.
- *Wulfeniana*. Violet-purple. April. Alps. Syn., *P. spectabilis*, var. *Wulfeniana*.
- *yunnane'nsis*. Violet-purple. July. China.

Primu'la. (From its resemblance to *Primula*. Nat. ord., *Gesneraceæ*.)

Half-hardy perennial, alpine plant with the habit of a *Primula* and odour of tobacco. In China it is known as Shek-in or Rock Tobacco.

P. Tabacum. †. Violet-purple. China. 1889. G. C. 1889, vi. p. 356, fig. 52. Syn., *P. sinensis*, B. M. t. 7117.

Pri'nos. Winter Berry. (The ancient name of the Holly, which some of the species resemble. Nat. ord., *Ilicineæ*.) See *Ilex*.

All hardy and deciduous, except *hu'cidus* (which is a hardy evergreen), and *montanus*, which is a stove-evergreen. All white-flowered. Hardy kinds, seeds and layers; stove kinds, by cuttings of firm shoots in sand, under a bell-glass; sandy loam and peat.

- P. ambiguus*. See *Ilex ambigua*.
- *atoma'rius*. } See *Ilex lucida*.
- *coria'ceus*. }
- *deciduus*. See *Ilex decidua*.
- *du'bus*. See *Ilex mollis*.
- *gl'aber*. Wats. Dendr. t. 27. See *Ilex glabra*.
- *lœvigata*. See *Ilex lœvigata*.
- *lanco'latus*. See *Ilex lanceolata*.
- *hu'cidus*. See *Ilex lucida*.
- *montanus*. See *Ilex montana*.
- *verticilla'tus*. See *Ilex verticillata*.

Prio'nium. (From *prionion*, a small saw; alluding to the serrated leaves. Nat. ord., *Juncaceæ*; Tribe, *Eryunjeæ*.)

This remarkable rush is found in S. Africa, not only in swampy places, but on the banks of rivers, which it helps to choke up. Very strong fibres, suitable for brushmaking, are obtained from the old leaf-stalks.

P. Palmi'ta. 6. Brownish. S. Africa. 1857. B. M. t. 5722.

Prismatocarpus. (From *prisma*, *prismata*, a prism, and *karpus*, fruit; the fruits are long and angular. Nat. ord., *Campanulaceæ*; Tribe, *Campanuleæ*.)

Greenhouse perennial herbs. For culture, see *CAMPANULA*.

- P. falca'tus*. See *Specularia falcata*.
- *hirsu'tus*. See *Specularia Speculum*, var. *pubescens*.
- *hy'bridus*. See *Specularia hybrida*.
- *ni'tidus*. †-1. White. August. South Africa. 1857. Syn., *Campanula Prismatocarpus*. B. M. t. 2733.
- *penta'gonius*. See *Specularia pentagonia*.
- *perfolia'tus*. See *Specularia perfoliata*.

Pritchardia. (In honour of *W. T.*

Pritchard, the author of "Polynesian Reminiscences." Nat. ord., *Palmææ*; Tribe, *Coryphecæ*.)

Very ornamental stove palms with large fan-shaped leaves. Sandy loam, peat, and rotten leaves. Seeds. Summer temp., 80° to 90°; winter, 65° to 70°.

- P. filifera*. See *Washingtonia filifera*.
 — *Gaudichaudia na*. Sandwich Islands.
 — *gravidis*. See *Licuala grandis* and *L. Veitchii*.
 — *macrocarpa*. Sandwich Islands. 1879. Ill. Hort. t. 352.
 — *Martii*. Sandwich Islands.
 — *pacifica*. Polynesia. 1870. Fl. Ser. tt. 2262-3.
 — *pericula rum*. Pomoton Islands. 1883.
 — *Thurstoni*. Fiji. 1887. Gf. 1887, p. 486, figs. 123-4.
 — *Vuyistekiana*. Pomoton Islands. 1883. G. C. 1883, xix. p. 692, fig. 114. Rev. Hort. 1883, p. 329, fig. 59.

Pri'ya. (Derivation not stated. Nat. ord., *Verbenacæ*; Tribe, *Verbenacæ*.)

Greenhouse herb. Compost of sandy loam and leaf-mould. Seeds.

- P. lævis*. 1½. Rosy-lilac. Summer. Chili and Argentine Republic. 1883. Gf. t. 1131.

Privet. *Ligustrum vulgare*.

Privet, Mock. *Phillyrea*.

Pro'ckia. (Probably a commemorative name. Nat. ord., *Tiliacæ*; Tribe, *Prockiacæ*.)

Stove, yellow-flowered, evergreen shrubs. Cuttings of half-ripened shoots in sand, under a glass, in heat; sandy, fibry loam, and a little fibry peat. Winter temp., 55° to 60°; summer, 60° to 85°.

- P. crucis*. 4. July. W. Indies. 1822. B. R. t. 972.
 — *serrata*. 6. July. Montserrat. 1823.
 — *theaeformis*. 6. July. Bourbon. 1820.

Proliferous. See **Double Flowerer.** The term is also applied to plants producing many suckers.

Promenæ'a. (Derivation uncertain. Nat. ord., *Orchideæ*; Tribe, *Vandæo-Cyrtopodiææ*.) Now regarded as a section of **Zygopetalum**.

- P. citrina*. See *Zygopetalum citrinum*.
 — *graminea*. See *Aqanista graminea*.
 — *lentiginosa*. See *Zygopetalum lentiginosum*.
 — *microptera*. See *Zygopetalum micropterum*.
 — *Rollissonii*. See *Zygopetalum Rollissonii*.
 — *stapeloides*, with its varieties *nigra* and *rubra*. See *Zygopetalum stapeloides*.
 — *xanthina*. See *Zygopetalum xanthinum*.

Prona'ya. (Named after *M. Pronay*, a French naturalist. Nat. ord., *Pittosporacæ*. 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. elegans*. 4. Blue. August. Australia. 1837. Syn., *Spiranthera Fraseri*.

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 al-

ways be as slight as is consistent with efficiency. Nothing looks worse than a disproportioned prop or stake; 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 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 that receiving most light.

The fewest possible number of props is one of the evidences of good cultivation and good taste.

Proserpina'ca. Mermaid Weed. (From *proserpo*, to creep; referring to the habit of the stems. Nat. ord., *Haloragacæ*.)

Half-hardy aquatic herbs. May be grown in ponds, or in pans of water with a little soil at the bottom.

- P. patris*. White. Summer. Canada. 1818.
 — *pectinata*. White. Summer. North America. 1821.

Proso'pis. (A name of a plant employed by Dioscorides. Nat. ord., *Leguminosæ*; Tribe, *Adenanthereæ*. Allied to *Neptunia*.)

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 fibry peat. Winter temp., 45° to 55°, and rather dry; summer, 60° to 85°, and plenty of moisture at root and top. *Siliquastrum* stood several years against a wall in the Horticultural Society's Gardens. *P. cumane'nsis*, *domingensis*, *du'lcis*, *ho'rrida*, and *siliquastrum* are sometimes regarded as varieties of *P. juliflora*.

- P. cumane'nsis*. 20. White, green. Cumana. 1822.
 — *domingensis*. 30. Yellow, green. St. Domingo. 1818.
 — *du'lcis*. 20. White, green. New Spain. 1818.
 — *ho'rrida*. 30. Yellow. Jamaica. 1800.
 — *juliflora*. 30. White. S. America. 1826.
 — *siliquastrum*. 30. White. Chili. 1827.

Prostanthe'ra. (From *prostheke*, appendage, and *anthera*, anther; connectives of the anthers are spurred. Nat. ord., *Labiataæ*; Tribe, *Prostanthereæ*.)

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°. *Lasianthos* stood some years against a wall in the Gardens of the Horticultural Society.

- P. cœru'lea*. 3. Blue. May. Australia. 1824.
 — *cunea'ta*. 2. White. June. Tasmania.
 — *denticula'ta*. 4. July. Australia. 1824.
 — *empetrifo'lia*. 2. Violet. September. Australia. 1829. Syn., *Chilodia scutellarioides*. B. M. t. 3405.
 — *lasia'nthos*. 3. Purple. lilac. June. Australia. 1808. B. M. t. 2431.
 — *ni'væa*. Grey. N. S. Wales. 1867.
 — *prunelloi'des*. Purple. April. Australia. 1826.
 — *rotundifo'lia*. 3. Purple. July. Australia. 1824.
 — *viola'cea*. 5. Violet. June. Australia. 1820. B. R. t. 1072.

Pro'tea. (From *Proteus*, a sea-god, who could transform himself into any shape; referring to the diversity of the species. Nat. ord., *Proteaceæ*; Tribe, *Protea*.)

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; fibry 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. acaw'lis*. 1½. Purple. July. 1802. B. M. t. 2065.
 — *acero'sa*. Purple. March. 1803. B. R. t. 351. Syn., *P. virgata*.
 — *acumina'ta*. 3. Purple. May. 1809. B. M. t. 1694.
 — *amplexica'u'lis*. 1½. Purple. February. 1802. Syn., *P. repens*. Andr. Rep. t. 453.
 — *angusta'ta*. 1. Purple. June. 1820.
 — *cœspito'sa*. Andr. Rep. t. 526. See *P. turbiniflora*.
 — *canalicula'ta*. 3. Pink. July. 1800. Andr. Rep. t. 437.
 — *cocci'nea*. 5. Scarlet. June. 1824.
 — *corda'ta*. 1½. Purple. April. 1790. Andr. Rep. t. 289. Syn., *P. cordifolia*. B. M. t. 649.
 — *corona'ta*. Andr. Rep. t. 469. See *P. formosa*.
 — *cynaroi'des*. 1½. Purple. August. 1774. B. M. t. 770.
 — *elonga'ta*. 4½. Purple. July. 1820.
 — *formo'sa*. 6. Red. May. 1789. Andr. Rep. t. 17. Syn., *P. coronata*.
 — *grandifo'ra*. 8. White. May. 1787. Andr. Rep. t. 301.
 — — *angustifo'lia*. Narrow-leaved. B. R. t. 569.
 — — *marginata*. 6. White. June. 1795.
 — *hirsu'ta*. 4. Pale. June. 1819.
 — *hu'milis*. Purple. Syn., *P. humiflora*. Andr. Rep. t. 532.
 — *lœ'vis*. Greenish. May. B. M. t. 2439.
 — *latifo'lia*. 7. Purple. August. 1806. B. M. t. 1717. Syn., *P. radiata*. Andr. Rep. t. 646.
 — — *cocci'nea*. 5. Scarlet. August. 1806.
 — — *viridifo'ra*. 7. Green. August. 1806.
 — *lepidocœ'rpon*. 6. Purple. May. 1806. B. M. t. 674.
 — *ligula'fo'lia*. 7. Purple. April. 1798.
 — *longifo'ra*. 8. Yellowish-white. November. 1809. B. M. t. 2720.

- P. longifo'lia*. 2. Purple. May. 1798. Andr. Rep. t. 132, 133, 134.
 — *macrophy'lia*. 8. White. May. 1824.
 — *magni'fica*. 6. White. April. 1789.
 — *melaleu'ca*. 6. Purple. May. 1786.
 — *melli'fera*. 6. Pale yellow. September. 1774. B. M. t. 346.
 — — *a'liba*. 6. White. September. 1795.
 — *mucronifo'lia*. 3. White. September. 1803. B. M. t. 933.
 — *na'na*. 2. Crimson. May. 1787. B. M. t. 7095.
 — *nerifo'lia*. 6. White. March. 1806. B. R. t. 208.
 — *obtu'sa*. 10. Red. March. 1786.
 — *pulche'ra*. 3. Red. June. 1795. B. M. t. 796. Andr. Rep. t. 270. B. R. t. 20.
 — — *cilia'ta*. 3. Red. June. 1795.
 — — *glabra*. 3. Red. June. 1795.
 — — *specio'sa*. 3. Red. June. 1795.
 — *radia'ta*. Andr. Rep. t. 646. See *P. latifolia*.
 — *repens*. Andr. Rep. t. 453. See *P. amplexicaulis*.
 — *revolu'ta*. 1½. Purple. May. 1824.
 — *Scotlymus*. Greenish. July. 1780. B. M. t. 698.
 — *specio'sa*. 2. Purple. April. 1786. Andr. Rep. t. 103, 104, 277, 438, and 543.
 — *turbinifo'ra*. ½. Pink. April. 1803. Syn., *P. cœspitosa*. Andr. Rep. t. 526.
 — *villi'fera*. 7. Purple. August. 1800. B. R. t. 1023.
 — *virga'ta*. Andr. Rep. t. 577. See *P. acerosa*.

EXCLUDED SPECIES.

- P. anemonifo'lia*, B. M. t. 697 = *Isopogon anemonifolius*.
 — *argenti'folia*, Andr. Rep. t. 447 = *Serruria triternata*.
 — *ca'ndicans*, Andr. Rep. t. 294 = *Leucospermum tomentosum*, var. *candicans*.
 — *conf'era*, Andr. Rep. t. 541 = *Leucadendron strictum*.
 — *corymbo'sa*, Andr. Rep. t. 495 = *Leucadendron corymbosum*.
 — *decu'mbens*, Andr. Rep. t. 349 = *Serruria Niveni*.
 — *divarica'ta*, Andr. Rep. t. 465 = *Isopogon anethifolius*.
 — *globo'sa*, Andr. Rep. t. 307 = *Leucadendron concolor*.
 — *glomera'ta*, Andr. Rep. t. 264 = *Serruria pedunculata*.
 — *imbrica'ta*, Andr. Rep. t. 517 = *Leucadendron buxifolium*.
 — *inci'ra*, Andr. Rep. t. 431 = *Leucadendron œmulum*.
 — *la'gopus*, Andr. Rep. t. 243 = *Nivenia crithmifolia*.
 — *pini'folia*, Andr. Rep. t. 76 = *Aulax pini'folia*.
 — *pinna'ta*, Andr. Rep. t. 512 = *Serruria pinna'ta*.
 — *sati'gna*, Andr. Rep. t. 572 = *Leucadendron floridulum*.
 — *spica'ta*, Andr. Rep. t. 234 = *Nivenia media*.
 — *stella'ris*, B. M. t. 881 = *Leucadendron stellare*.
 — *teretifo'ra*, Andr. Rep. t. 461 = *Leucadendron abietinum*.
 — *triterna'ta*, Andr. Rep. t. 337 = *Serruria triplicato-ternata*.
 — *umbella'ta*, Andr. Rep. t. 248 = *Aulax umbellata*.

Protection. See **Screens.**

Proteinophallus. See **Amorphophallus.**

Prou'stia. (In honour of *M. Proust*. Nat. ord., *Compositæ*; Tribe, *Mutisia-cææ*.)

Greenhouse climber. For cultivation, see MUTISIA.

P. pyrifo'lia. White. Chili. 1865. Fruit-pappus rosy, and very beautiful. B. M. t. 5489.

Prumno'pitys. (From *prumnos*, the last, and *pitys*, a pine. Nat. ord., *Coniferae*; Tribe, *Podocarpeæ*. Allied to *Podocarpus*.)

Hardy evergreen.

P. e'legans. 40. Valdivia. 1863. Fruit eatable while green.

Prune'lla. Self-Heal. (Altered from the German *Die breavne*, a disease of the jaws; supposed medicinal qualities. Nat. ord., *Labiatae*; Tribe, *Stachydeæ*.)

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. grandiflo'ra. $\frac{1}{2}$. Blue. August. Austria. 1596. B. M. t. 337.

— *hi'spida*. See *P. vulgaris*, var. *hi'spida*.

— *hysopifo'lia*. $\frac{1}{2}$. Purplish. August. Mediterranean region. 1731.

— *inci'sa*. See *P. vulgaris*, var. *pinnatifida*.

— *Marrya'ttae*. $\frac{1}{2}$. Purple. July.

— *ova'ta*. $\frac{1}{2}$. Purple. July. America.

— *pennsylvanica*. See *P. vulgaris*, var. *elongata*.

— *vulgaris*. $\frac{1}{2}$. Pink. July. Britain. Eng. Bot. ed. 3, t. 1059. Syns., *P. latifolia* and *P. Novæ Angliæ*.

— — *elonga'ta*. Violet. July. N. Amer. Syn., *P. pennsylvanica*.

— — *flo're-ple'no*. $\frac{1}{2}$. Pink. July. Britain.

— — *hi'spida*. Pale purple. July. Europe.

Syn., *P. hi'spida*.

— — *pinnati'fida*. Purple. July. South Europe.

Syn., *P. inci'sa*.

— — *ru'bra*. $\frac{1}{2}$. Red. July. Britain.

— *Webbia'na*. l. Lilac. August.

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 and 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 growth 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 one 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 half an inch to one or two 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 increases 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 luxuriance, 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 unnailed or loosen a chief part of the branches, particularly of peaches, nectarines, apricots, vines, and other trees requiring an annual supply of young wood.

Pru'nus. Plum. (From *prune*, a plum. Nat. ord., *Rosaceæ*; Tribe, *Pruneeæ*.)

Hardy deciduous trees, white or red 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.

P. alleghaniensis. United States. G. and F. 1890, p. 429, fig. 53.

— *america* na. 20. White. April. North America. Syn., *P. nigra*. B. M. t. 1117.

— *Armeniaca*. 15. White. April. Levant. 1548. Fl. Ser. t. 418. Syn., *Armeniaca vulgaris*. Apricot.

— *cordifolia*. White. March. Levant. 1548.

— *floré ple'no*. 15. White. April.

— *foliis variegatis*. 15. White. April.

— *ovalifolia*. 15. White. March. Levant. 1548.

— *baldschuanica*. Red. Buchara. 1890. Dwarf tree.

— *biferum*. White. April. 1875. The flowers and fruit of this are on the tree at the same time.

— *borealis*. White. Canada. B. C. t. 1598.

— *brigantia*cca. 6. Pink. March. South of Europe. 1819. Syn., *Armeniaca brigantia*cca.

— *ca'ndicans*. 15. 1820. B. R. t. 1135.

— *ca'puli*. White. Mexico. Rev. Hort. 1888, p. 137, fig. 30.

— *cerasi'fera*. White. Native country unknown. B. M. t. 5934. Cherry Plum, Myrobalan Plum.

— *Cerasus Bigare'lla*. A synonym of *Cerasus duracina*.

— *Chaprou'ni*. Fruit red, with white dots. Roumania. Rev. Hort. 1881, p. 467, fig. 114.

— *coccinifolia*. 20. White. Calabria. 1824.

- P. dasyca'rpa*. 15. White. March. China. 1800. B. R. t. 1243. Syn., *Armeniaca dasycarpa*.
- *Davidia* na. Rose. China. 1871. Syns., *Armeniaca Davidiana* and *Prunus Davidiana*.
- — *alba*. White. China. 1872.
- *depressa*. B. C. t. 1607. See *P. pumila*.
- *divaricata*. 10. Caucasus. 1820. B. M. t. 6519. Syn., *P. myrobalana*.
- *dome'stica*. 20. England. Eng. Bot. ed. 3, t. 410. Plum.
- — *armentoi'des*. 20.
- — *flo're-ple'no*. 20.
- — *fo'liis variega'tis*. 20.
- — *heterophylla*. 20. 1846.
- — *pe'ndula*. 1838.
- — *Plantie'rii*. White. 1885. Garden variety.
- — *turone'nsis*. 20. Turin.
- *hybrida re'ptans*. Red. 1886. Garden hybrid. Rev. Hort. 1886, p. 416.
- — *stri'cta*. White. 1886. Garden hybrid. Rev. Hort. 1886, p. 416.
- *ilicifo'lia*. White. California. Syn., *Cerasus ilicifolia*.
- *inasti'tia*. 20. Britain. Eng. Bot. ed. 3, t. 409. Black Bullace.
- — *flo're-ple'no*. 20.
- — *fru'ctu lu'tea a'la*. 20.
- — *fru'ctu ni'gro*. 20.
- — *fru'ctu ru'bro*. 20.
- *Jacquemo'ntii*. 10. Pink. May. North-West Himalayas. 1886. B. M. t. 6976.
- *japo'nica*. White. Spring. China. 1869. B. R. t. 27 and 1801. Syn., *P. sinensis*.
- — *spha'rica*. Fruit globose, dark red. Garden variety. 1887. Rev. Hort. 1890, p. 468, fig. 136.
- *Julia'na*. See *Cerasus Juliana*.
- — *pe'ndula*. Branches pendulous. Garden variety. 1889.
- *lae'vis*. See *Persica vulgaris*, var. *laevis*.
- *Lannesia'dna*. Rose. Japan. 1872. Syn., *Cerasus Lannesiana*.
- *Lauroce'rasus*. A synonym of *Cerasus Laurocerasus*, to which the following varieties should be added.
- — *cauca'sica*.
- — *latifo'lia*. 1870. Syn., *Cerasus Laurocerasus latifolia*.—The Versailles Laurel.
- — *Otti'ni*. Leaves large. 1877. Syn., *Laurocerasus Ottini*.
- — *schipkae'nsis*. Balkan Mountains. 1889.
- — *lu'cida*. White. Asia Minor.
- *lusita'nica azo'rica*. An Azores variety of the Portugal laurel, with larger leaves and flowers. 1866. This should be added to *Cerasus lusitanica*.
- *mar'i'tima*. 3. White. April. North America. 1800. Beach Plum. Syn., *P. pubescens*.
- *Mauve'ri*. Garden variety. 1888.
- *Miquelid'na*. Pale pink. G. and F. 1888, pp. 196, 199, fig. 37. Some doubt exists as to whether this is the true species.
- *Mu'me*. 2. White. Japan. 1841.
- — *Alpha'ndi*. Rose-pink; semidouble. Japan. 1885. Rev. Hort. 1885, p. 564, figs. 101-103. Syn., *Armeniaca Mume*, var. *Alphandi*.
- — *myrobala'na*. See *P. divaricata*.
- — *ni'gra*. B. M. t. 1117. See *P. americana*.
- — *Pa'dus*. See *Cerasus Padus*.
- — *pancula'ta*. B. R. t. 800. A synonym of *Cerasus pseudocerasus*.
- *Pattonia'dna*. White. N. W. America. 1872.
- *pe'ndula ro'sea*. Pink. Japan. 1871. Syn., *Cerasus pendula rosea*.
- *Persica*. See *Persica vulgaris*.
- *Pissa'rdi*. White. March. Persia. Rev. Hort. 1881, p. 190.
- *pube'scens*. See *P. maritima*.

- P. Pu'ddum*. See *Cerasus pseudocerasus*. *C. Sieboldii* and *C. Sieboldii rosea plena* are beautiful rose-coloured varieties. Japan. 1861.
- *pu'mila*. 4. White. May. South Europe. 1805. Syns. *P. depressa* and *Cerasus depressa*.
- *ru'bra*. See *Cerasus Padus*, var. *rubra*.
- *salicifo'lia*. White. Fruits large, resembling apricots. Mexico. 1866.—The Capollin or Capoulinos.
- *sero'tina*. See *Cerasus serotina*.
- *serrula'ta*. See *Cerasus serrulata*.
- *sibe'rica*. 6. Pink. April. Siberia. 1788. B. C. t. 1627. Syn., *Armeniaca siberica*.
- *Simo'ni*. White. Spring. China. 1872.
- *sine'nsis*. See *P. japonica*.
- *spino'sa*. 15. White. Spring. Britain. Eng. Bot. ed. 3, t. 408. Blackthorn or Sloe.
- — *flo're-ple'no*. 10. Tarascon.
- — *fo'liis variega'tis*. 10. Britain.
- — *macroca'rpa*. 10. Britain.
- — *microca'rpa*. 10. Britain.
- — *ova'ta*. 10. Britain.
- *subcor'data*. White. California. 1889.
- *subhur'tella*. 10. White. Japan. 1868. Syn., *Cerasus pendula*.
- *tomento'sa*. 3. White. Spring. Japan. 1872.
- *trilo'ba*. Pink. April. China. 1857. Syns., *P. virgata*, *Amygdalopsis Lindleyi*, Fl. Ser. t. 1532, and *Prunopsis Lindleyi*.
- *variega'ta*. Leaves yellow-edged. Japan. 1862. Syn., *Cerasus variegata*.
- *virga'ta*. See *P. triloba*.

Psammi'sia. (From *Psammis*, a king of Egypt. Nat. ord., *Ericaceae*; Tribe, *Thibaudieae*.)

Stove or warm greenhouse evergreens. For cultivation, see THIBAUDIA.

- P. Hookeria'na*. 6. Red. September. Mountains of Columbia. 1847. Syns., *P. pinchinensis*, var. *glabra*, and *Thibaudia pinchinensis*, var. *glabra*. B. M. t. 4344.
- *Je'ssica*. Pale red. September. Caraccas. 1885. Syn., *Thibaudia Jessica*. B. M. t. 5647.
- *longi'colla*. Crimson, green. S. America. 1865. B. M. t. 5526.
- *pendulifo'ra*. Crimson, green. Caraccas. 1859. B. M. t. 5204.
- *pinchine'nsis gla'bra*. See *P. Hookeriana*.
- *sarca'ntha*. Red, tipped with yellow. Spring. New Grenada. 1852. Syns., *P. sclerophylla* and *Thibaudia sarcantha*. B. M. t. 5450.
- *sclerophylla*. See *P. sarcantha*.

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.

Pseudodraco'ntium. (From *pseudo*, false, and *Dracontium*; resembling the genus *Dracontium*. Nat. ord., *Aroidae*; Tribe, *Pythonieae*.)

Stove, tuberous herb. For culture, see AMORPHOPHALLUS.

- P. Laou'ri*. Leaves green, marked with round white dots. Cochinchina. 1878. B. M. t. 6673. Syn., *Amorphophallus Laouirii*. Ill. Hort. 1878, p. 90, t. 316.

Pseudogaltonia. (From *pseudo*, false, and *Galtonia*; resembling the

genus *Galtonia*. Nat. ord., *Liliaceæ*; *Tribe, Scilleæ*. Syn., *Lindneria*.)

Stove bulb.

P. Pechenii. 1. Greenish. Damaraland. 1890. Syn., *Lindneria fibrillosa*.

Pseudolarix. (From *pseudo*, false, and *Larix*; resembling the genus *Larix*. Nat. ord., *Coniferae*; Tribe, *Abietineæ*.)

Hardy tree. For culture, see PINUS.

P. Kämpferi. 120. China. Fl. Ser. t. 1777. G. C. 1834, xxii. p. 241. Syn., *Larix Kämpferi*.

Pseudopanax. (From *pseudo*, false, and *Panax*. Nat. ord., *Araliaceæ*.)

Greenhouse evergreen trees. For cultivation, see PANAX.

P. crassifolia. 10. Green. New Zealand. 1846. Syns., *Aralia crassifolia* and *Panax crassifolia*.

— *longissima*. 10. Green. New Zealand. 1866. Syns., *Panax longissima*, *Aralia crassifolia*, var. *picta* and *A. trifolia*.

Pseudophœnix. (From *pseudo*, false, and *Phœnix*; resembling the genus *Phœnix*. Nat. ord., *Palmeæ*; Tribe, *Phœniceæ*.)

Stove palm. For culture, see PHŒNIX.

P. Sargentii. 25. Fruit bright orange or red Florida. 1887. G. C. 1888, iv. p. 409.

Pseudotsuga. (From *pseudo*, false, and *Tsuga*. Nat. ord., *Coniferae*; Tribe, *Abietineæ*.)

Tall, hardy, evergreen trees, differing from *ABIES* in having reflexed cones with persistent scales.

P. Davidiana. China. 1873.

— *Douglasii*. 100-180. North America. 1826. Syns., *P. Lindleyana*, *Abies Douglasii* and *Pinus Douglasii*.

— *pendula*. 50. Branches drooping.

— *Starrii*. Young leaves creamy white. 1872. Garden variety.

— *Standishii*. Leaves silvery beneath.

— *taxifolia*. Dwarfier, but stouter than the type.

— *Lindleyana*. See *P. Douglasii*.

Psidium. Guava. (The Greek name once applied to the Pomegranate. Nat. ord., *Myrtaceæ*; Tribe, *Myrtacæ*. 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, fibry 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 *Cattleya 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 viney from which the frost was little more than excluded in winter. See GUAVA.

P. Araca. See *P. Donianum*.

— *aromaticum*. 5. Guiana. 1779.

— *Cattleya num*. 10. May. Brazil. 1818. Trans. Hort. Soc. iv. t. 11. B. M. t. 2501.

— *chinense*. May. China. 1828.

— *cordatum*. 5. White. Summer. W. Indies. 1811. B. M. t. 1779.

P. decaspermum. A synonym of *Nelitris Jambosella*.

— *Donianum*. 4. May. Brazil. 1820. Syn., *P. Araca*.

— *Guava*. 10. June. W. Indies. 1692. Syn., *P. pomiferum*.

— *sapidissimum*. 10. June. 1824. Syn., *P. pomiferum*, var. *sapidissimum*.

— *indicum*. June. E. Ind. 1824.

— *montanum*. 60. Jamaica. 1879.

— *myrtifolium*. 6. April. 1820.

— *nigrum*. May. China.

— *oligospermum*. 10. 1817.

— *Passanum*. 6. White. Rev. Hort. 1890, p. 233, fig. 71.

— *polycarpon*. 3. May. Trinidad. 1810. Linn. Trans. ii. t. 17. B. E. t. 653.

— *pomiferum*. See *P. Guava*.

— *sapidissimum*. See *P. Guava*, var. *sapidissimum*.

— *psidium*. 2. May. E. Ind. 1824.

— *pyrifolium*. 10. June. W. Ind. 1656. B. R. t. 1079.

— *rubrum*. May. China. 1820.

— *sapidissimum*. Jacq. H. Schoenb. t. 366. A synonym of *P. Guava*, var. *sapidissimum*.

Psilla. See Carrot Maggots.

Psilotum. (From *psilos*, naked; the leaves are few in number and very small. Nat. ord., *Lycopodiaceæ*.)

A curious, almost leafless, stove plant. Fibrous peat.

P. triquetrum. 2. Brazil and Central America. B. C. t. 1916.

Psoralea. (From *psoraleos*, warted; the appearance of some of the species. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. 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, fibry loam. Winter temp. for these, 40° to 48°. *Glandulosa* 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. lupinella. 2. Purple. June. Carolina. 1812.

— *macrostachya*. 3. Purple. July. California. 1833. B. R. t. 1769.

— *melilotoides*. 2. Pale purple. August. North America. 1814. B. M. t. 2063.

— *Onobrychis*. 3. Purple. August. N. Amer. 1818. B. R. t. 453.

— *orbicularis*. 2. Purple. June. California. 1835. B. R. t. 1971.

GREENHOUSE EVERGREEN SHRUBS.

P. aculeata. 3. Blue, white. June. South Africa. 1774. B. M. t. 2158.

— *aphylla*. 2. Blue. June. Cape of Good Hope. 1790. B. M. t. 1727. See also *P. Jacquiniana*.

— *arborescens*. 6. Bluish. May. Cape of Good Hope. 1814. B. M. t. 2090.

— *bracteata*. Purple, white. July. South Africa. B. M. t. 446.

— *corylifolia*. Purple, white. July. South Africa. 1752. B. M. t. 865.

— *decumbens*. 2. Purple, white. South Africa. 1774. B. C. t. 282.

— *glandulosa*. 4. White, blue. Summer. Chili. 1770. B. M. t. 990.

— *intermedia*. See *P. verrucosa*, var. *intermedia*.

- P. Jacquiniæ* na. 2. Blue. June. South Africa. 1790. Syn., *P. aphylla* of Jacq. H. Schoenb. t. 223.
- *Mutisiæ*. See *Dalea Mutisiæ*.
- *odoratissima*. 6. Pale blue. June. Cape of Good Hope. 1725.
- *palestina*. 2. Violet. June. Levant. 1771. Herbaceous.
- *pedunculata*. B. R. t. 223. See *P. tomentosa*.
- *pinna* ta. 6. Blue. June. Cape of Good Hope. 1690. Andr. Rep. t. 474.
- *pubescens*. 2. Pale blue. August. Lima. 1825. B. R. t. 968.
- *repens*. 1½. Blue. July. Cape of Good Hope. 1774.
- *sericea*. 3. Violet. September. Cape of Good Hope. 1815.
- *spicata*. 4. Blue. April. Cape of Good Hope. 1774. Andr. Rep. t. 411.
- *stachydis*. 3. Brown. April. Cape of Good Hope. 1793. /
- *strigata*. 3. Blue. May. Cape of Good Hope. 1816.
- *tenuifolia*. 2. White, blue. June. Cape of Good Hope. 1793.
- *tomentosa*. 3. Blue. June. Cape of Good Hope. 1820. Syn., *P. pedunculata*.
- *verrucosa*. 3. Blue. July. Cape of Good Hope. 1774. B. M. t. 30.
- *intermedia*. 3. Blue. June. Cape of Good Hope. 1820. Syn., *P. intermedia*.

Psycho'tria. (From *psyche*, life; because of their powerful medicinal qualities. Nat. ord., *Rubiaceæ*; Tribe, *Psychotriaceæ*. Allied to *Rudgea*.)

A very large genus of stove evergreen trees and shrubs; but as they are mostly unattractive, very few have been introduced. For cultivation, see COFFEA.

- P. chontalensis*. White; berries blue. Nicaragua. 1870.
- *cyanococca*. White; berries bright blue, ripening in winter. Very handsome and effective when in fruit. Nicaragua. 1870.
- *jasmiflora*. White. S. Brazil. 1860. Syn., *Glonera jasmiflora*.
- *leucocphala*. White. Winter. Brazil. 1880.
- *sulphurea*. Bright blue; berries sulphur coloured. Fiji. 1887.

EXCLUDED SPECIES.

- P. crocea*. See *Palicourea crocea*.
- *lineata*. See *Palicourea spicata*.
- *racemosa*. See *Palicourea racemosa*.
- *rigida*. See *Palicourea rigida*.

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. crategi infests the camellia.

P. ficus and *P. rosæ* are found 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'r'mica. (From *ptarmikos*, sneezing. Nat. ord., *Compositæ*.) A synonym of **Achillea**. *P. grandiflora flo're ple'no* is a double-flowered form of *Achillea grandiflora*.

Pte'lea. Shrubby Trefoil. (From *ptao*, to fly; winged fruit. Nat. ord., *Rutaceæ*; Tribe, *Toddaliææ*.)

Pinnata requires a greenhouse; cuttings of ripe shoots in sand, under a hand-glass; sandy loam and peat. *Trifoliata* and its varieties are hardy; seed in April, and by layers in autumn; any common light soil.

P. ovata. See *Ptelidium ovatum*.

— *pinnata*. 20. White. May. Norfolk Island. 1829. Syn., *Blackburnia pinnata*.

— *trifoliata*. 12. Green. June. N. Amer. 1704.

— *au'rea*. Garden variety. 1882.

— *variegata*. 12. Green. June. 1846.

Ptel'idium. (So named from its resemblance to *Ptelea*. Nat. ord., *Celastrinææ*; Tribe, *Celastrææ*.)

Stove evergreen shrub. Cuttings of young shoots in sand, under a glass, in heat; sandy peat and fibry loam, with pieces of charcoal. Winter temp., 50° to 60°; summer, 60° to 85°.

P. ovatum. 6. Greenish-white. Madagascar. 1818. Syn., *Ptelea ovatum*.

Pte'ris. Brake. (From *pteron*, a

wing; the shape of the fronds, or leaves. Nat. ord., *Filices*.)

All brown-spored. See **FERNs**.

HARDY.

P. aquil'ina. 3. July. Britain.

— *glabra*. Smooth variety. Europe.

— *lanugino'sa*. Woolly variety. Europe.

— *argentea*. $\frac{1}{2}$. July. Siberia. 1816.

— *atro-purpurea*. $\frac{1}{2}$. August. N. Amer.

— 1770.

— *caudata*. 2. October. N. Amer. 1777.

— *pedata*. $\frac{1}{2}$. July. Virginia. 1820.

GREENHOUSE.

P. arguta. 1. August. Madeira. 1778.

— *cretica*. 1. July. Candia. 1820.

— *albolineata*. A variegated form.

— *stenophylla*. Narrow-leaved variety.

— *esculenta*. 3. August. N. S. Wales. 1815.

— *falcata*. 1. June. Australia. 1820.

— *incisa*. 3. 1823. Syn., *P. vespertilionis* and

Litobrochia vespertilionis.

— *intra-mar ind'is*. 1. September. Mexico. 1828.

— *Kingia'na*. June. Norfolk Island. 1831.

— *latiz'na*. $1\frac{1}{2}$. June. Moreton Bay. 1831.

— *scaberula*. New Zealand.

— *serrulata*.

— *cristata*. Fronds crested at tips. Japan. 1863.

— *subverticillata*. 1. Mexico. 1831.

— *tre'mula*. 3. July. Australia. 1820.

— *grandiceps*. Garden variety. 1836.

— *umbrosa*. 3. July. Australia. 1823.

STOVE.

P. allosorus. 1.

— *a'mpla*. 6. July.

— *argyrea*. See *P. quadriaurita*, var. *argyrea*.

— *aspericaulis*. 2. E. Indies.

— *rubro-ne'ria*. Fronds dark green, with deep purplish-red rachis and midrib. India. 1861.

— *Bau'sei*. Garden variety.

— *biaurita*. West Indies. 1824. Syn., *Litobrochia biaurita*.

— *calome'lanos*. $\frac{1}{2}$. September. Cape of Good Hope. 1830.

— *Cervante'sii*. 1. July. Mexico. 1824.

— *chine'nsis*. 2. July. China. 1824.

— *coll'ina*. $\frac{1}{2}$. August. Brazil.

— *comans*. East Indies. 1860. Syn., *Litobrochia comans*.

— *undulata*. Margins wavy.

— *cordata*. 3. June. Mexico. 1820.

— *crenata*. See *P. ensiformis*.

— *crenulata*. 2. July. 1827.

— *cristata na'na*. A garden variety of *P. serrulata*.

— *Currori*. 2. West Tropical Africa. Syn., *Litobrochia Currori*.

— *dele'za*. 4. Brazil. 1844.

— *denticulata*. 2. Tropical America. Syn., *Litobrochia denticulata*.

— *discolor*. 3. August. Brazil. 1825.

— *edulis*. 3. New Zealand. 1837.

— *elata*. 4. Tropical America. Syn., *Litobrochia elata*.

— *elegans*. 3. August. E. Ind. 1824.

— *ensiformis*. 1. India. Syn., *P. crenata*.

— *Victoriae*. Malaya. 1890.

— *felo'ema*. 5. July. Jamaica. 1822.

— *jabellata*. 4. S. Africa.

— *Ghiesbreghtii*. Tropical America. 1857.

— *glau'co-virens*. Tropical America. 1858.

— *grandifolia*. 1. Tropical America. Syn., *Litobrochia grandifolia*.

— *vittata*.

— *heteroda'ctyla*. Malay Archipelago.

— *heterophylla*. 4. July. Jamaica. 1820.

— *Hookeria'na*. 2. Ceylon. 1830.

— *internata*. W. Indies. 1820.

- P. Kunzea*'na. 4. Tropical America. Syn., *Litobrochia Kunzeana*.
 — *lacinia*'ta. 3. W. Indies.
 — *la*'ctea. 1. November.
 — *lanugino*'sa. 3. July. Bourbon. 1819.
 — *la*'ta. 3½. June. Brazil. 1841.
 — *leptophylla*. 1. Brazil. 1824. Syn., *Litobrochia leptophylla*.
 — *longifo*'lia. 2. August. W. Ind. 1770.
 — *longipes*. 2. India.
 — *macilent*'a. 4. New Zealand. Syn., *Litobrochia macilent*'a.
 — *macro*'ptera. 2. Brazil. Syn., *Litobrochia macroptera*.
 — *Milnea*'na. 3. Solomon Islands. 1865.
 — *mi*'sera. ½. Malay Archipelago.
 — *moluca*'na. Malaya. 1880.
 — *mutila*'ta. 1. West Indies.
 — *nemora*'lis. 3. E. Indies.
 — *palea*'cea. 4. St. Helena.
 — *palma*'ta. 1½. Tropical America. 1821.
 — *pa*'tens. 3. Ceylon. Syn., *P. decusata*.
 — *peda*'ta. ½. Tropical America. B. M. t. 3247. Syn., *Doryopteris pedata*.
 — *peruvia*'na. October. Peru. 1830.
 — *Plumie*'ri. 2. July. S. Amer. 1818.
 — *podophylla*. 4. West Indies. Syn., *Litobrochia podophylla*.
 — *pu*'ngens. Tropical America.
 — *quadrauri*'ta. 3. Tropics.
 — *argyro*'a. E. Indies. 1859.
 — *fusci*'pes. 1. Solomon Isles. 1868.
 — *tri*'color. E. Indies. 1860.
 — *rotundi*'fo'lia. 1½. July. New Zealand. 1824.
 — *sagitta*'ta. 3. June. S. Amer. 1826.
 — *sagittifo*'lia. 1. Tropical America. Syn.; *Doryopteris sagittifolia*.
 — *sempinna*'ta. E. Indies.
 — *seri*'lla'ta. 1½. August. India. 1770.
 — *angusta*'ta. Pinnæ narrow, crested at the tips.
 — *Applebya*'na. Pinnæ drooping, tasseled.
 — *corymbi*'fera. Fronds erect, densely crested.
 — *Cowa*'ni.
 — *crista*'ta. Fronds erect, densely crested.
 — *se*'mi'fastigia'ta. Compact and much crested.
 — *Poco*'ckii.
 — *polyda*'ctyla. Pinnæ much forked.
 — *tenui*'fo'lia. Pinnæ narrow.
 — *spinulo*'sa. 1½. September. 1834.
 — *sulca*'ta. 5. June. Jamaica. 1841.
 — *terni*'fo'lia. 1. June. 1838.

EXCLUDED SPECIES.

- P. angustifo*'lia. See *Tænitis angustifolia*.
 — *argen*'tea. See *Cassebeera argentea*.
 — *argyrophylla*. See *Cheilanthes farinosa*.
 — *auricula*'ta. See *Cassebeera auriculata*.
 — *auri*'ta. See *Litobrochia aurita*.
 — *collin*'a. See *Doryopteris collina*.
 — *corda*'ta. See *Pellæa cordata*.
 — *cri*'spa. See *Cryptogramme crisp*'a.
 — *decursi*'va. See *Cheilanthes farinosa*.
 — *farino*'sa. See *Cassebeera farinosa*.
 — *flezu*'sa. See *Pellæa cordata*, var. *flezuosa*, and *Platyloma flezuosa*.
 — *gra*'cilis. See *Cheilanthes lanuginosa*.
 — *hasta*'ta. See *Cassebeera hastata* and *Doryopteris hastata*.
 — *imbrica*'ta. See *Jamesonia imbricata*.
 — *interme*'dia. See *Litobrochia intermedia*.
 — *intramargina*'lia. See *Cassebeera intramarginalis*.
 — *lanceola*'ta. See *Tænitis lanceolata*.
 — *lanugino*'sa. See *Eriochasma lanuginosa*.
 — *palma*'ta. See *Doryopteris palmata*.
 — *peda*'ta. See *Cassebeera pedata*.
 — *piloselloides*. See *Notholæna piloselloides*.
 — *sagitta*'ta. See *Doryopteris sagittifolia*.

- P. splendens*. See *Litobrochia splendens*.
 — *trichomanoides*. See *Notholæna trichomanoides*.

Pterocarpus. (From *pteron*, a wing, and *karpos*, a fruit; seed-pods with wing-like appendage. Nat. ord., *Leguminosæ*; Tribe, *Dalbergiææ*. Allied to *Dalbergia*.)

Stove evergreen trees. Cuttings of half-ripened, stubby side-shoots in sand, under a glass, and in bottom-heat; rich, fibry loam. Winter temp., 50° to 55°; summer, 60° to 85°.

- P. Bro*'unei. 10. White, red. W. Ind. 1733.
 — *buzifo*'lius. A synonym of *Brya ebenus*.
 — *dalbergioides*. See *P. indicus*.
 — *dra*'co. 40. White. W. Ind. 1820.
 — *fla*'vus. See *P. indicus*.
 — *glab*'er. A synonym of *Brya ebenus*.
 — *indicus*. 30. White. E. Ind. 1813. Syn., *P. dalbergioides*, Wight Ic. t. 246 and *P. flavus*.
 — *luna*'tus. A synonym of *Drepanocarpus lunatus*.
 — *marsu*'pium. 40. White. E. Ind. 1811.
 — *Plumie*'ri. 10. White. S. Amer. 1820.
 — *Ro*'hrri. 20. Guiana. 1816.
 — *santalinoi*'des. 50. Yellow. Sierra Leone. 1793. A synonym of *Andira sapindoides*.
 — *santali*'nus. 60. Yellow. E. Ind. 1800.
 — *sea*'ndens. 15. Yellow. Caraccas. 1817. Climber.
 — *Siebe*'ri. 10. White, red. Guinea. 1824.

Pterocarya. (From *pteron*, a wing, and *caryon*, a nut; winged fruit. Nat. ord., *Juglandaceæ*. 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. See *P. fraxinifolia*.
 — *fraxifo*'lia. 40. Greenish. May. Caucasus and Eastern Europe. 1800. Syn., *P. caucasica*. Caucasian Walnut.
 — *rhoi*'fo'lia. Greenish. Japan.
 — *Spachia*'na. 1882. Arboretum Segrezianum, t. 20.
 — *steno*'ptera. Greenish. China. 1882.

Pterocéphala. (From *pteron*, a wing, and *kephale*, a head. Nat. ord., *Dipsacææ*.) A synonym of *Scabiosa*.

Pterochilus. (From *pteron*, a wing, and *cheilos*, a lip. Nat. ord., *Orchidææ*; Tribe, *Epidendræ-Malaxææ*.) A synonym of *Microstylis*.

Pterococcus. (From *pteron*, a wing, and *kokkos*, a berry. Nat. ord., *Polygonacææ*.) A synonym of *Calligonum*.

Pterodiscus. (From *pteron*, a wing, and *discus*, a disk. Nat. ord., *Pedalineææ*; Tribe, *Pedaliææ*. 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. luridus*. 1½. Dull yellow. July. S. Africa. 1868. B. M. t. 5784.
— *speciosus*. 2. Lilac, purple. May. S. Africa. 1844. B. M. t. 4117.

Pterolo'bium. (From *pteron*, a wing, and *lobos*, a pod. Nat. ord., *Leguminosæ*; Tribe, *Eucæsalpinicæ*.)

Stove, prickly shrub, the pods of which are produced into wings at the tip. For culture, see CÆSALPINIA.

- P. indicum*. Yellowish. East Indies. Syn., *Cæsalpinia lacerans*.

Pterolo'ma. (From *pteron*, a wing, and *loma*, a fringe. Nat. ord., *Leguminosæ*; Tribe, *Hedysarææ*.) A synonym of **Desmodium**.

Pteroneu'ron. (From *pteron*, a wing, and *neuron*, a nerve; winged seed-cord. Nat. ord., *Cruciferae*; Tribe, *Arabideæ*.) A synonym of **Cardamine**.

- P. carnosum*. See *Cardamine carnosæ*.
— *græcum*. See *Cardamine græca*.

Pteronia. (From *pteron*, a wing; feathery scales on the flower-receptacle. Nat. ord., *Compositæ*; Tribe, *Asteroidææ*. Allied to *Chrysocoma*.)

Greenhouse, yellow-flowered, evergreen shrubs, from South Africa. Cuttings of young shoots in sandy soil, under a hand-light; also by seeds in a slight hotbed, in spring, or in the greenhouse, in summer; fibry loam and sandy peat. Winter temp., 40° to 48°.

- P. camphorata*. 3. June. 1774. Syn., *P. stricta*.
— *Chamæpeuce rutilica*. A synonym of *Chamæpeuce rutilica*.
— *echinata*. A synonym of *Felicia echinata*.
— *fasciculata*. 2. June. 1818.
— *flexicaulis*. 3. July. 1812.
— *glomerata*. 2. June. 1817.
— *oppositifolia*. ½. July. 1774.
— *pa'llens*. 2. June. 1816.
— *pauciflora*. B. M. t. 1697. See *Helipterum virgatum*.
— *scariosa*. 2. July. 1815.
— *stricta*. See *P. camphorata*.

Pteropsis. (From *pteron*, a wing, and *opsis*, like; shape of the fronds, or leaves. Nat. ord., *Filices*.) A synonym of **Tænitis**.

- P. furcata*. See *Tænitis furcata*.

Pterospe'rmum. (From *pteron*, a wing, and *sperma*, a seed; winged seeds. Nat. ord., *Sterculiacææ*; Tribe, *Helictææ*.)

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, fibry loam and lumpy peat, with good drainage. Winter temp., 50° to 55°; summer, 60° to 85°.

- P. acerifolium*. 10. August. 1790. B. M. t. 620.
— *platanifolium*. 15. 1820.
— *semisagittatum*. 10. 1820.
— *suberifolium*. 10. 1783. B. M. t. 1528. Syn., *Pentapetes suberifolia*.

Pteroste'lma. (From *pteron*, a wing, and *stelma*, a girdle. Nat. ord.,

Asclepiadacææ; Tribe, *Marsdeniææ*.) A synonym of **Hoya**.

Pterostigma. (From *pteron*, a wing, and *stigma*, the female organ. Nat. ord., *Scrophulariacææ*; Tribe, *Gratiolææ*.) A synonym of **Adenosma**.

Stove herbaceous perennial. Cuttings under a bell-glass in heat. Sandy peat.

- P. grandiflorum*. 3. Violet. Hong Kong. 1845. B. R. 1846, t. 16. A synonym of *Adenosma grandiflora*.

Pterostylis. (From *pteron*, a wing, and *stylis*, a column; in allusion to the broadly winged column. Nat. ord., *Orchideææ*; Tribe, *Neottiacæ-Diurideææ*. Allied to *Corysanthes*.)

Greenhouse terrestrial orchids. Divisions. Leaf-mould, lightened by the admixture of a little sand; the pots should be about one-third filled with broken crocks, before putting in the soil. No shade required. Summer temp., 60° to 80°; winter, 50° to 60°.

- P. acuminata*. ½. Green. April. N. S. Wales. 1827. B. M. t. 3401.
— *Banksii*. 1. Green. April. New Zealand. 1832. B. M. t. 3172.
— *Baptistii*. 1. Green, white, brown. Winter. Australia. 1877. B. M. t. 3651.
— *concinna*. ½. Purple-brown, green. N. S. Wales. 1828. B. M. t. 3400.
— *curta*. ½. Green. October. Australia. 1820.
— *nutans*. ½. Green. September. Australia. 1826. B. M. t. 3085.

Pterostyrax. (From *pteron*, a wing, and *Styrax*, the genus *Styrax*. Nat. ord., *Styracææ*.) See **Halesia**.

- P. hispidum*. See *Halesia hispida*.

Ptilomeris. (From *ptilon*, afeathered, and *meris*, a part. Nat. ord., *Compositææ*.) See **Actinolepis**.

- P. coronaria*. See *Actinolepis coronaria*.

Ptilotrichum. (From *ptilon*, a feather, and *thrix*, a hair. Nat. ord., *Cruciferae*; Tribe, *Alyssinææ*.) A synonym of **Alyssum**.

Hardy, white-flowered, deciduous shrubs. Cuttings in spring and summer; light, sandy soil; knolls and rock-works. The two species mentioned below are forms of *Alyssum canescens*.

- P. canescens*. April. Siberia. 1828.
— *elongatum*. April. Altai. 1836.

Ptychococcus. (From *ptyche*, a fold, and *coccus*, a berry. Nat. ord., *Palmeææ*; Tribe, *Areceææ*.)

- Stove palm. For culture, see **PTYCHOSPERMA**.
P. arecinus. 60. Java. 1884.

Ptychosperma. (From *ptyche*, a fold or winding, and *sperma*, a seed; probably in allusion to the ruminated albumen. Nat. ord., *Palmeææ*; Tribe, *Areceææ*. Syn., *Seaforthia*.)

Stove palms. Seeds, sown in a hotbed. Rich loam and leaf-mould, with a top-dressing of cow-dung. Summer temp., 65° to 85°; winter, 60° to 65°.

- P. Alexandrae*. 70. Australia. 1870. Fl. Ser. t. 1916. Now known as **ARCHONTO-PHENIX ALEXANDREÆ**.

- P. Cunninghamiana*. 60. Queensland. Syn., *Seaforthia elegans*, B. M. t. 4961. Now known as ARCHONTOPHENIX CUNNINGHAMIANA.
- *e'legans*. Central America. 1868.
- *Ku'hii*. See *Pinanga Kuhlii*.
- *laeera'ta*. Central America. 1868.
- *Macarthur'iae*. New Guinea. 1879. Syn., *Kentia Macarthuriae*.
- *Normanbyi*. 60. Anstralia. Syns., *Areca Normanbyi* and *Cocos Normanbyi*.
- *pa'tula*. Sumatra.
- *regal'is*. India. 1867.
- *Ru'mphii*. See *Drymophlaeus oliveiformis*.
- *rupi'cola*. See *Lozococcus rupicola*.
- *Seema'nni*. New Guinea. 1879.
- *singapore'nsis*. See *Drymophlaeus singaporensis*.

Puccinia. A large genus of minute fungi, belonging to the order *Uredineae*, parasitic upon living plants. Most of

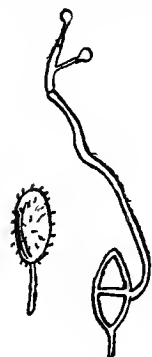


FIG. 1.

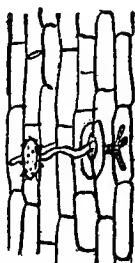


FIG. 2.

the members of this order have been proved to assume different forms in the course of their life history, which were formerly thought to be quite distinct genera. It has been found convenient to still designate the various forms by the old generic names, the final form being the Puccinia. The forms are :

1. **ÆCIDIDIUM**, or **CLUSTER-CUP**.—In this the fungus is embedded in the lower surface of the leaves, and covered by its own skin or *peridium*, which latter at length bursts and forms cups, such as are shown on p. 97. The upper figure (drawn diagrammatically and magnified about thirty times) is a vertical section of such a cup, showing the chains of *conidia* or reproductive bodies arising from its base, some of the upper ones breaking free. It also shows the filaments or *hyphae* penetrating the tissue of the leaf.

2. **UREDIDIUM**.—In this state the spores are not inclosed in a cup, but borne singly at the end of a hypha, as shown in the left-hand illustration of fig. 1.

Each spore consists of a single cell, much larger than that of the *Æcididium* stage, and is generally warted. Fig. 2 shows one of these spores germinating on the epidermis of a leaf, and the hypha thus produced entering the leaf through a pore or *stoma*.

3. **PUCGINIA**, or **TELEUTOSPORE**.—This is generally produced on the same host as the *Uredo*, but later in the season. The spores in Puccinia proper are two-celled, but in some allied forms vary from one to many-celled. These spores, like those of the *Uredo*, are borne singly at the end of a hypha. The right-hand, fig. 1, represents a teleutospore germinating. Sometimes several generations of one form are produced before proceeding to the next. See also *Æcidium*, *Barberry Fungus*, and *Hollyhock Fungus*.

Puccoon. *Sanguina'ria*.

Pudding. See **Mudding**.

Puera'ria. (Named after M. Puerrari, a Swiss botanist. Nat. ord., *Leguminosae*; Tribe, *Phaseoleae*. Allied to *Canavalia*.)

Greenhouse, yellow-flowered, evergreen climbers. Cuttings of half-ripened shoots in sand, under a glass; sandy peat and fibry loam. Winter temp., 40° to 48°.

P. Thunbergia'na. Violet, with yellow spot on the upper petal. Japan. 1889. Rev. Hort. 1891, p. 31, fig. 8. Syns., *Dolichos hirsutus*, *D. japonicus*, and *Pachyrhizus Thunbergianus*.

- *tuberosa*. 3. Yellow. Nepaul. 1806.
- *Walli'chii*. 3. Yellow. Nepaul. 1826.

Pulica'ria. (From *pulex*, a flea; the smell is supposed to drive fleas away. Nat. ord., *Compositae*; Tribe, *Inuloideae*.)

Hardy, herbaceous perennial. For culture, see **INULA**.

- P. odora*. 1½. Yellow. July. South Europe. 1801. Syn., *Inula odora*.

Pulmona'ria. Lungwort. (From *pulmonarius*, diseased lungs; referring to its supposed efficacy in those diseases. Nat. ord., *Boragineae*; Tribe, *Boragae*.)

Hardy, herbaceous perennials. Divisions in spring; common garden-soil.

- P. angustifolia*. ¾. Violet. April. Britain. Eng. Bot. ed. 3, t. 1097. Syn., *P. azurea*. Blue Cowslip.

- — *oblonga'ta*. See *P. vulgaris*.
- *azurea*. See *P. angustifolia*.
- *dahur'ica*. B. M. t. 1742. See *Mertensia dahurica*.
- *denticula'ta*. See *Mertensia sibirica*.
- *grandiflora*. See *P. saccharata*.
- *margina'ta*. A synonym of *Mertensia lanceolata*.
- *maritima*. A synonym of *Mertensia maritima*.
- *mollis*. ¾. Blue. June. Europe. and Siberia. B. M. t. 2422.
- *oblonga'ta*. See *P. vulgaris*.

- P. officinalis*. 1. Pink. April. England.
 Eng. Bot. ed. 3, t. 1098.
 — *a'liba*. 1. White. June. England.
 — *paniculata*. B. M. t. 2680. A synonym of
Mertensia paniculata.
 — *parviflora*. A synonym of *Mertensia mari-*
tima.
 — *pubescens*. A synonym of *Mertensia panicu-*
lata.
 — *saccharata*. 1. Pink. June. Europe. 1817.
 Syn., *P. marginata*.
 — *sibirica*. A synonym of *Mertensia sibirica*.
 — *tuberosa*. See *P. vulgaris*.
 — *virginica*. B. M. t. 160. A synonym of *Mer-*
tensia pulmonarioides.
 — *vulgaris*. 1. Pink. May. Central Europe.
 1824. Syns., *P. angustifolia*, var. *ob-*
longata, *P. oblongata*, and *P. tuberosa*.

Pultenæ'a. (Named after Dr. Pul-
 teney. Nat. ord., *Leguminosæ*; Tribe,
Podalyriæ. 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 two to three inches long,
 in sand, in April, under a bell-glass; two parts
 of sandy, fibry peat to one part of fibry loam,
 with a little charcoal and good drainage. Win-
 ter 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. argentea*. See *P. dentata*.
 — *aristata*. 1½. May. 1824.
 — *aspera*. A synonym of *Phyllota phylli-*
coides.
 — *Ausfeldi*. South Australia. 1865.
 — *biloba*. See *P. scabra*.
 — *brachytrypis*. 1½. Purple, orange. April.
 1838.
 — *ca'ndida*. B. C. t. 1236. See *P. tenuifolia*.
 — *cane'scens*. See *P. plumosa*.
 — *comosa*. See *Phyllota phylli-*
coides.
 — *cordata*. B. M. t. 3443. See *P. juniperina*.
 — *crassifolia*. 2. May. 1824.
 — *cuneata*. 1. June. 1824.
 — *daphnoides*. 2. April. 1792. Andr. Rep.
 t. 98. Syn., *P. obcordata* of Andr. Rep.
 t. 574.
 — *denta'ta*. 2. June. 1820. Syn., *P. argentea*.
 — *echinula*. 1½. April. 1823.
 — *elliptica*. 1. May. 1824. Syn., *P. hypo-*
lampra.
 — *ericoides*. April.
 — *flexilis*. See *P. Sweetii*.
 — *Gu'nii*. Australia. 1885. Gf. t. 1173.
 — *hypola'mpra*. See *P. elliptica*.
 — *incurvata*. 2. May. 1823.
 — *juniperi'na*. 1½. June. 1824. Syn., *P. cor-*
data.
 — *lino'phylla*. 2. April. 1789.
 — *microphylla*. 1. May. 1810.
 — *mucronata*. B. C. t. 1711. See *P. polifolia*.
 — *na'na*. B. C. t. 434. A synonym of *Chorizema*
ilicifolium.
 — *obcordata*. 2. June. 1808. Syn., *Euchilus*
obcordatus, B. R. t. 403. *P. obcordata*
 of Andr. Rep. t. 574 is *P. daphnoides*.
 — *Otto'nis*. 1857.
 — *oxalidifolia*. See *P. ternata*.
 — *Paxto'ni*. Yellow, reddish. 1861.
 — *pedunculata*. May. 1820. B. M. t. 2859.
 — *plumosa*. 1½. April. 1824.
 — *polifolia*. 2. May. 1824. Syns., *P. mucro-*
nata and *P. rosmarinifolia*.
 — *polygalifolia*. 2. May. 1817.
 — *procumbens*. ½. April. 1823.
 — *racemosa*. 2. April. 1820.
 — *retusa*. 1. April. 1789.
 — *ro'sea*. 2. Pink. 1877.
 — *rosmarinifolia*. B. R. t. 1584. See *P. poli-*
folia.

- P. rupo'stris*. 1. 1845.
 — *scabra*. 1½. April. 1803. Syn., *P. biloba*.
 — *squarrosa*. A synonym of *Phyllota phylli-*
coides.
 — *stipularis*. 2. April. 1792.
 — *stricta*. 2. June. 1803. B. M. t. 1588.
 — *subumbellata*. 1. April. 1831. B. M. t. 1584.
 — *Sweetii*. 1½. May. 1801. Syn., *P. flexilis*.
 — *tenuifolia*. 1½. April. 1817.
 — *terna'ta*. 2. April. 1826. Syn., *P. oxalidi-*
folia.
 — *thymifolia*. 1. May. 1810.
 — *vestita*. 3. April. 1803.
 — *villo'sera*. 2. May. 1824.
 — *villo'sa*. B. R. t. 309. A synonym of *Actus*
villosa.

Pu'nica. Pomegranate. (From
puniceus, scarlet; the colour of the
 flowers. Nat. ord., *Lythariæ*.)

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. The variety *na'na* requires the
 stove.

- P. Grana'tum*. 18. Red. South Europe. 1548.
 B. M. t. 1832.
 — *albe'scens*. 10. Whitish. China.
 — *albe'scens flo're'ple'no*. 10. Whitish.
 Syn., *P. Granatum*, var. *album*.
 — *flavum*. 10. Yellow.
 — *flo're'ple'no*. White, yellowish. Double-
 flowered. Garden variety.
 — *na'na*. 3. Red. South America. 1723.
 Syn., *P. nana*.
 — *rubrum flo're'ple'no*. 10. Red. South
 Europe. Syn., *P. Granatum*, var.
plenum.
 — *na'na*. B. M. t. 634. See *P. Granatum*, var.
nana.

Punnet. See **Basket**.

Pupa. The name applied to one of
 the stages in the life of an insect. In
 some insects, e.g., Butterflies, it is the
 resting state, and is known as the chry-
 salis; in others, e.g., Grasshoppers, it
 is active, and somewhat resembles the
 perfect form.

Pupa'lia. (From *Pupali*, the East
 Indian name. Nat. ord., *Amarantha-*
cæ.)

Stove evergreen sub-shrub. Sandy loam. Cut-
 tings in sand, in heat, under a bell-glass.

- P. atropurpurea*. 2. Dark purple. September.
 Tropics of the Old World. 1756.

Purification Flower. *Gala'nthus*
nivalis.

Purple Carrot-seed Moth. *De-*
pressa'ria depressella.

Purple Loose-strife. *Ly'thrum*
salicaria.

Purple Medick. *Medica'go sati'va*.

Purple Wreath. *Petra'ea volu'bi-*
lis.

Pu'rshia. (Named after F. Pursh,

a writer on American plants. Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*.) A genus of doubtful affinity.

Hardy evergreen shrub. Cuttings of young shoots in sand, under a hand-light, in early summer; also by seeds, treated as rose-seeds; sandy, poor soil.

P. hispida. A synonym of *Onosmodium hispidum*.

— *mollis*. A synonym of *Onosmodium molle*.
— *tridentata*. 2. Yellow. N. Amer. 1826. B. R. t. 1446.

Purslane. (*Portulaca*.) *P. oleracea*, Green, or Garden Purslane. *P. sativa*, Golden Purslane.

They thrive best in a light, rich soil, and prefer a warm situation, such 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 six inches apart, very thin, and not more than a quarter of an inch deep. Keep the seedlings clear of weeds, and thin to six or eight 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 two to five 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 70°.

To obtain Seed.—A few of the earliest border-raised plants must be left un-gathered 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*.

Puschkinia. (Named after *M. Pouschkin*, a Russian botanist. Nat. ord., *Liliaceæ*; Tribe, *Scilleæ*. Allied to Hyacinth.)

Half-hardy bulb. Offset-bulbs; deep, sandy loam; requires a little protection, or to be taken up in winter.

P. scilloides. $\frac{1}{2}$. Pale blue. May. Siberia. 1819. B. M. t. 2244.
— *sicula*. $\frac{1}{2}$. Blue. Sicily. 1875.

Puss Moth. *Dicranura*'*ra vinula*.

Puto'ria. (From *putor*, a strong smell; the leaves have a strong odour. Nat. ord., *Rubiaceæ*; Tribe, *Spermacoceæ*.)

Dwarf, hardy, much-branched shrub. Gravelly soil. Divisions.

P. calabrica. $\frac{1}{2}$. Red. July. Mediterranean region. 1820. Syns., *Asperula calabrica*, *Ernodea montana*, Sibth. Fl. Gr. t. 143, and *Pavetta fetidissima*.

Putterli'ckia. (After *A. Putterlick*, a Viennese botanist, 1810-1845. Nat. ord., *Celastrineæ*.)

Greenhouse shrub. For culture, see CELASTRUS.

P. Pyracantha. 3. Green, purple. Winter. South Africa. Syn., *Celastrus Pyracanthus*, B. M. t. 1167.

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 hundredweight 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, 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., *Bromeliaceæ*; Tribe, *Pitcairnieæ*.)

Stove herbaceous perennials, except *magnipspatha*, 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. Acapulca. A synonym of *Pitcairnia Bonplandii*.

— *Altensteinii*. See *Pitcairnia Altensteinii*.

— *gigantea*. B. M. t. 4309. See *Pitcairnia Altensteinii*, var. *gigantea*.

— *cœrulea*. See *Pitcairnia cœrulea*.

— *chilensis*. B. M. t. 4715. See *Pitcairnia chilensis*.

— *coarctata*. See *Pitcairnia chilensis*.

— *gigas*. 3. White, tinged with red and violet. Andes of Columbia. 1880. Rev. Hort. 1881, p. 314, fig. 94.

— *grandiflora*. B. M. t. 5234. See *Pitcairnia ferruginea*.

— *heterophylla*. See *Pitcairnia heterophylla*.

— *lanuginosa*. Pale sea-green. Peru. 1888.

— *longifolia*. Paxt. Fl. Gard. iii. p. 86. See *Pitcairnia heterophylla*.

— *magnipspatha*. $\frac{1}{2}$. Green, white. May. S. America. 1820.

— *maidifolia*. See *Pitcairnia maidifolia*.

— *pyramidalis*. 1. Yellow. June. Peru. 1822.

— *recurvata*. See *Pitcairnia recurvata*.

— *Rozlii*. See *Pitcairnia megastachya*.

- P. rubricaulis*. Blue, red. June. Chili. 1827.
 — *suberosa*. See *Pitcairnia chilensis*.
 — *sulphurea*. B. M. t. 4696. See *Pitcairnia Wendlandi*.
 — *virescens*. B. M. t. 4991. See *Pitcairnia virescens*.
 — *Warszewiczii*. B. M. t. 5225. See *Pitcairnia atrorubens*.
 — *Whytei*. B. M. t. 5732. See *Pitcairnia caerulea*.

Pycnostachys. (From *pyknos*, dense, and *stachys*, a spike; dense flower-spikes. Nat. ord., *Labiatae*; Tribe, *Ocimoideae*.)

- Stove annual. For culture, see OCIMUM.
P. caerulea. 3. Blue. August. Madagascar. 1825.
 — *urticifolia*. Blue. Tropical Africa. 1863. Sub-shrub. B. M. t. 5365.

Pyrethrum. Feverfew. (From *pyr*, fire; alluding to its acrid roots. Nat. ord., *Compositae*; Tribe, *Anthemideae*.) In Bentham and Hooker's *Genera Plantarum* this genus is united to **Chrysanthemum**, but for garden purposes it may be regarded as distinct. The names the various species would bear in *Chrysanthemum* are here appended as synonyms.

All white-flowered, except where otherwise mentioned. Hardy kinds, divisions and seeds, and common garden-soil; greenhouse kinds, by cuttings under a hand-light, in sandy, light soil; sandy, fibry loam, and leaf-mould; half-shrubby kinds, such as *feniculatum*, will not only do well in cold greenhouses, but will probably answer for the bottom of conservatory walls.

GREENHOUSE EVERGREENS.

- P. Broussonetii*. 2. July. Canaries. 1817. Syn., *Chrysanthemum Broussonetii*.
 — *coronopifolium*. 2. Canaries. Syn., *Chrysanthemum grandiflorum*.
 — *diversifolium*. $\frac{1}{2}$. July. N. Holland. 1823. Herbaceous. B. R. t. 1025. A synonym of *Brachystephium leucanthemoides*.
 — *frutescens*. 3. Canaries. 1699. Syn., *Chrysanthemum frutescens*.
 — *grandiflorum*. 3. Canaries. 1815. Syn., *Chrysanthemum pinnatifidum*.
 — *speciosum*. 3. Canaries. 1815.

HARDY ANNUALS.

- P. brevibradiatum*. $\frac{1}{2}$. Yellow. July. 1818.
 — *elegans*. 1. July. Mount Baldo. 1816. Biennial. Syn., *Chrysanthemum maritimum*.
 — *indicum*. $\frac{3}{4}$. Yellow. July. E. Ind. 1810. B. M. t. 1521. Syn., *Chrysanthemum indicum*.
 — *inodorum*. } Synonyms of *Matricaria inodora*.
 — *parviflorum*. }
 — *præcox*. 1. June. Caucasus. 1818. Syn., *Chrysanthemum præcox*.

HARDY HERBACEOUS.

- P. achilleæfolium*. 2. Yellow. August. Caucasus. 1823. Syn., *Chrysanthemum achilleæfolium*.
 — *alpinum*. $\frac{1}{2}$. July. Switzerland. 1759. Syn., *Chrysanthemum alpinum*.
 — — *pubescens*. $\frac{1}{2}$. July. Switzerland. 1819. Syn., *Chrysanthemum alpinum*, var. *pubescens*.
 — *Barrletieri*. $\frac{1}{2}$. July. South Europe. 1820. Syn., *Chrysanthemum Halleri*.
 — *bipinnatum*. $\frac{3}{4}$. Yellow. June. Siberia. 1796. Syn., *Chrysanthemum bipinnatum*.

- P. Bocconi*. 1. Yellow. July. Spain. 1823. Syn., *Chrysanthemum Bocconi*.
 — *caucasicum*. $\frac{1}{2}$. July. Caucasus. 1804. Syn., *Chrysanthemum caucasicum*.
 — *ceratophylloides*. 1. June. Piedmont. 1819. Syn., *Chrysanthemum coronopifolium*.
 — *cinerariæfolium*. 2. July. Dalmatia. 1826. Syn., *Chrysanthemum rigidum*.
 — *corymbosum*. 1. July. Germany. 1596. Syn., *Chrysanthemum corymbosum*.
 — *Decaisneanum*. $\frac{1}{2}$. Pale yellow. Japan. Syn., *Chrysanthemum Decaisneanum*.
 — *Halleri*. 1. June. Switzerland. 1819. Syn., *Chrysanthemum Halleri*.
 — *latifolium*. 2. June. Pyrenees. 1820. Syn., *Chrysanthemum lacustre*.
 — *leptophyllum*. 1. August. Caucasus. 1821. Syn., *Chrysanthemum leptophyllum*.
 — *macrophyllum*. 3. July. Hungary. 1803. Syn., *Chrysanthemum macrophyllum*.
 — *marginatum*. Dark yellow. Japan. Syn., *Chrysanthemum marginatum*.
 — *maritimum*. 1. August. Britain. Syn., *Chrysanthemum maritimum*.
 — *maximum*. 1. July. South Europe. 1818. Syn., *Chrysanthemum lacustre*.
 — *millefoliatum*. 2. Yellow. July. Siberia. 1731. Syn., *Chrysanthemum millefoliatum*.
 — *patustre*. 1. June. Armenia. 1820. Syn., *Chrysanthemum patustre*.
 — *partheniolum*. 2. July. Caucasus. 1804. Syn., *Chrysanthemum præaltum*.
 — *Parthenium*. 2. July. Britain. Syn., *Chrysanthemum Parthenium*.
 — — *avreum selaginoides*. Leaves bright yellowish green, resembling a *Selaginella*. 1882.
 — — *floré-pléno*. 2. July.
 — *pinnatifidum*. 2. July. 1823. Syn., *Chrysanthemum grandiflorum*.
 — *Tchihatchevii*. 2. White, pale yellow. June Asia Minor. 1869. Syn., *Chrysanthemum Tchihatchevii*.
 — *uliginosum*. $\frac{1}{2}$. August. Hungary. 1816. Syn., *Chrysanthemum uliginosum*.

Pyrola. Winter-green. (From *pyrus*, a pear-tree; resemblance of the leaves. Nat. ord., *Ericaceae*; Tribe, *Pyroleæ*. Allied to *Chimaphila*.)

Hardy herbaceous perennials. Seeds and divisions in a shady, sandy peat-border.

- P. asarifolia*. See *P. rotundifolia*.
 — *chlorantha*. Yellow. North America. 1822. B. C. t. 1542. Syn., *P. convoluta*.
 — *convoluta*. See *P. chlorantha*.
 — *dentata*. See *P. picta*.
 — *elliptica*. $\frac{1}{2}$. White. N. America. 1818.
 — *maculata*. B. M. t. 897. See *Chimaphila maculata*.
 — *media*. $\frac{3}{4}$. White, red. England. Eng Bot. ed. 3, t. 897.
 — *minor*. $\frac{1}{2}$. Red. Britain. Eng. Bot. ed. 3, t. 898. Syn., *P. rosea*.
 — *occidentalis*. Yellow. N. America. 1827.
 — *picta*. Yellow. N. America. 1827. Syn., *P. dentata*.
 — *rosea*. See *P. minor*.
 — *rotundifolia*. $\frac{1}{2}$. White. Britain. Eng. Bot. ed. 3, t. 895.
 — *secunda*. $\frac{1}{2}$. White. Britain. Eng. Bot. ed. 3, t. 899.
 — *umbellata*. B. M. t. 778. See *Chimaphila umbellata*.
 — *uniflora*. Eng. Bot. ed. 3, t. 900. See *Moneses uniflora*.

Pyrolirion. Flame Lily. (From *pyr*, fire, and *lirion*, a lily. Nat. ord.,

Amaryllidæ; Tribe, *Amaryllææ*.) A synonym of **Zephyranthes**.

Very rare greenhouse bulbs, flowering about Midsummer, before the leaves are full-grown, and require rest from December to April. Offset-bulbs; sandy loam and leaf-mould; a greenhouse or a cold pit.

P. aureum. See *Zephyranthes aurea*.
— *faucæ laevi*. B. R. t. 1724. See *Zephyranthes flava*.
— *flavum*. See *Zephyranthes flava*.

Pyrrheïma. (From *pyrrhos*, red, and *eima*, clothing; from the reddish-brown hairs which clothe the whole plant. Nat. ord., *Commelinacææ*; Tribe, *Tradescantiææ*.) A synonym of **Tradescantia**.

Stove perennial herb. Seeds in a hotbed as soon as ripe; divisions. Rich sandy loam and leaf-mould, or a little peat. Summer temp., 65° to 85°; winter, 60° to 65°.

P. Loddigei. See *Tradescantia fuscata*.

Pyrus. Pear-tree. (From *pirus*, name used by Pliny. Nat. ord., *Rosacææ*; Tribe, *Pomeææ*.)

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 and QUINCE.

P. acerba. See *P. Malus*, var. *acerba*.
— *americana*. 15. May. Canada. 1792. Syn., *Sorbus americana*.

— *microcarpa*. Small-fruited variety.
— *amygdaliformis*. 15. May. South Europe. 1810.

— *angustifolia*. 20. Pink. May. N. Amer. 1750.

— *arbutifolia*. 4. May. N. Amer. 1760. Syn., *P. floribunda*.

— *intermedia*. May.
— *melanocarpa*. Fruit dark purple. Syn., *P. grandifolia*, B. R. t. 1154.

— *pyrula*. 1½. May.
— *serotina*. 4. June.

— *Aria*. 40. May. Britain. Eng. Bot. ed. 3, t. 482. White Beam-tree.

— *acutifolia*. 40. May. Europe.
— *bullata*. 30. May. South Europe.

— *cretica*. 30. May. Crete.
— *latifolia*. Broad leaved variety.

— *obtusifolia*. 40. May. Europe.
— *rugosa*. 30. May. South Europe.

— *rupicola*. Leaves white beneath.
— *undulata*. 30. May. South Europe.

— *astracantha*. 20. June. Astracan. 1810.
— *Aucuparia*. 30. May. Britain. Eng. Bot. ed. 3, t. 486. Mountain Ash; Rowan tree.

— *fastigiata*. May.
— *foliis variegatis*. 30. May. Britain.

— *fructu luteo*. 30. May. Britain.
— *pendula*. Branches drooping.

— *variegata*. Leaves variegated.
— *auriculata*. 20. May. Egypt. 1800.

— *baccata*. 15. Pink. April. Siberia. 1784.
— *betulefolia*. White. China. 1879. Rev. Hort. 1879, p. 318.

— *Bollwilleria*. 15. April. Germany. 1786. B. R. t. 1437. Syn., *P. Pollveria*, B. C. t. 1009.

P. Botrydium. See *Amelanchier canadensis*.
— *Chamæmespilus*. 6. May. Pyrenees. 1683.

Syns., *Cratægus Chamæmespilus* and *Sorbus Chamæmespilus*.

— *Hostii*. 10. Rosy-pink. Spring. 1877. Syns., *P. Hostii*, *Aria Hostii*, and *Cratægus Hostii*.

— *communis*. 40. April. England. Eng. Bot. ed. 3, t. 488. Pear.

— *Achras*. 20. April.
— *Briggsii*. See *P. cordata*.

— *florilepis*. 20. April.
— *foliis variegatis*. 20. April.

— *fructu variegato*. 20. April.
— *jaspidæa*. 20. April.

— *Pyraëter*. 20. April.
— *sanguinolenta*. 20. April.

— *sativa*. 20. April.
— *cordata*. Syn., *P. communis*, var. *Briggsii*.

— *coronaria*. 20. Pink. May. Virginia. 1724. B. M. t. 2009. Sweet-scented Crab.

— *crenata*. 15. May. Nepaul. 1820.
— *depressa*. May.

— *dioica*. 10. April. 1818.
— *densiflora*. 6. White. 1879.

— *domestica*. 60. White. Europe.
— *edulis*. 10. April. France. 1816.

— *elæagnifolia*. 20. April. Siberia. 1806.
— *fenicia*. Island of Arran. Syn., *P. pinnatifida*. Eng. Bot. ed. 3, t. 485. A hybrid between *P. Aria*, var. *scandica*, and *P. Aucuparia*?

— *floribunda*. 8. April. China. 1818. Syn., *Malus microcarpa*, var. *floribunda*.

— *grandifolia*. See *P. arbutifolia*, var. *melanocarpa*.

— *Hostii*. See *P. Chamæmespilus*, var. *Hostii*.
— *intermedia*. 40. May. Sweden. 1789.

— *angustifolia*. 10. May.
— *latifolia*. 40. May. Denmark. 1789.

— *japonica*. 6. Deep scarlet. Japan. 1815. Syn., *Cydonia japonica*.

— *lanuginosa*. 25. April. Hungary.
— *lana*. 15. April. Nepaul. 1818.

— *leucocarpa*. Fruit white or creamy. 1879.
— *Malus*. 20. April. Britain. Crab or Apple Tree.

— *acerba*. 20. April. Europe. Syn., *P. acerba*. Eng. Bot. ed. 3, t. 489.

— *Bertini*.
— *cratægina*. 1881. Syn., *Malus microcarpa*, var. *cratægina*.

— *mitis*. Eng. Bot. ed. 3, t. 490.
— *præcox*. 10. Blush. April. Russia. 1784. Syns., *P. præcox* and *Malus microcarpa*, var. *præcox*.

— *sempervirens*. Evergreen Crab. Syn., *Malus microcarpa*, var. *sempervirens*.

— *Maulei*. Orange-red. April. Japan. 1874. Syn., *Cydonia Maulei*.

— *melanocarpa*. 4. May. N. Amer. 1700.
— *subpubescens*. 4. May.

— *microcarpa*. 10. April. N. Amer.
— *nica*. 6. April. Austria. B. R. t. 1842.

— *Parkmanni*. Syn., *Malus Parkmanni*.
— *pinnatifida*. See *P. fenicia*.

— *Pollveria*. B. C. t. 1009. See *P. Bollwilleria*.

— *præcox*. See *P. Malus*, var. *præcox*.
— *prunifolia*. 20. Pink. May. Siberia. 1758. B. M. t. 6158. Siberian Crab.

— *pubens*. 5. May.
— *saticifolia*. 20. May. Russia. 1780.
— *sativifolia*. 15. May. France. 1806. B. R. t. 1482.

— *sambucifolia*. June.
— *Sieboldii*. Japan. 1880. Fruit eatable. Rev. Hort. 1880, p. 110. See also *P. Torringo*.
— *Simoëni*. White. Spring. China. 1872. Rev. Hort. 1872, p. 28, fig. 3.
— *sindica*. 20. May. Levant. 1820. Medlar.

- P. sine'nsis.* May. China. 1820. B. R. t. 1248.
- *So'rbus.* 30. May. England. Medlar.
- *malifo'rmis.* 30. May.
- *pyrifo'rmis.* 30. May.
- *specta'bilis.* 20. May. China. 1780. B. M. t. 267.
- *Kai'do.* Blush-white. Japan. 1874.
- *Tori'ngo.* White or rosy. May. Japan. Syns., *P. Sieboldii* of Regel and *Malus macrocarpa*, var. *Toringo*.
- *Ri'ngo.* Leaves more deeply cut.
- *spu'ria.* 20. May. 1800. B. R. t. 1196.
- *pe'ndula.* May.
- *sambucifo'lia.* 20. May. 1818.
- *thianscha'nica.* Central Asia. 1890.
- *tomento'sa.* 20. May. Europe. 1810.
- *tormina'lis.* 50. May. England. Wild Service.
- *triloba'ta.* 20. May. South Europe. 1810.
- *ussurie'nsis.* 20. May. Eastern Asia. 1861.
- *variolo'sa.* 50. May. Nepaul. 1825.
- *vesti'ta.* April. Nepaul. 1820.

Py'rus Malus or **Apple.** The varieties of the apple are now extremely numerous, so that it is possible to give here the names of but a few of the most desirable. Those varieties should be selected for growing which are most adapted to the soil of the locality, as disappointment is often caused through a variety, which has thrived well in one part of the country, failing to produce a remunerative crop in another.

Espalier and dwarf. Dessert kinds.

— Lamb-abbey Pearmain; Hick's Fancy; Kerry Pippin; Sturmer Pippin; Ribston Pippin; Pitmaston Nonpareil; Boston Russet; Claygate Pearmain; Keddlestone Pippin; Mr. Gladstone; Old Nonpareil; Braddick's Nonpareil; Scarlet Nonpareil; Pearson's Plate; Court-penduplat; Court of Wick; Golden Drop; King of Pippins; Margille; Golden Reinette; Reinette du Canada; Reinette Grise; Van Mons Reinette; Sturmer Pippin; Red Quarrenden; Adam's Pearmain; Boston Russet; Baddorn; or Spring Ribston Pippin; Early Harvest; Early Margaret; Golden Harvey.

Standard. Dessert.—Hick's Fancy; Kerry Pippin; Pitmaston Nonpareil; Court of Wick; King of Pippins; Golden Reinette; Adam's Pearmain; Boston Russet; Early Harvest; Early Margaret; Summer Pippin; Ribston Pippin.

Espaliers and dwarfs.—*Kitchen.*—Hawthornden; Alfriston; Pitmaston Nonpareil; Manks Codling; Wareham Russet; Blenheim Orange; Chappell; Keswick Codling; Waltham - Abbey Seedling.

Standard. Kitchen.—Alexander; Northern Greening, or John; Mank's Codling; Chappell; Wareham Russet; Blenheim Orange; Blenheim Pippin; Normanton or Dumelow's Seedling;

Gravenstein; Jolly Beggar; Keswick Codling; Hawthornden; New or Winter Hawthornden; Bedfordshire Foundling; Brabant Bellefleur; Cellini; Reinette du Canada; Emperor Alexander; Non-such; Norfolk Beeing; Small's Admirable; Worcestershire Pearmain; Dutch Codling; Wormsley Pippin; Waltham Abbey Seedling; Alfriston; Court Pendu Plat; D. T. Fish; French Crab.

For walls.—Ribston Pippin; Old Nonpareil; Newtown Pippin; Sturmer Pippin.

Propagation by seed.—Sow in autumn the largest and most convex seeds of a favoured variety, in pots, or a border of light, rich loam; bury the seed an inch deep; if in a border, six inches apart each way. Mr. Loudon says, "The end of the first year they should be transplanted into nursery rows, from six inches to a foot apart every way. Afterwards they should be removed to where they are to produce fruit; and for this purpose the greater the distance between the plants the better. It should not be less than six or eight feet every way. The quickest way to bring them into a bearing state, Mr. Williams of Pitmaston considers, is to let the plants be furnished with lateral shoots, from the ground upwards, so disposed as that the leaves of the upper shoots may not shade those situated underneath, pruning away only trifling shoots.

"He adopted this mode, and succeeded in producing fruit from seedling apples at four, five, and six years of age, instead of waiting eight, ten, and even fifteen years, which must be the case by the usual mode of planting close, and pruning to naked stems."

The advice of Mr. Williams is very good: but we must remind our readers that most of our shy, flowering, arborescent, or shrubby plants or trees are soonest brought to blossom by first encouraging a high amount of luxuriance, and then inducing a severe check by root-pruning.

By such means, carefully carried out, there can be no doubt that seedling apples may be made to blossom in four years. The check may either consist in a severe root-pruning, or the plants may be transplanted; taking care to prune away all taper-forked roots, and using all possible means to encourage surface fibres.

We may add here, that the less pruning of the shoots the better; the knife is a great enemy to early fruitfulness in young trees, especially codlings.

Most good cultivators—and we be-

lieve we may include the highly-scientific authority of the late Mr. Knight, of Downton—prefer grafting the shoots of seedling apples, when two years old, on very old, healthy, and fine bearing kinds. In doing so, the extremities of the best branches should be chosen, as also, the lightest portion of the tree, which should stand in a sheltered and warm situation.

Mr. Knight states that “the width and thickness of the leaf generally indicate the size of the future apple, but will by no means convey any correct idea of the merits of the future fruit. When these have the character of high cultivation, the qualities of the fruit will be far removed from those of the native species; but the apple may be insipid or highly flavoured, green or deeply coloured, and of course, well or ill calculated to answer the purposes of the planter. An early blossom in the spring, and an early change of colour in the autumnal leaf, would naturally be supposed to indicate a fruit of early maturity; but I have never been able to discover any criterion of this kind on which the smallest dependence may be placed.

“The leaves of some varieties will become yellow and fall off, leaving the fruit green and immature; and the leaves in other kinds will retain their verdure long after the fruit has perished. The plants whose buds in the annual wood are full and prominent, are usually more productive than those whose buds are small and shrunk in the bark; but their future produce will depend much on the power the blossoms possess of bearing the cold; and this power varies in the varieties, and can only be known from experience. Those which produce their leaves and blossoms rather early in the spring are to be preferred; for, though they are more exposed to injury from frost, they less frequently suffer from the attacks of insects—the more common cause of failure. The disposition to vegetate early or late in the spring is, like almost every other quality in the Apple-tree, transferred in different degrees to its offspring; and the planter must therefore seek those qualities in the parent-tree which he wishes to find in the future seedling plants. The best method I have been able to discover of obtaining such fruits as vegetate very early in the spring, has been by introducing the pollen of the Siberian crab into the blossom of a rich and early apple, and by transferring, in the same manner, the pollen of the apple to the

blossom of the Siberian crab. The leaf and the habit of many of the plants that I have thus obtained possess much of the character of the apple, whilst they vegetate as early in the spring as the crab of Siberia, and possess at least an equal power of bearing cold; and I possess two plants of the family which are quite as hardy as the most austere crab of our woods.”

By grafting.—Stocks of the crab and apple are raised from kernels; but the Codling and Paradise stocks must be raised by cuttings and layers. Sow in autumn, in beds of light earth, moderately thick, in drills, covering them half an inch deep; they will come up in the spring, when, if the season proves dry, water them occasionally, which will greatly forward the seedlings, and strengthen their growth; and in the autumn, winter or spring following, they may be planted out in nursery rows, previously shortening their tap-roots, and planting them in lines two feet and a half apart, and one foot in the rows; and, after having grown from one to two or three years here, they will be fit for grafting, particularly if for dwarfs, or even for full and half standards, if it is intended to form the stem from the graft, which is an eligible method for these trees; but if the stock is to form the stem, they will require three or four years' growth to rise to a proper height; seven feet for full, and four or five for half standards. When these trees are intended for full-sized orchard standards, with strong stems, and the too common practice of pruning close all side-branches, as they spring from the stem, cannot be too strongly deprecated. A regular series of these should be left up the stem at least for one year after their production, practising what is termed “spurring in” by our nurserymen, at the first winter's pruning after their production. Indeed, in the second year, if any stout stems are required, we would only totally remove one-half; and instead of performing this operation in the winter, we would leave it until near midsummer; for recent wounds heal, and skin over much nicer at that period than during the season of rest.

Before quitting the subject of grafting, it may be well to offer a few plain directions. Presuming that stocks, duly cultivated and prepared, exist, the first thing is to provide scions; that is, a part of the kind intended to be grafted on the stocks. It is, and has been a maxim, for perhaps centuries, to procure

these long before what is termed the "rising of the sap," that is to say, during the resting season.

Such, then, being procured during the end of January or through February, they are "heeled;" that is, after being correctly labelled and tied in bundles, they are placed in the earth, in a cool and damp situation, where neither sun nor wind can penetrate. Here they lie until wanted. There appears to have been originally more than one reason for this procedure. A pressure of spring business, even in former days, would suggest this practice, and it would soon be discovered that these retarded scions possessed real advantages; the principle of which appears to be the certainty of nourishment the moment they are placed in the parent plant, or, at least as soon as their absorbing powers are fully in action, which will be the case in a day or two. The parent stock is thus much in advance of them; and a root-action has already commenced, which is capable of supplying their utmost need. The period of grafting is determined by the rising of the sap; and this is indicated, in deciduous trees, by the enlargement of the buds, which generally takes place in the early part of March, in Britain. We consider that the buds of the stock should be near bursting their skin before grafting should take place.

This, of course will differ, in different fruits, as differ their degrees of precocity. For details of the process, see **Grafting**.

By cuttings.—All the varieties may be raised in this mode, though some, as the Burr-knot, Codling, and June-eating, more readily than others. Trees so raised are said not to be so liable as their parents to canker. In February take cuttings of the young shoots from some of the horizontal branches, about eight inches long, cutting off a portion of the old wood of the branch attached to the shoot; remove all the buds except the upper three. Plant these firmly in sandy loam giving water, and covering with a hand-glass, until the cuttings have well vegetated. Shade from the midday sun; remove the hand-glass in July, and get the plants into the nursery early in November.

Soil.—The apple prefers a deep and strong, or adhesive loam. The colour is not so very material, providing such rests on a sound subsoil, free from water lodgments. If it is not so naturally, draining must be had recourse to, or it will be vain to expect success. They are nevertheless cultivated with con-

siderable success on any ordinary garden-soil; and even on soils of a peaty character we have known them to succeed tolerably well; but in the latter case, the peat must be previously solidified by drainage, culture, etc., for a few years, for we have never known them succeed on raw, elastic peats. Improved peats, indeed, will in due time approach the character of common, dark, garden-soils; and it becomes expedient for the apple to introduce both marl and clay, and also sand. Whenever a suspicion exists of an ungenial soil, the best plan is to plant on stations; which, indeed, is the best plan to adopt in all kitchen-gardens where the object is to get great variety in small compass or to induce early bearing. See article **Stations**.

Planting.—The soil should be trenched, and immediately beneath each tree, according to the extent of its roots, chalk, stones, or brickbats rammed so as to form a kind of pavement, to direct the roots horizontally. Plant so that the roots nearest the surface are twelve inches below it. See **Stations**.

Espaliers.—When first planted, the young plant is cut down to within about a foot of the ground, and only three shoots permitted to spring from it, one of which will be the leader, and the others will form the first or lower tier of bearing branches, which are to be secured to small stakes, so as to keep them in their proper places.

The following season the upright leader must be shortened to nine inches or a foot above the two horizontal branches, and deprived of all its shoots, excepting the three uppermost, which are to be treated the same as before. In this way the leading shoot is to be stopped at the requisite distance above the horizontal ones until it has reached the height of five feet. It is then cut off and no more allowed to grow upright, the whole strength of the tree being directed to the fruiting branches.

Espalier apple-trees should be planted at not less than twenty feet distance; but five and thirty feet is better, especially for trees grafted on Crab or Applestocks, which are free growers. For trees grafted on Codling or Paradise stocks, eighteen or twenty feet may be a sufficient distance. They should be planted with their heads entire, only removing any very irregular growths that do not range consistent with the intended form, and pruning any broken roots; as, also the points of immature wood. Let all the branches be trained horizontally to the right and left, an

equal number on each side, all at full length, five or six inches asunder; and, according as they shoot in summer, still continue them along entire. At the same time, train in a further supply of new shoots, to increase the number of horizontals or bearers; and thus continue increasing their numbers every year, till the espalier is regularly filled from the bottom to the top, preserving all the branches at full length, as far as the allotted space will admit.

They must have a summer and a winter pruning annually. In the summer cut out all the superfluous and ill-placed shoots of the year, and train regular ones towards the lower parts in vacant spaces, at least to remain till winter, some of which may then be wanted to fill some unforeseen vacancy, clearing out all others at this time as close as possible, and in winter, if any worn out or decayed parts appear, then is the time to retrench them, retaining young branches in their places, and if any vacancy occurs, retain some contiguous young shoot to fill it. Cut clean and close to the branches, still continuing all the branches, and any occasional supply of shoots at full length, as far as their limited bounds will allow; then train the whole regularly, tying them in as straight and close to the railing as possible, about six inches apart.

Standards, Half-Standards, and Dwarfs.—The standards having been trained in the nursery, with tolerably good heads, should be planted with those heads nearly entire, merely pruning away late growths, and occasionally shortening, to produce new shoots when desirable. If any are intended for the kitchen-garden, plant them at least forty feet apart; and, for a full plantation, to form an orchard, allow thirty feet distance every way.

Trim any broken or tap roots, but leave all the others entire.

As soon as planted, let every one be well staked, to support them firmly upright, and prevent them from being disturbed in rooting by winds.

Smaller-growing standards, such as Codlings and dwarfs upon Paradise stocks, may, if required, be planted at only twenty feet apart, or even less, though if there is room to allow a greater distance it will be of greater advantage.

Let them also, in future, advance with all their branches at full length, taking their own natural growth, and they will soon form numerous natural spurs in every part for bearing.

With respect to pruning these standards, very little is required, probably not more than once in three years, and then only the retrenching any very irregular, cross-placed bough, or reducing to order any very long rambler; or, when the head is become greatly crowded and confused, to thin out some of the most irregular growth, likewise all strong shoots growing upright in the middle of the head, and all dead wood and suckers from the stem and root. See **Pruning**, also **Station**.

Manuring old Apple-trees.—We generally see fruitful old trees starving by inches; few think of manuring them. The consequence is, not only premature decay in the tree, but a continual sacrifice in produce; and if there be a full crop, the apples either crack, or become corroded with a rusty fungus, under which circumstances they will lose, in a great degree, their keeping properties. The best way to deal with such cases is to strip away, at the end of October, six inches of the surface-soil, and to apply a coating of the very slutch of the manure-yard three or four inches in thickness; after which, the turf or some soil may be strewed over, to prevent the loss of its fertile properties. This, once in three years, accompanied by a rather severe thinning or pruning, will be found to renew the constitution of the tree in a very considerable degree; the fruit, also, will regain their size, their clear skin, and, of course, their keeping properties.

Diseases.—See **Canker**, **Russet**, and **Moss**.

Insects.—So impressed was Mr. Knight with the opinion, that of all our fruits none suffers more from insects than the Apple, that he declared his belief that these are a more frequent cause of the crops failing than frost. The figure-eight moth (*Dilo'ba cæruleoce'phala*), Linnaeus denominates the pest of Pomona, and the destroyer of the blossoms of the apple, pear, and cherry. He also mentions another (*T'inea cortice'lla*), as inhabiting apple-bearing trees under the bark. Reaumur has given us the history of a species common in this country, and producing the same effect, often to the destruction of the crop, the caterpillar of which feeds in the centre of our apples, thus occasioning them to fall. Even the young grafts are frequently destroyed—sometimes many hundreds in one night—in the nurseries about London, by the *Curculio vastator* of Marsham (*Otiory'nchus p'icipes*), one of the short-nouted weevils; and the foundation of canker, in full-grown trees, is often laid

by the larvæ of *Tema'sa Wæbera'na*. The sap, too, is often injuriously drawn off by a minute coccus, of which the female has the exact shape of a mussel shell (*Co'ceus arborum linearis*), and which Reaumur has accurately described and figured. But the greatest enemy of this tree, which has been known in this country since the year 1787, is the apple-aphis, called by some the coccus, and by others the American Blight. See **American Blight, Blight Yponomena, Anthonymus, Coccus, Psylla, Bostrichus, Scolytus and Acarus.**

Pyxida'nthera. (From *pyxis*, a box, and *anthera*, an anther; referring to its form. Nat. ord., *Diapensiaceæ*.)

This genus at present only contains *DIAPENSIA barbulate*. See that genus for culture.

P. barbulate. †. White or rose. June. New Jersey. 1861. B. M. t. 4592. Syn., *Diapensia barbulate*. Pine-barren Beauty.

Q.

Quaking Grass. *Bri'za*.

Qualea. (The name in Guiana. Nat. ord., *Vochysiaceæ*. 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. rosea. Violet. Brazil. 1824. Syn., *Q. violacea*.

Quamoclit. (From *kyamos*, a kidney-bean, and *klitos*, dwarf; resemblance of habit. Nat. ord., *Convolvulaceæ*; Tribe, *Convolvuleæ*.) This should have been united to *Ipomæa* under the specific names annexed. Allied to *Ipomæa*.

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.

GREENHOUSE CLIMBER.

Q. Nationis. Scarlet. Lima. 1864. B. M. t. 5432.

STOVE PERENNIAL TWINERS.

Q. globosa. 6. Scarlet. Mexico. 1827. Evergreen. *IPOMÆA HARTWEGII*.
— *grandiflora*. 6. Scarlet. Mexico. 1826. Evergreen. *IPOMÆA LLAYANA*.
— *longiflora*. 6. White. June. Cuba. 1808. Herbaceous. *IPOMÆA BONA-NOX*.
— *patula*. 6. Scarlet. Mexico. 1826. Evergreen.
— *sanguinea*. 10. Crimson. July. Santa Cruz. 1812. Evergreen. *IPOMÆA SANGUINEA*.

STOVE ANNUAL TWINERS.

Q. cocci'nea. 10. Scarlet. August. S. Amer. 1818. *IPOMÆA COCCINEA*.
— *digitata*. 10. Purple. September. W. Ind. *IPOMÆA DIGITATA*.

Q. hederifolia. 10. Violet. July. W. Ind. 1778. *IPOMÆA HEDERIFOLIA*.
— *lutecia*. 10. Orange, yellow. August. Guatemala. 1759. *IPOMÆA COCCINEA*.
— *phænicea*. Crimson. June. E. Ind. 1806. *IPOMÆA HEDERIFOLIA*, var. *PHENICEA*.
— *serotina*. Orange. July. Mexico. 1824. *IPOMÆA SEROTINA*.
— *triloba*. 10. Violet. July. S. Amer. 1752. *IPOMÆA TRILOBA*.
— *vulgaris*. Scarlet. September. E. Ind. 1629. *IPOMÆA QUAMOCCLIT*.
— *albiflora*. White. September. E. Ind. 1629.

Qua'qua. (The name given to this plant by the Hottentots, who eat the stems raw. Nat. ord., *Asclepiadaceæ*. Allied to *Boucerosia*.)

For cultivation, see *HOODIA*.

Q. hottentotorum. †. Yellow. Summer. Namaqualand. 1878.

Qua'ssia. (From the name of a slave (*Quassi* or *Coissi*), who first used the bark as a febrifuge. Nat. ord., *Simarubaceæ*.)

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 fibry peat. Winter temp., 55° to 65°; summer, 65° to 90°.

Q. amara. 20. Red. June. Guiana. 1790. B. M. t. 497. Syn., *Q. Simaruba*.

— *exco'tsa*. See *Simaruba exco'tsa*.

— *Simaruba*. See *Q. amara*.

Quebec Oak. *Que'rcus a'lba*.

Queen Lily. *Phædrana'ssa*.

Queen of the Meadows. *Spiræ'a Ulma'ria*.

Queke'ttia. (In honour of the late *E. J. Quekett, F.L.S.*, author of several works on vegetable anatomy. Nat. ord., *Orchidæ*; Tribe, *Vandæ-Oncidieæ*.)

Stove orchid, requiring the same culture as *PLEUROTHALLIS*.

Q. microscopica. †. 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 tinctoria*.

Que'rcus. The Oak. (From the Celtic *quer*, fine, and *cuez*, a tree. Nat. ord., *Cupulifereæ*; Tribe, *Quercineæ*.)

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. Japan. Evergreen. Syn., *Q. Buergeri*.

— *a'lbo-ne'rvis*. Leaves with white veins.

— *ro'seo-ne'rvis*. Leaves with red veins.

- Q. Eglops*. 20-50. Greenish-white. Levant. 1731. Syn., *Q. Ungerii*. *Eglops*, Vallonea, or Velani Oak.
- *latifolia*. Leaves broader than in the type.
- *pendula*. Branches pendulous.
- *agrifolia*. 20. California. 1849. Evergreen. Euceno Oak. Journ. Hort. Soc. vi. p. 158; Ic. Pl. t. 377.
- *alba*. 60. May. North America. 1724. American White Oak; Quebec Oak.
- *pinnatifida*. 60. Leaves deeply cut. May. North America. 1724.
- *repanda*. 60. Leaves with wavy (sinuate) margins. North America.
- *ambigua*. 60. May. North America. 1800.
- *angustifolia*. Japan. Evergreen.
- *apennina*. 40. May. South Europe.
- *aquatia*. 80. North America. Water Oak.
- *maritima*. 40. North America.
- *na'na*. 12. May. North America. 1738.
- *australis*. May. Portugal. 1835.
- *austriaca sempervirens*. See *Q. glandulifera*.
- *Baldota*. 60. May. South West Europe. Barbary Oak; Sweet Acorn Oak.
- *bambusaefolia*. See *Q. salicina*.
- *Bavistri*. See *Q. ilicifolia*.
- *bicolor*. 60. North America. 1800. Syn., *Q. Prinus*, var. *tomentosa*. Swamp White Oak.
- *Buergeri*. See *Q. acuta*.
- *calycina*. May. Europe.
- *castaneaefolia*. 60. Crimea. 1846.
- *Castellana*. May. Europe.
- *Catesbaei*. 15. May. N. Amer. 1823.
- *Cerris*. 50. May. South Europe. 1735. Wats. Dendr. ii. t. 92. Bitter, Mossy-cupped, or Turkey Oak.
- *austriaca*. 40. May. Austria. 1824.
- *ca'na ma'jor*. May. South Europe.
- *ca'na mi'nor*. May. South Europe.
- *crispa*. 60. Leaves crisped at the edges.
- *dentata*. See *Q. Cerris*, var. *subperennis*.
- *fulhamensis*. See *Q. Cerris*, var. *subperennis*.
- *Lucumbeana*. See *Q. Cerris*, var. *subperennis*.
- *pendula*. 50. Branches drooping. May. South Europe.
- *Ragnal*. 50. May. Ragnal.
- *subperennis*. 80. May. Syn., *Q. Cerris*, vars. *dentata*, *fulhamensis*, and *Lucumbeana*.
- *variegata*. 50. Leaves variegated. May. South Europe.
- *vulgaris*. 50. May. South Europe. 1735.
- *cinerea*. 20. May. North America. 1789. Syn., *Q. Prinus*, var. *cinerea*. Blue Jack; Upland Willow Oak.
- *coccifera*. 10. May. South Europe. 1683.
- *coccinea*. 50. May. North America. 1691.
- *conferta*. South East Europe. Syn., *Q. pannonic*.
- *Cookii*. Gibraltar. 1835.
- *crenata*. May. Portugal.
- *compressa* des. See *Q. pedunculata*, var. *fastigiata*.
- *cuspidata*. Japan. Evergreen.
- *angustifolia*. Japan.
- *latifolia*. Japan.
- *Da'mio pinnatifida*. 1858. Perhaps a form of *Q. dentata*.
- *dealbata*. May. Nepal. 1828.
- *densiflora*. California. 1865.
- *digita*. April. Europe.
- *Esculus*. 40. May. South Europe. 1739.
- *expa'na*. May. South Europe.
- Q. fagi'nea*. South Europe. 1824.
- *falcata*. 80. May. North America. 1768.
- *ferruginea*. See *Q. nigra*.
- *fruticosa*. See *Q. humilis*.
- *georgiana*. Leaves turning scarlet in autumn. Georgia. 1888.
- *gibba*. Japan. Evergreen.
- *glabra*. Japan. 1879. Evergreen.
- *glandulifera*. Japan. 1870. Syn., *Q. austriaca sempervirens* and *Q. Ilex*, var. *austriaca sempervirens*.
- *glauca*. 30. Japan. 1822. Of this there are the following named forms in gardens: *Q. glauca*, *Awoka'si caesia*, *Q. glauca Tsika'si lapidea*, and *Q. glauca Kuri-ka'si nigra*.
- *gramuntia*. See *Q. Ilex*.
- *Ha'sa*. Cilicia. 1870.
- *haliphle'os*. April. France.
- *hemisphaerica*. May. Mexico. 1816.
- *heterophylla*. 40. May. N. America.
- *Hivndsi*. California. 1865. Deciduous, and valueless as a timber tree.
- *humilis*. 1-12. Green. Portugal and Spain. 1874. Syn., *Q. ocymoides*, *Q. repens*, *Q. hybrida*, and *Q. fruticosa*.
- *hybrida*. See *Q. humilis*.
- *Ilex*. 60. May. South France. 1581. The Holm, or Evergreen Oak.
- *austriaca sempervirens*. See *Q. glandulifera*.
- *crispa*. 60. May. South France.
- *fugifolia*. 60. May. South France. 1781.
- *fastigiata*. See *Q. Ilex*, var. *Fordii*.
- *Fordii*. Pyramidal. Syn., *Q. Ilex*, var. *fastigiata*.
- *integrifolia*. 60. May. South France. 1581.
- *ilicifolia*. 60. May. South France. 1781.
- *longifolia*. Leaves long and narrow.
- *serratifolia*. Leaves serrate.
- *variegata*. Leaves variegated.
- *ilicifolia*. 6. North America. 1800. Bear or Black Scrub Oak.
- *imbricaria*. 40. June. North America. 1786.
- *inca'na*. 40. Nepal. 1818. Evergreen. Syn., *Q. lanata*.
- *infectoria*. Levant. 1812.
- *insignis*. 60. Mexico. 1846.
- *inversa*. See *Q. thalassica*.
- *lanata*. See *Q. incana*.
- *laurifolia*. 60. May. N. America. 1786.
- *hybrida*. 60. May. N. America. 1786.
- *laurina*. 30. Mexico. 1837.
- *Lezermiana*. May. South Europe.
- *libani*. 30. Syria. 1870. There is a variety (*Q. libani pendula*) with pendent branches.
- *lusitana*. 40. June. Portugal. 1824.
- *lu'tea*. 20. May. Mexico. 1825.
- *lyrata*. 15. May. N. America. 1786. Over-cup Oak; Water White Oak.
- *macrocarpa*. 40. N. America. Burr Oak; Mossy-cup White Oak.
- *maritima*. May. N. America. 1811.
- *montana*. See *Q. Prinus*.
- *myrtifolia*. A form of *Q. Phellos*.
- *nigra*. 20. May. North America. 1739. Syn., *Q. ferruginea*. Barren or Black Jack Oak.
- *obtusiloba*. See *Q. stellata*.
- *oboviformis*. A form of *Q. macrocarpa*.
- *palustris*. 60. May. North America. 1800. Pin Oak.
- *pannonica*. See *Q. conferta*.
- *pectinata*. See *Q. pedunculata*, var. *flicifolia*.
- *pedunculata*. 50-100. May. Britain. Eng. Bot. ed. 3, t. 1288.
- *Conco'dia*. Leaves golden-yellow.

- Q. pedunculata fastigiata*. Habit of Lombardy Poplar. Syns., *Q. cupressoides* and *Q. pyramidalis*.
 ——— *foliis variegatis*. 40. May. Britain.
 ——— *heterophylla*. May. Britain.
 ——— *Hodginsii*. May. Britain.
 ——— *pendula*. 70. May. Britain.
 ——— *pubescens*. 60. May. Britain.
 ——— *purpurascens*. May. Britain.
 ——— *variegata*. Leaves variegated with purple and white.
 — *Phellos*. N. America. 1723. Cork-tree; Willow Oak.
 ——— *cinearea*. See *Q. cinerea*.
 ——— *humilis*. 20. May. N. America.
 ——— *latifolia*. 60. May. N. America.
 ——— *maritima*. May. Virginia.
 ——— *sericea*. 2. May. N. America. 1724.
 ——— *sylvestica*. May. N. America. 1723.
 — *poetica*. Lazistan. 1891. Gf. 1891, p. 509, fig. 95.
 — *prasinata*. May. Spain. 1824.
 — *Prinus*. 60. June. N. America. 1730. Chestnut Oak.
 ——— *acuminata*. 80. May. N. America. 1822.
 ——— *monticola*. 60. May. N. America. 1730.
 ——— *palustris*. 90. N. America. 1720.
 ——— *pumila*. 4. May. N. America. 1823.
 ——— *tomentosa*. See *P. bicolor*.
 — *pseudococcifera*.
 Fontanensis. 30. May. Calabria.
 suber. 60. May. S. America. 1824.
 pseudosuber. 60. South Europe. 1824. Evergreen. Syn., *Q. Turneri*. Bastard Cork-tree; False Cork Oak.
 — *pumila*. 1. May. South Europe.
 — *pyramidalis*. See *Q. pedunculata*, var. *fastigiata*.
 — *pyrenaisca*. See *Q. Toza*.
 — *Quezigo*. Spain. 1845.
 — *Ravenscroftiana*. South America. 1866.
 — *reticulata*. 10. Mexico. 1840.
 — *Robur*. 100. Greenish. April. Britain. The Oak.
 — *rotundifolia*. June. Spain. 1818.
 — *rubra*. 40. May. North America. 1769. Champion or Red Oak.
 — *salicina*. 40. Japan. 1890. Evergreen. Syn., *Q. bambusifolia*.
 — *sclerophylla*. North China. 1850. Evergreen. See also *Q. glandulifera*.
 — *serrata*. 6. Japan. Evergreen. Japanese Silkworm Oak.
 — *sessiliflora*. 60. May. Britain. Eng. Bot. ed. 3, t. 1289.
 ——— *australis*. April. Portugal. 1835.
 ——— *cochlearia*. The leaves have their edges curled upwards.
 ——— *Falkenbergensis*. Hanover. 1837.
 ——— *Lonei*. Leaves long and narrow.
 ——— *macrocarpa*. 60. May. Britain.
 ——— *pendula*. Branches drooping. Garden variety. 1887.
 ——— *pubescens*. 40. May. Britain.
 ——— *rubicunda*. Leaves deep red.
 ——— *sempervirens*. Japan. 1862.
 ——— *setifera*. Japan. Evergreen.
 ——— *Skinneri*. Mexico. 1841.
 ——— *stellata*. 50. North America. 1819. Syn., *B. obtusifolia*.
 — *striata*. Leaves yellow, the course of the veins picked out with green. Japan. 1871. There is also a variety (*japonica*) with variegated leaves.
 — *Suber*. 20. May. Spain. 1581. Cork-tree; Cork Oak. The cork of commerce is furnished by this tree.
 ——— *angustifolium*. 30. June.
 ——— *dentalium*. 50. June.
 ——— *latifolium*. 40. June.

- Q. Suiber tinctoria*. 70. May. N. America.
 ——— *angulosa*. 70. May. N. America.
 ——— *sinuosa*. 70. May. N. America.
 — *thalassica*. China. 1850. Evergreen. Syn., *Q. inversa*.
 — *tinctoria*. 80. United States. 1800.
 — *Toza*. 4. May. South Europe. 1824. Syn., *Q. pyrenaica*.
 — *Turneri*. See *Q. pseudosuber*.
 — *Ungerii*. See *Q. Egilops*.
 — *virens*. 40. May. North America. 1739. Evergreen. Live Oak.

Quesnelia. (After *M. Quesnel*, once French Consul at Cayenne. Nat. ord., *Bromeliaceae*; Tribe, *Bromeliaceae*. Closely allied to *Billbergia*.)

Stove herbs, requiring the same treatment as *BILLBERGIA*.

- Q. cayennensis*. 6-8. Bracts red; flowers blue. violet. South America. Syns., *Q. rufo* of Belg. Hort. 1882, p. 115, t. 46, and *Billbergia Quesneliana*, Fl. Ser. t. 1028.
 — *columbiana*. 1. Violet. March. Columbia. 1882. Syn., *Ronnbergia columbiana*, Belg. Hort. 1885, p. 82.
 — *Enderi*. 2. Violet. South Brazil. Gf. 1888, p. 195, t. 41-43. Syn., *Billbergia Enderi*, Gf. t. 127.
 — *roseo-marginata*. See *Q. rufo*.
 — *rufo*. 14. Bracts rose; flowers blue. January. Tropical America. 1880. Syns., *Q. roseo-marginata*, *Q. Skinneri*, *Billbergia roseo-marginata* and *Lievena princeps*. Gf. t. 1024. See also *Q. cayennensis*.
 — *Selloana*. 1. Violet. South Brazil.
 — *Skinneri*. See *Q. rufo*.
 — *strobilifera*. 2. Violet. South Brazil. 1885. Syn., *Billbergia Glazioviana*. Gf. t. 1203.
 — *Va'n Houttei*. 2. Violet. South Brazil. 1878. Belg. Hort. 1881, pp. 163 and 350, t. 18.
 — *Wittmackiana*. 3. Blue. South Brazil? 1883. Gf. t. 1281, fig. 2.

Quickset, the same as the Hawthorn, or Whitethorn, *Crataegus oxyacantha*. See **Hedge**.

Quilla'ja. (From *quillai*, the Chilean name. Nat. ord., *Rosaceae*; Tribe, *Quillajaceae*. 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. saponaria*. White. April. Chili. 1832. Syn., *Q. Molinae*.

Quina, Quinquina, or Quino. *Cincho'na*.

Quince. *Cydonia vulgaris*.
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 six 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 put in in autumn or early spring. Choose young wood for the cuttings and layers. They will be rooted by next autumn; then transplant into nursery rows two feet apart. 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 three to six 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 planted 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 fifteen feet apart. For other particulars of culture, see **Pear**.

Quince, Bengal. *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, as in this diagram :



Quinine. A product of several species of *Cinchona*.

Quinsy-berry. *Ribes nigrum*.

Quisqualis. (From *quis*, who, and *qualis*, what kind; when first named it was doubtful to which class and order to refer it. Nat. ord., *Combretaceæ*. Allied to *Combretum*.)

Stove climbers. 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. glabra. See *Q. indica*.

— *indica*. 20. Orange, red. June. Tropical Asia and Africa. 1815. B. M. t. 2033.

Slight forms of this are *Q. glabra*, *Q. pubescens*, *Q. sinensis* and *Q. villosa*.
Q. pubescens. See *Q. indica*.
 — *sinensis.* B. R. 1844, t. 15. See *Q. indica*.
 — *villosa.* See *Q. indica*.

Quivisia. (*Bois de Quivi*, of the natives of the Isle of France. Nat. ord., *Meliaceæ*. Allied to *Melia*.)

Stove evergreen tree. Cuttings of ripened shoots in sand, under a glass, and in a brisk bottom-heat; sandy loam and fibry peat. Winter temp., 48° to 55°; summer, 60° to 85°.
Q. heterophylla. 16. White. Mauritius. 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. *Raphanus sativus*.

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 of more or less merit.

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 pulverized. 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 the more preferable mode. In either case it must be sown thin, and buried a quarter of an inch deep. Thick sowing causes the tops to be large, and the roots sticky.

If broadcast, the beds should be laid

out four or five 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 three inches asunder, for the turnip-rooted four or five, and for the Spanish, etc., six or eight.

When the seedlings are well up, and advanced to five or six leaves, they are ready for thinning; the spindle-rooted to three inches apart, the turnip-rooted to four, and the larger varieties to six. 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, etc., should be kept constantly covered with dry straw or fern, to the depth of about two 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, etc.

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, three 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, com-

pared 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 eight 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 two 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. *Anthomyia florum*.

Rafnia. (Named after *C. Rafn*, a Danish botanist. Nat. ord., *Leguminosæ*; Tribe, *Genistææ*. 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 fibry loam, kept rough by pieces of charcoal and broken pots, and drainage well attended to. Winter temp., 40° to 48°.

R. amplexicaulis. 4. July. 1816. Syn., *Vascoa amplexicaulis*.

— *angulata*. 2. May. 1816. Syn., *R. filifolia*.

— *cordata*. 2. May. 1821.

— *cuneifolia*. 2. Yellow, purple. June. 1816.

— *elliptica*. 1-3. June. 1819.

— *filifolia*. See *R. angulata*.

— *laevica*. 2. June. 1823.

— *perfoliata*. 4. July. 1812. Syn., *Vascoa perfoliata*.

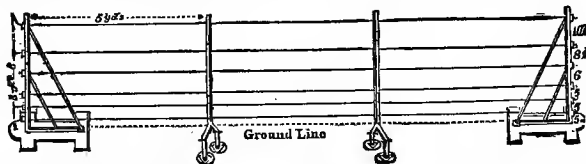
— *triflora*. 2-4. June. 1794. B. C. t. 611. Syn., *Crotalaria triflora*. B. M. t. 482.

Ragged Robin. *Lychnis Flos-cuculi*.

Rags. See Vegetable Manures.

Ragwort. *Oth'onna* and *Sen'e'cio Jacobæ'a.*

Railing is of various forms, but all, if made of wood, soon decay if slight, and are clumsy and inelegant if strong. Iron railing is at once light, neat, and enduring, and, like the following, may be erected for about 2s. per yard.



Raillia'rdia. (In honour of M. Raillhard. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*.)

Greenhouse evergreen. For cultivation, see BEDFORDIA.

R. ciliola'ta. Yellow, crimson. Sandwich Islands. 1865. B. M. t. 5517.

Rain Berry. *Rha'mnus catha'r'ticus.*

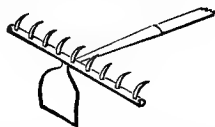
Rain Tree. *Pithecolo'bium sa'man.*

Rainbow Flower. *I'ris.*

Raisin Tree, Japanese. *Hove'nia du'lcis.*

Raja'nia quina'ta. A synonym of *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 six inches long, are required for dressing flower-borders, but for open ground-work the length may be fifteen 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., *Gesneraceæ*; Tribe, *Cyrtandreaæ*. Allied to *Streptocarpus*.)

Hardy herbaceous perennials. Seeds and divi-

sions in spring; sandy loam and a little peat; a sheltered place, or kept in a pit, in winter, as an alpine.

R. pyrena'ica. †. Purple. May. Pyrenees. 1731. Syn., *Verbascum Myconi.* B. M. t. 236.

— *se'r'vica.* Yellow. Thessaly. Syn., *Jankæa Heldreichii.*

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 six 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 during the evening.

They are fit for thinning when about two inches in height, and they must be set at a distance of six 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., *Rubiaceæ*;

Tribe, Gardeniæ. 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, fibry loam and fibry peat, with a few nodules of charcoal. Temp., when at rest in winter, 45° to 50°; when growing in spring or summer, 80° to 80°.

- R. acuta* ta. 12. White. July. W. Indies. 1733. Syn., *Gardenia Randia*. B. M. t. 1841.
- *armata* ta. 7. White. May. W. Indies. 1813.
- *Bowieana*. B. M. t. 3809. See *R. macrantha*.
- *dumetorum*. 5. White, yellow. July. E. Indies. 1824. Syn., *Posoqueria dumetorum*.
- *fasciculata* ta. 4. White. July. E. Indies. 1824.
- *floribunda* ta. 4. July. E. Indies. 1825.
- *horrída* ta. 8. May. China. 1825.
- *latifolia* ta. 7. July. W. Indies. 1733.
- *longiflora* ta. 4. August. E. Indies. 1818. Syns., *Gardenia longiflora* and *Posoqueria multiflora*.
- *macrantha* ta. 5. Cream-coloured. August. Sierra Leone. 1596. Syns., *R. Bowieana* and *Gardenia Devoniana*. B. R. 1846, t. 63.
- *maculata* ta. White. April. Sierra Leone. 1843.
- *malabarica* ta. India. Syn., *Posoqueria fragrans*.
- *malleifera* ta. 6. White. July. Sierra Leone. 1843. Syns., *Gardenia malleifera*, B. M. t. 4307, *G. octomeria*, B. M. t. 5410, and *G. Whitefieldii*.
- *obovata* ta. 6. May. New Grenada. 1818.
- *oxyptala* ta. Yellowish. May. Saharanpoor. 1843.
- *parviflora* ta. 4. August. W. Indies. 1818.
- *pubescens* ta. 5. July. Peru. 1820.
- *rotundifolia* ta. 6. July. Peru. 1820.
- *sinesis* ta. 5. July. China. 1818.

Rantry, The Mountain Ash. *Pyrrhus aucuparia*.

Ranunculus. Crowfoot. (From *rana*, a frog; some of the species inhabiting marshy places. Nat. ord., *Ranunculacæ*; Tribe, *Ranunculeæ*.)

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. *R. asiaticus*, 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. Chrys.* ½. June. Archipelago. 1827.
- *philonotis* ta. ½. July. South Europe. 1800.
- *sessiliflorus* ta. ½. June. Australia.
- *triflorus* ta. ½. June. Greece. 1816.
- *tuberculatus* ta. 1. June. Tauria. 1817.
- *uliginosus* ta. ½. June. Teneriffe. 1826.
- *ventricosus* ta. ½. July. Brazil.

HARDY AQUATICS.

- R. obtusiflorus* ta. 1. White. June. England.
- *pa'notheria* ta. White. June. Britain.
- *fluvialis* ta. White. June. Britain.
- *polyphyllus* ta. ½. April. Hungary. 1819. Annual.

R. tripartitus ta. White. June. Europe.

GREENHOUSE HERBACEOUS.

- R. geranioides* ta. May. Mexico. 1836.
- *lappaceus* ta. 1. June. Australia. 1822.
- *plebeius* ta. 1. June. Australia. 1820.

HARDY EVERGREENS.

- R. filiflorus* ta. 1. June. N. America. 1823. Creeper.
- *lappaceus* ta. ½. May. Lapland. 1827.

HARDY TUBEROUS-ROOTED.

- R. angulatus* ta. 1. Naples. 1832.
- *asiaticus* ta. ½. Variegated. May. Levant. 1596. Sibth. Fl. Gr. t. 518.
- *sanguineus* ta. ½. Scarlet. May. Syria.
- *tenuiflorus* ta. ½. White. May. Greece.
- *bracteatus* ta. May. Pyrenees.
- *floropleno* ta. May.
- *ochroleucus* ta. Pale yellow. August. England.
- *breviflorus* ta. ½. June. Naples. 1824.
- *Buchanani* ta. ½. 1. Pure white. New Zealand. 1890.
- *bullatus floropleno* ta. 1. May. South Europe. 1640.
- *grandiflorus* ta. 1. May. South Europe. 1640.
- *chærophyllus* ta. 1. May. Portugal.
- *cicutarius* ta. 1. May. Siberia. 1818.
- *cortusæfolius* ta. 1. May. Teneriffe. 1826. See also *R. grandifolius*.
- *creticus* ta. 1. May. Candia. 1658.
- *fumariæfolius* ta. 1. May.
- *garganicus* ta. ½. August. Naples. 1832.
- *gracilis* ta. ½. May. Archipelago. 1818.
- *grandiflorus* ta. 1. May. Teneriffe. Syn., *R. cortusæfolius*. B. M. t. 4625.
- *gregarius* ta. 1. May. Italy. 1817.
- *hybridus* ta. ½. May. Austria. 1820.
- *illyricus* ta. ½. May. South Europe. 1596.
- *macrophyllus* ta. 2. May. Teneriffe. 1658. B. R. t. 1432.
- *millefolius* ta. May. Sicily. 1820. B. M. t. 3009.
- *grandiflorus* ta. ½. April. Naples. 1833. Swt. Fl. Gard. ser. 2, t. 248.
- *monspeliacus* ta. 1. May. South France.
- *cuneatus* ta. 1. May. South Europe.
- *rotundiflorus* ta. 1. May. South Europe.
- *oxyspermus* ta. 1. Pale yellow. May. Caucasus. 1822.
- *pedatus* ta. 1. May. Hungary. 1805. B. M. t. 2229.
- *scutellatus* ta. ½. May. Hungary. 1817.
- *thoræ* ta. ½. May. Austria. 1710.
- *tuberosus* ta. 1. June. Pyrenees. 1820.

HARDY HERBACEOUS.

- R. aconitiflorus* ta. 1. White. May. Alps, Europe. 1596. B. M. t. 204.
- *crassicaulis* ta. 1. White. May. Europe.
- *humilis* ta. ½. White. May. Europe.
- *acris pleenus* ta. 2. June. Britain. B. M. t. 215.
- *alpestris* ta. ½. White. July. Scotland.
- *amplexicaulis* ta. 1. White. May. Pyrenees. 1833. B. M. t. 266.
- *anemonoides* ta. ½. White tinged with rose. Summer. Styrian Alps. 1833.
- *angustiflorus* ta. 1. White. May. Grenada. 1822.
- *apiflorus* ta. 2. White, red. June, Bonaria. 1816.
- *arcticus* ta. July. N. America. 1827.
- *auricomus* ta. ½. May. Britain.
- *bonariensis* ta. ½. June. N. Amer. 1817.
- *brevicaulis* ta. May. N. America. 1827.
- *Breyntianus* ta. June. Switzerland. 1818.
- *Bruttianus* ta. ½. May. Italy. 1823.
- *vulpeuroides* ta. 1. May. Portugal. 1826.
- *cardiophyllus* ta. May. Canada. 1829. B. M. t. 2999.

- R. cassu'bicus*. 2. June. Siberia. 1794. B. M. t. 2267.
 — *cauca'sicus*. 1½. June. Caucasus. 1820.
 — *crassicaul'tis*. 1. June. Europe. 1827.
 — *crena'tus*. ¾. White. June. Hungary. 1818.
 — *cymbala'ria*. ¼. June. Siberia. 1824.
 — *dise'ctus*. ¾. June. Caucasus. 1818.
 — *Eschschol'tzii*. May. N. America. 1827.
 — *fascicula'ris*. 1. June. N. America.
 — *Ficaria*. Yellow. May. Britain. Eng. Bot. ed. 3. t. 39. Syns., *Ficaria ranunculoides* and *F. verna*.
 — *fri'gidus*. ¾. Pale yellow. May. South Europe. 1827.
 — *glaberrimus*. May. N. America. 1827.
 — *glacia'lis*. ¾. White. July. Lapland. 1775.
 — *acomitoi'des*. ¾. White. July. Switzerland. 1819.
 — *Goud'ni*. 1. June. Pyrenees. 1818.
 — *grami'neus*. 1. May. Wales. B. M. t. 164.
 — *sto're-pl'e'no*. 1. May.
 — *phanicifol'ius*. 1. May. Europe.
 — *grandiflor'us*. ¾. May. Cappadocia.
 — *Heldreichia'nus*. 1. Pale chrome yellow. Spring. Greece. 1832.
 — *hi'rtus*. 1. June. New Zealand. 1820.
 — *hi'spidus*. 1½. June. N. America. 1810.
 — *hyperbo'reus*. ¾. June. North Europe. 1820.
 — *isopyro'i'des*. ¾. White. June. Siberia. 1818.
 — *la'cerus*. ¾. White. May. South France. 1821.
 — *lanuginos'us*. 1. June. South Europe. 1683.
 — *li'ngua*. 2. July. Britain.
 — *monta'nus*. ¾. June. Lapland. 1775.
 — *nappelfol'ius*. 1. July. Turkey. 1822.
 — *memoros'us*. 1. June. Switzerland. 1810.
 — *niv'a'lis*. ¾. July. Lapland. 1775.
 — *parnassifol'ius*. ¾. White. June. South Europe. 1769. B. M. t. 386.
 — *pauciflor'us*. 1. June. Switzerland. 1819.
 — *pedati'fidus*. 1. April. Siberia. 1827.
 — *plantagi'neus*. 1. White. May. Piedmont. 1819.
 — *platensifol'ius*. 3. White. June. Germany. 1769.
 — *sto're-pl'e'no*. 1. White. May. Alps. 1596.
 — *Pu'rshii*. July. N. Amer. 1827.
 — *pygma'us*. ¾. April. Lapland. 1810.
 — *pyrene'us*. 1. White. May. Pyrenees. 1807.
 — *bupleurifol'ius*. ¾. White. June. Pyrenees. 1818.
 — *recurva'tus*. June. N. Amer. 1827.
 — *repens sto're-pl'e'no*. ¾. July.
 — *rhomboid'eus*. April. N. Amer. 1825.
 — *ru'fus*. July. Portugal. 1825.
 — *rutafol'ius*. ¾. White. June. Austria. 1759.
 — *Sabi'ni*. July. N. Amer. 1827.
 — *salsuginos'us*. 1. April. Siberia. 1822.
 — *Seguie'ri*. ¾. White. June. Piedmont. 1819. Gf. t. 1192. fig. 1.
 — *spica'tus*. 1. Yellow. April. Algiers. 1850. B. M. t. 4585.
 — *Stev'e'ni*. 1½. June. Volhinia. 1819.
 — *tomentos'us*. 1. June. N. Amer. 1820.
 — *Villa'rsi*. 1. June. South Europe. 1819.

COOL GREENHOUSE.

- R. Lya'llii*. 2-3. White. Spring and Summer. New Zealand. 1879. A very handsome plant. G. C. 1881, xv. p. 724. New Zealand Water Lily.

Ranunculus (*R. asiaticus*) 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 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 fifteen inches: if wet, ten inches will do. Put in a layer of very rotten cow-dung, two inches thick; then bring the soil, put in a layer of four inches, upon that put a layer of rotten hotbed dung one inch thick, and so proceed till the bed is full, and raised two or three inches above the surface. Let the bed be edged with boards or slates. Hoop it over, to protect it from heavy rain, snows, and hailstones. 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, two inches deep; draw the next five 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 blacklead-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 four 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 four 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 plant that the soil about it 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, etc., 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 eighteen inches by eleven inches and four 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.

Rapate'a pandanoides. See *Saxofredericia subcordata*.

Rape, or Coleseed (*Bra'ssica napus*). 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 eighteen 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, formerly 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 two 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, etc.

Ra'phanus. Radish. (From *ra*, quickly, and *phainomai*, to appear; rapid germination of the seeds. Nat. ord., *Cruciferae*; Tribe, *Raphanaceae*.)

Hardy annuals. Seeds; rich, sandy soil; but for standing the winter it should be dry and poor. See RADISH.

R. arcuatus. See *Chorispora tenella*, var. *arcuata*.

— *caudatus*. 1½. White, purple. July. Java. 1815.

— *isatoides*. Yellow. Garden variety. 1886. Rev. Hort. 1886, p. 372, fig. 101.

— *Ladra*. 3. Yellow. June. Italy. 1820. Biennial.

R. sativus. 3. White, purple. May. China. 1648.

— *tenellus*. See *Chorispora tenella*.

Raphia. (Probably from the native name of the West African species. Nat. ord., *Palmeae*; Tribe, *Lepidocarpaceae*.)

Stove palms. See COCOS.

R. Rufia. 60. Madagascar.

— *tedd'gera*. Posa. 1847.

— *vinifera*. W. Africa.

Raphido'phora. (From *raphis*, a needle, and *phero*, to bear; on account of the needle-like hairs, which abound in the intercellular spaces in all parts of the plants. Nat. ord., *Aroidae*; Tribe, *Callae*. Allied to *Monstera*.)

Stove climbing evergreen perennials. Seeds; cuttings in sandy loam and peat in bottom-heat and under a band-glass. Rich loam and fibrous peat, about half and half. They do best when planted in a border, and allowed to climb up the dead stem of a tree or a wall. Moist atmosphere. Summer temp., 70° to 90°; winter, 65° to 75°.

R. decursiva. Yellowish. India. 1859.

— *lancifolia*. Spathe apricot colour, green-spotted; spadix white. India. 1874.

— *Pee'pla*. Yellow. E. Indies.

— *pertusis*. E. Indies.

Raphiole'pis. Indian Hawthorn. (From *raphis*, a needle, and *lepis*, a scale; formation of the bracts. Nat. ord., *Rosaceae*; Tribe, *Pomeae*. Allied to *Cratægus*.)

Half-hardy, white-flowered, evergreen shrubs from China. Cuttings of half-ripened shoots in sandy loam, in a sheltered place, under a band-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. indica. White, pink. June. 1806.

— — *phacostemon*. 4. June. 1818. Syn., *R. indica* of B. R. t. 468.

— — *rubra*. 15. Reddish. June. 1806. Syn., *R. rubra*. B. R. t. 1400.

— — *salicifolia*. 3. June. 1820.

— *japonica integririma*. White. Japan. 1865. B. M. t. 5510.

— *rubra*. See *R. indica*, var. *rubra*.

— *salicifolia*. B. R. t. 652. See *R. indica*, var. *salicifolia*.

Raphiste'mma. (From *raphis*, a needle, and *stemma*, a crown. Nat. ord., *Asclepiadaceae*; Tribe, *Cynancheae*.)

A stove climber. For cultivation, see STEPHANOTIS.

R. cilium. B. M. t. 5704. See *Dæmia extensa*.

— *pulchellum*. White, pink. July. E. Indies. 1852. Paxt. Mag. xiv. p. 27.

Raspai'lia. (Named after *M. Raspail*, a French botanist. Nat. ord., *Bruniaceae*. Allied to *Brunia*.)

Greenhouse evergreen. Cuttings of young, stubby shoots in sand, under a bell-glass, and in a cold frame; sandy, fibry peat. Winter temp., 40° to 48°.

R. microphylla. 1. White. July. Cape of Good Hope. 1804. A synonym of *BERARDIA MICROPHYLLA*.

Raspberry. *Rubus idæus.*

Varieties.—The most useful are as follows:—1. Red Antwerp; 2. Yellow Antwerp; 3. Fastolf, or Filby; 4. Double-bearing. 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. Mr. Rivers, of Sawbridgeworth, has a new variety of this 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 colonize. 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, four feet apart from centre to centre; and the rows, if side by side, six feet apart. As soon as the leaf drops, say the beginning of November, we would prune one strong cane to three feet, a second to two feet, and a third to within a couple or three 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 hot-bed would hurry the process much. The seedlings must be pricked out when three 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 five 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 alluvial 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.

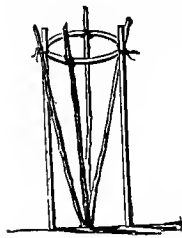
If they have not been mulched, it should be done immediately. As soon as the last fruit is gathered, the old bearing shoots may be cut clean away, and the young canes drawn a little closer together. When over five feet in height, the tops may be pinched; this, however, should not be done before the end 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 four feet; the next about nine 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 this form. But in the open ground the best mode of train-



ing is round small hoops, thus. 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, the bearing canes being introduced inside it, and trained to a trellis, whilst the present year's shoots are left outside.

Raspberry Moth. *Lampro'nia rubie'lla*. The larva of this pretty little moth sometimes plays sad havoc in Raspberry beds, by feeding upon the buds and thereby destroying the crop of fruit. The caterpillar is about one-third of an inch in length, of a scarlet colour, with a black head marked with pale lines. When first hatched from the egg, which takes place in August, it feeds upon the foliage for a time, and then crawls to some place of concealment and hibernates. In the spring it comes out again, and commences to attack the young flowering shoots, feeding inside the flowering buds, and finally destroying the inside tissue of the young shoot. When full fed, it spins a cocoon among the withered leaves, and there changes to a brown chrysalis, from which the moth emerges in the course of two or three weeks.

The moth is about half an inch in expanse: the fore wings are shining brown, with five or six golden spots along the front margin of each, and two larger ones on the inner margin, with a few smaller ones on the middle part of the wing; the hind wings are dark brown.

The best method of getting rid of this insect is to hand-pick and destroy the attacked shoots in the early part of June. If this be done thoroughly, although the year's crop will be destroyed, yet that for the following year will probably be saved. The attacked shoots may be known by their withered, unhealthy appearance.

Rattlesnake Fern. *Botry'chium virg'nicum*.

Rauwo'fia. (Named after *L. Rauwolf*, *M.D.*, a botanical traveller. Nat. ord., *Apocynaceæ*; Tribe, *Plumierieæ*. 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, fibry loam, fibry peat, a little dried leaf-mould, and pieces of charcoal. Winter temp., 50° to 60°; summer, 60° to 88°.

- R. cane'scens*. 7. Pink. Jamaica. 1759.
— densifl'ora. 6. White. June. E. Indies. 1824. Syn., *Tabernæmontana densiflora*. B. R. t. 1273.
— majus. 4. White. April. Java. 1850. Syn., *Ophioxylon majus*.
— n'rtida. 12. White. August. Spain. 1752. B. C. t. 339.
— serpenti'na. 1. White or pink. May. East Indies. 1690. Syn., *Ophioxylon serpentinum*.
— spino'sa. Yellow. June. Peru. 1827.
— ternifl'ora. 3. White. May. W. Ind. 1823. B. M. t. 2440.
— tomento'sa. 3. White. July. W. Ind. 1823.

Ravena'la. (From the Malagasy name. Nat. ord., *Scitamineæ*; Tribe, *Museæ*. Syns., *Phenakospermum* and *Urania*.)

Large stove plants, requiring the same culture as *MUSA*.

- R. guiane'nsis*. 15. White. Brazil and Guiana. 1848. Syn., *Phenakospermum guianense*. III. Hort. 1860, p. 239.
— madagascarie'nsis. 15. White. Madagascar. Fl. Ser. t. 1355. Syns., *Urania madagascariensis*, *U. Ravenala* and *U. speciosa*.

Ravene'a. (Named after *Louis Ravené*, a zealous promoter of horticulture at Berlin. Nat. ord., *Palmeæ*.)

A slender greenhouse palm, of doubtful affinity, with the habit of a *CHAMÆDORA*, to which refer for cultivation.

- R. Hildebra'ntii*. 12. Comoro Islands, at an altitude of 4,000 feet. 1878.

Rave'nia. (Derivation not explained. Nat. ord., *Rutaceæ*; Tribe, *Cusparieæ*.)

Stove evergreen shrubs. Cuttings of half-ripe shoots in sand, under a bell-glass, in bottom-heat; sandy peat and fibry loam. Summer temp., 60° to 85°; winter, 50° to 60°.

- R. ro'sea*. 2. Rose-red. Summer. Brazil. 1890.
— spect'abilis. 2. Deep rose. July. Cuba. 1839. Syn., *Lemonia spectabilis*.

Ravensa'ra. (From the Malagasy *raven*, leaf, and *sara*, good; the leaves have a strong odour of cloves. Nat. ord., *Laurineæ*. Syn., *Agathophyllum*.)

Stove evergreen tree. Peat, and light rich loam; cuttings.

- R. aroma'tica*. 30. White. Madagascar. 1823. Syn., *Agathophyllum aromaticum*

Rea'na. (After *Mr. Rea*. Nat. ord., *Gramineæ*; Tribe, *Mozdeæ*.) See **Euchlæna**.

- R. luxur'ians*. See *Euchlæna luxurians*. B. M. t. 6414.

Reaumur'ria. (Named after *A. Reaumur*, the French entomologist. Nat. ord., *Tamariscineæ*; Tribe, *Reaumurieæ*.)

Half-hardy evergreens. Cuttings from young shoots in sand, under a glass; sandy, fibry loam, fibry peat, and leaf-mould; dry soil in sheltered places; but generally requires a cold pit in winter.

R. hypericoides. 2. Purple. August. Syria. 1800. B. M. t. 2057. Syn., *P. tinifolia*.

— *vermiculata*. 1. Pink. June. Sicily. 1828. A form of *R. hypericoides*.

Red Bay. *Laurus carolineensis*.

Red Cedar. *Juniperus virginiana*.

Red Gum-tree. *Eucalyptus resinifera*.

Red Nightshade. *Erica halimifolia*.

Red Spider. See **Acarus**.

Reevesia. (Named after J. Reeves, Esq., of Canton. Nat. ord., *Sterculiaceæ*; Tribe, *Helicteræ*. Allied to *Helicteres*.)

Greenhouse evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass; fibry loam, and a little sandy peat. Winter temp., 40° to 48°.

R. thyrsoidea. 4. White. January. China. 1826. B. R. t. 1236; B. M. t. 4199.

Regelia. (Named after M. Regel, the superintendent of the Imperial Botanical Gardens at St. Petersburg. Nat. ord., *Myrtaceæ*; Tribe, *Leptospermeæ*. Allied to *Beaufortia*.)

Greenhouse hard-wooded shrub. For cultivation, see **BEAUFORTIA**.

R. ciliata. 5. Red. W. Australia. 1874. — *magnifica*, *majestica* and *princeps*, are synonyms of *VERSCHAFFELTIA splendida*, a palm.

Rehmannia. (In honour of Joseph Rehnmann, a Russian physician at the commencement of the nineteenth century. Nat. ord., *Scrophularineæ*.)

Hardy, perennial herbs. Propagated by cuttings.

R. chinensis. B. M. t. 3653. See *R. glutinosa*. — *glutinosa*. 1-2. Dingy purple. April. North China. 1835. Syn., *R. chinensis*. B. R. t. 1960.

— *rupesstris*. 1½. White, tinged with rose. July. Western China. 1890.

Reidia, is a section of the genus **Phyllanthus**, under which the species are placed.

Reineckea. (Commemorative. Nat. ord., *Liliaceæ*; Tribe, *Convallariæ*. Allied to *Convallaria*.)

R. carnea. ½. Flesh. Spring. Japan, China. 1792. Syns., *Sansevieria carnea*, Andr. Rep. t. 361, and *S. sessiliflora*, B. M. t. 939.

— *variegata*. Leaves white-striped. 1862. Ill. Hort. t. 323.

Reinwardtia of Dumortier. (In honour of K. G. K. Reinwardt, director of the Botanic Garden of Leyden, 1773-1822. Nat. ord., *Lineæ*.)

Greenhouse or stove shrubs. Cuttings in a close frame in April or May.

R. tetragynum. Yellow. India.

— *trigynum*. 2. Yellow. October. 1799. Syn., *Linum trigynum*. B. M. t. 1100.

Relhania. (Named after B. Relhan, a botanical author. Nat. ord., *Compositæ*; Tribe, *Inuloidæ*.)

Greenhouse evergreen shrubs. Cuttings of firm young side-shoots in sand, under a bell-glass, in a cool frame, in June; sandy loam and fibry peat. Winter temp., 40° to 48°. There are several species besides the following:

R. pungens. Yellow. September. South Africa. 1820. B. R. t. 587.

— *squarrosa*. 1½. Yellow. May. Cape of Good Hope. 1774.

Remigia. (After *Remigio*, an Italian surgeon. Nat. ord., *Rubiaceæ*.)

Stove shrub. Cuttings.

R. pedunculata. Pinkish. Brazil. 1839. Gard. 1889, xxxv. p. 343.

Remusatia. (After *Abel Remusat*, a celebrated physician and orientalist, 1785-1832. Nat. ord., *Aroideæ*.)

Stove, tuberous herb. For culture, see **CALADIUM**.

R. vivipara. 2. Green. May. East Indies. 1817. Syn., *Caladium viviparum*. B. C. t. 281.

Renanthera. (From *ren*, a kidney, and *anthera*, a pollen-bag, or anther; shape of anthers. Nat. ord., *Orchideæ*; Tribe, *Vandæe-Sarcantheæ*.)

Stove orchids, grown in pots. See **ORCHIDS**.

R. arachnites. 1. Brown, purple. Japan. 1793. A synonym of *Arachnanthe moschifera*.

— *coccinea*. 8. Scarlet, orange. August. Cochin-China. 1816. B. M. t. 2997-8. Chinese Air Plant.

— *elongata*. Purplish. Kuripan. — *floræris*. A synonym of *Arachnanthe moschifera*.

— *histrionica*. Yellow, purplish, white. Malacca? 1873.

— *Imchootiana*. Red and yellow. 1891.

— *Loewii*. B. M. t. 5475. A synonym of *Arachnanthe Lowii*.

— *matuliana*. Blood-red, yellow, deep purple. December. Java. 1843. B. R. 1843, t. 41.

— *breviflora*. Sunda Isles. 1879.

— *molucaana*. Red. Amboyna. 1866.

— *Rohania*. Yellow, crimson. Borneo. 1879.

— *Sturiet*. Yellow, vermilion. 1890.

Rendle's Tank System of heating was first suggested, we believe, by Mr. Rendle, nurseryman, of Plymouth. A tank of iron or wood, twenty feet long, five feet broad, and six 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

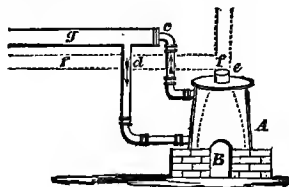
means of two pipes, one from the top of the boiler, and the other returning nearer to its bottom. The expense of pipes, and the danger of their freezing, are avoided; the fire only requires to be kept lighted for two hours at night, and again for the same period in the morning; the water, when once heated, 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, etc.

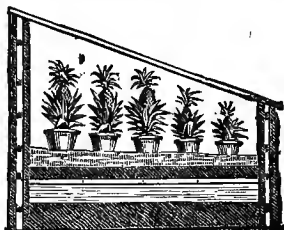
"On the outside of the house is a fire-shed, in which the boiler is fixed. The tank, made of wood, one and a half or two inches thick, which I find the cheapest material (it also prevents the water cooling so fast as it does either in stone or iron), may be lined with lead or zinc. Exactly in the centre 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 two 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 four inches deep. Across it, and resting on its sides, are placed slate stones about an inch and a half 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 nine inches deep, should be placed to inclose the sawdust, sand, moss, or other plunging material."

In the following sketch, for which, as

well as for the next, we are indebted to Mr. Rendle, *A* is a transverse section of Roger's conical boiler; *B* is the fireplace; *g*, the tank; *c*, the flow-pipe; *d*, the pipe by which the water returns to the boiler; *e*, is the hole for the smoke, which, joined to a flue, *f*, can be made either to ascend the chimney at once, or to pass round the house.



The next sketch is a Pinery, fitted up with Mr. Rendle's tank.



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. (In honour of *Paul Renealme*, a French botanist and author of a "History of Plants," 1611. Nat. ord., *Scitamineæ*; Tribe, *Zingiberæ*.)

Stove, herbaceous perennials. For culture, see **ALPINIA**.

R. exalta'ta. 8. Scarlet. July. West Indies. 1820. Syn., *Alpinia tubulata.* B. M. t. 2494.

— *jamaice'nsis.* 6. White. July. Jamaica. 1793. Syn., *Alpinia occidentalis.*

— *nutans.* Andr. Rep. t. 360. See *Alpinia nutans*.

Renea'lmia of R. Brown. (Nat. ord., *Irideæ*; Tribe, *Sisyrrinchieæ*.) A synonym of **Libertia**.

R. grandifl'ora. Swt. Fl. Gard. t. 64. A synonym of *Libertia grandiflora*.

— *panicula'ta.* A synonym of *Libertia grandiflora*.

— *pulche'lla.* A synonym of *Libertia pulchella*.

Requie'nia. (Named after M. Requin, a French botanist. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*.) See **Tephrosia.**

Stove evergreen shrubs, with yellow flowers. Cuttings of half-ripened, stubby shoots in sand, under a bell-glass, in heat; sandy loam, fibry peat, and dried leaf-mould. Winter temp., 50° to 60°; summer, 60° to 80°.

— *obcordata*. See *Tephrosia obcordata*.
— *sphaerosperma*. See *Tephrosia sphaerosperma*.

Rese'da. Mignonette. (From *resedo*, to calm; supposed virtue for external bruises. Nat. ord., *Resedaceæ*.)

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. chinensis. 2. Yellow, green. June. China. 1819.
— *odora'ta*. 1. Green, red. August. Italy. 1762. B. M. t. 29. Sweet-scented Mignonette.
— — *frutescens*. 2. August. Egypt. 1752. B. R. t. 227.
— — *pyramidalis grandiflora*. Garden variety. 1884.
— *trunca'ta*. 1½. Yellow. June. Natolia. 1836.

Reserve Garden. See **Nursery.**

Rest. That period when a plant is not growing.

Rest-Harrow. *Ono'nis*.

Restio. (From *restis*, a cord; cords are made from these plants in South Africa. Nat. ord., *Restiaceæ*.)

A genus of grass-like greenhouse plants of no great cultural value.

R. subverticillatus. 3. Brownish. South Africa. Syn., *Willdenovia teres* of Gardens.

Restrepia. (Dedicated to M. Restrepa. Nat. ord., *Orchideæ*; Tribe, *Epidendreae*—*Pleurothalleæ*.)

Stove epiphytes. Allied to *PLEUROTHALLIS*, and requiring the same treatment.

R. antennifera. Yellow, red-purple. Columbia. 1869.
— *Dayana*. Violet-brown, yellow. Costa Rica. 1875.
— *elegans*. ½. Yellow, purple. Caraccas. 1872.
— *Falkenbergii*. Yellow, white, purple. Columbia. 1880.
— *Lansbergii*. B. M. t. 5257. See *R. xanthophthalma*.
— *maculata*. Yellow, blackish. Columbia. 1875.
— *ophiocephala*. Yellow. April. Mexico. 1837. Syn., *Pleurothallis ophiocephala*.
— *pandurata*. Whitish, purple, crimson-purple. Columbia. 1887.
— *prorepens*. Yellow. Costa Rica. 1877.
— *Reichenbachiana*. ¾. Yellow, dark purple. Costa Rica. 1875.

R. striata. Sepals striped, not spotted as in the other species. G. C. 1891, ix. p. 137.

— *xanthophthalma*. Yellow, spotted with purple. Guatemala. 1861. Syn., *R. Lansbergii*. B. M. t. 5257.

Resurrection Plant. *Anastatica Hierochthalia*, *Mesembryanthemum Tripolium* and *Selaginella lepidophylla*.

Retani'la. (The Peruvian name. Nat. ord., *Rhamnaceæ*; Tribe, *Colletieæ*.) See **Colletia.**

R. Ephedra. See *Colletia Ephedra*.
— *obcordata*. See *Colletia obcordata*.

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, etc. 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 turiona'na. See Pine-bud Moth.

Retiniphy'llum. (From *retine*, resin, and *phyllon*, a leaf. Nat. ord., *Rubiaceæ*; Tribe, *Retiniphyllæ*. 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 fibry peat, with pieces of charcoal. Winter temp., 55° to 60°; summer, 60° to 85°.

R. secundifo'rum. 10. White. Brazil. 1839.

Retino'spora. (From *retine*, resin, and *sporos*, seed. Nat. ord., *Coniferæ*; Tribe, *Cupressineæ*.)

Hardy evergreens, requiring the same culture as *CUPRESSUS*. Sometimes this genus is united with *CHAMÆCYPARIS*.

R. du'bia. Syn., *Chamæcyparis dubia*.

— *Eltwangeria'na.* Syn., *Chamæcyparis Eltwangeriana*.

— *juniperoid'es.* Syn., *Chamæcyparis juniperoides*.

— *leptocla'da.* 10. Japan. Syn., *Chamæcyparis leptoclada*.

— *obtu'sa.* 80. Japan. Syn., *Chamæcyparis obtusa*.

— *lycopodioid'es.* Japan. 1861. Syn., *Chamæcyparis obtusa*, var., *lycopodioides*.

— *Tronbetzkoia'na.* Garden variety. 1890.

— *variega'ta.* Twigs variegated. Japan. 1871. Syn., *Chamæcyparis obtusa*, var., *variegata*.

— *plumo'sa.*

— *squarro'sa.* 6. Japan. Syn., *Chamæcyparis squarrosa*.

Rham'nus. Buckthorn. (From *rham*, a Celtic word, signifying a tuft of branches. Nat. ord., *Rhamnaceæ*; Tribe, *Rhamnææ*.)

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'nus. 3. Yellow. June. N. Africa.

— *celtifo'rius.* 20. Green, yellow. May. Cape of Good Hope.

— *chloro'phorus.* China. 1857. Green dye of China.

— *crenula'tus.* 8. Green, yellow. April. Teneriffe. 1778.

— *cro'ceus.* 4. California. 1848.

— *integri'filius.* 3. Green. Teneriffe. 1822.

— *prinoi'des.* 10. Yellow. June. Cape of Good Hope. 1778.

— *tetra'gonus.* 6. Green. Cape of Good Hope. 1816.

— *the'e'zans.* 2. Green. May. China.

STOVE EVERGREEN SHRUBS.

R. suriname'nsis. 1. Green, yellow. Surinam. 1820.

— *umbella'tus.* 6. Reddish. Mexico. 1839.

HARDY DECIDUOUS SHRUBS.

R. alni'fo'lius. 4. Green. May. N. Amer. 1778.

— *alpi'nus.* 3. Green. May. Switzerland. 1872. B. C. t. 1077.

— *carolina'nis.* 4. Green. May. N. Amer. 1819.

— *catharticus.* 12. Green, yellow. May. England. Eng. Bot. ed. 3, t. 318.

— *hyarie'nsis.* 12. Green, yellow. June. Cape of Good Hope.

— *dahuricus.* 10. Green, yellow. May. Dahuria. 1817.

— *Erythro'xylon.* 6. Yellow, green. July. Siberia. 1823.

— *angustissimus.* Caucasus.

— *frangula.* 10. White. May. Britain. Eng. Bot. ed. 3, t. 319. Black Dogwood.

— *angustifo'lia.* 10. White. May. Britain.

— *franguloid'es.* 4. Green. May. N. Amer. 1810.

— *hirsu'tus.* 6. Green. June. E. Indies.

— *hybridus.* 12. Green.

— *infecto'rius.* 6. Green, yellow. June. South Europe. 1683.

— *lanceola'tus.* 12. Green. May. N. Amer. 1812.

— *latifo'lius.* 4. Green. July. Azores. 1778. B. M. t. 2663.

— *macula'tus.* 6. Green. July. 1845.

— *libano'ticus.* 6. Caucasus. 1879. B. M. t. 6721.

— *longifo'lius.* 6. Green. 1823.

— *lycioi'des.* 6. Green, yellow. November. Spain. 1752.

— *arragone'nsis.* 6. Green, yellow. October. Arragon. 1752.

— *macrophy'llus.* Greenish. China? 1876.

— *olefo'lius.* N. W. America. 1874.

— *oleoi'des.* 4. Green, yellow. June. Spain. 1752.

— *Palla'sii.* Russia. 1838.

— *pu'milus.* 2. Green, yellow. July. Carniola. 1752.

— *Purshia'nis.* 6. Green. May. N. Amer. 1826.

— *pusi'llus.* 1. May. Naples. 1823.

— *robu'stus.* 18. Green. 1879.

— *rupe'stris.* 2. Green. May. South Europe. 1752.

— *saxa'tilis.* 1. Green, yellow. May. Europe. 1752.

— *spathulæfo'lius.* Russia. 1838.

— *tincto'rius.* 5. Green, yellow. May. Hungary. 1820.

— *Valenti'nis.* 2. Green. May. South Europe. 1816.

— *virga'tus.* 8. Green. June. Nepaul. 1820.

— *Wulfe'nii.* 2. Green. July. South Europe. 1758.

HARDY EVERGREEN SHRUBS.

R. alate'rnis. 20. Green. May. South Europe. 1629.

— *angustifo'lia.* 20. Green. May. South Europe. 1629.

— *balea'rica.* 20. Green. May. South Europe.

— *fo'lis-arge'nteis.* 20. Green. May. South Europe.

— *fo'lis-au'rets.* 20. Green. May. South Europe.

— *fo'lis-macula'tis.* 20. Green. May. South Europe.

— *hispa'nica.* 20. Green. May. South Europe.

— *buxifo'lius.* 3. Green, yellow. May. Numidia. 1820.

— *cardiaca'rpus.* 1832.

— *pube'scens.* 4. Pale yellow. May. France. 1817.

— *Wicklius.* 6. 1839.

Rhaphido'phora. See **Raphido-phora.**

Rhaphidophy'llum. (From *Rhaphis*, and *phyllon*, leaf. Nat. ord., *Palmeæ*.)

Greenhouse palm. For culture, see CHAMÆROPS.

R. hystrix. 4. Yellow. June. S. United States. 1801. Syn., *Chamærops hystrix*.

Rhaphiole'pis. See **Raphiole-pis.**

Rhaphitha'mnus. (From *rhapis*, a needle, and *thamnos*, a shrub; some of the species are spiny. Nat. ord., *Verbenaceæ*.)

A greenhouse tree, but hardy in the south-west of England. Culture, same as for MYRTUS. *R. cyanocarpus*. 20. Lilac; berries bright blue. Summer. Chili. B. M. t. 6849.

Rhapidospo'ra. (From *rhapis*, a needle, and *sporos*, a seed. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*.)

Stove herbaceous perennials, from the East Indies. For culture, see JUSTICIA.

R. glabra. Rose, yellow. June. 1824. Wight, Ic. t. 1554. A synonym of *Justicia glabra*.

— *vestita*. Violet. June. 1827. A synonym of *Nelsonia tomentosa*.

Rha'pis. (From *rhapis*, a needle; the sharp-pointed leaves. Nat. ord., *Palmeæ*; Tribe, *Coryphææ*. 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. acutis. See *Sabal Adansoni*.

— *arundinacea*. A synonym of *Sorghum halepense*. (Nat. ord., *Gramineæ*.)

— *aspera*. A synonym of *R. flabelliformis*.

— *cochinchinensis*. 8. Cochinchina.

— *cordata*. Green. May. South France.

— *flabelliformis*. 6. Green. August. China. 1774. B. M. t. 1371; Jacq. Schoenb. iii., t. 316.

— *variegatus*. Leaves striped. Japan. 1861.

— *humilis*. Japan. 1837. Syn., *R. Sirotsik*.

— *java'nica*. Java.

— *Kwamwo'nzick*. 5. Japan?

— *major*. Said to be the largest of the genus. 1889.

— *Siro'tsik*. See *R. humilis*.

Rhapo'nticum. (From *rha*, rhu-barb, and *Ponticus*, Pontus. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*.) A synonym of **Centaurea**.

R. acutis. See *Centaurea acutis*.

— *Palla'sii*. See *Centaurea Rhapontica*.

— *pulchrum*. See *Centaurea pulchra*.

— *scariosum*. See *Centaurea Rhapontica*.

— *uniflorum*. See *Centaurea monanthos*.

Rha'zya. (From the Arabic name. Nat. ord., *Apocynææ*.)

Hardy perennial, resembling a Vinca. For culture, see VINCA.

R. orientalis. Bright blue to dark violet. Taurus. 1889.

Rhee'dia. (Named after *Rheede*, author of the *Hortus Malabaricus*. Nat. ord., *Guttiferæ*; Tribe, *Garcinieæ*.)

Stove evergreen. Cuttings of shoots, rather ripe, in sand, under a bell-glass, and in a moist bottom-heat; sandy loam and fibry peat. Winter temp., 60° to 55°; summer, 80° to 85°.

R. java'nica. Java. 1826.

Rhe'um. Rhubarb. (From *Rha*, the Russian name of the river Wolga, near which the Rhubarb was found. Nat. ord., *Polygonaceæ*; Tribe, *Rumiceæ*.)

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. acuminatum. 3. Purple. Sikkim. 1851.

— B. M. t. 4877.

— *australe*. See *R. Emodi*.

— *austricum*. 5. White. May. Austria. 1800.

— *caespitum*. 6. White. May. Russia. 1817.

— *compactum*. 8. White, green. May. Tartary.

— 1758. Syn., *R. nutans*.

— *crispum*. 5. White. May. 1800.

— *Emodi*. 10. White. Himalaya. B. M.

— t. 3508. Syn., *R. australe*.

— *fenestratum*. 6. White. May. 1780.

— *hybridum*. 5. White, green. May. Asia. 1778.

— *leucorhizum*. Striped. May. Siberia. 1827.

— *no'bile*. 4. Sikkim. 1876. Fl. Ser. t. 1272.

— *nutans*. See *R. compactum*.

— *officinale*. 8. Greenish. Tibet. 1871.

— *palmatum*. 5. White, green. June. Bucharia. 1763.

— *tanguticum*. Green. N. W. China. 1875.

— *Rhaponticum*. 4. White, green. May. Siberia. 1573.

— *ri'bes*. 2. White, green. May. Levant. 1724.

— *sibiricum*. 6. White. May. Siberia. 1800.

— *tataricum*. 3. White, green. May. Tartary.

— 1793.

— *undulatum*. 4. White, green. May. China. 1734.

Rhe'xia. (From *rhexis*, a rupture; supposed cure for ruptures. Nat. ord., *Melastomaceæ*; Tribe, *Rhezieæ*.)

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. Acisanthera. A synonym of *Acisanthera quadrata*.

— *angustifolia*. 1. White. 1812.

— *chiosa*. 1. Purple. 1812.

— *glomerata*. B. C. t. 334. A synonym of

Pterolepis glomerata.

— *holosericea*. B. C. t. 236. A synonym of

Pleroma holosericeum.

— *mariana*. 1. Purple. 1759. B. C. t. 386.

— *rubella*. 2. Pink. 1823. Swt. Fl. Gard., t. 41.

— *viminæa*. B. R. t. 664. A synonym of *Pleroma viminæum*.

— *virginica*. 2. Purple. 1759. B. M. t. 968.

Rhinaca'nthus. (From *rhis*, a nose, and *Acanthus*; the shape of the corolla is similar to that of *Acanthus*. Nat. ord., *Acanthaceæ*.)

Stove shrubs. For culture, see JUSTICIA.

R. communis. 2. White. June. East Indies. 1790. Syn., *Justicia nasuta*, B. M. t. 525. Ringworm Root.

Rhinanthus. (From *rhis*, a nose, and *anthos*, flower; in allusion to the shape of the flower. Nat. ord., *Scrophulariaceae*.)

Hardy annuals, parasitic on the roots of grass, in moist places. Propagated by seeds.

R. Crista-galli. 1. Yellow. Summer. Britain. Syn., *R. minor*, Eng. Bot. ed. 3, t. 998. — *major*. 1. Orange yellow. Late summer. Britain. Eng. Bot. ed. 3, t. 999.

Rhinchoglossum. (From *rhynchos*, a beak, and *glossa*, a tongue; form of the lip of the flower. Nat. ord., *Gesneraceae*; Tribe, *Cyrtandreae*. 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. obliquum. 1. Blue. July. Ceylon. 1844. Syn., *R. zeylanicum*, B. M. t. 4193.

Rhinopetalum. (From *rhis*, a nose, and *petalon*, a petal; base of the upper sepal. Nat. ord., *Liliaceae*; Tribe, *Tulipeae*.) A synonym of **Fritillaria**.

R. Karelini. Swt. Fl. Gard. ser. 2, t. 283. See *Fritillaria Karelini*.

Rhipidopteris. (From *rhipis*, a fan, and *pteris*, a fern; formation of the fronds. Nat. ord., *Filices*—*Polypodiaceae*.) A section of **Acrostichum**.

Stove, brownish-yellow-spored ferns. See **FERNS**.

R. bifurcata. March. W. Indies. — *jaeniculacea*. March. W. Indies. — *peltata*. March. S. America. — *tripartita*. March. Brazil.

Rhipsalis. (From *rhips*, a willow-branch; referring to the flexible branches. Nat. ord., *Cactaceae*; Tribe, *Opuntieae*.)

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. brachicata. See *R. Saglionis*. — *Cassytha*. 1. Yellow. September. W. Ind. 1758. Syn., *R. Hookeriana*. — *communis*. Rose, white. Summer and autumn. Brazil. 1836. Syn., *Lepismium commune*, B. M. t. 3765. — *crispata*. 1. White. December. — *dissemitis*. S. Brazil. 1890. Gf. 1891, p. 634, fig. 121. Syn., *Lepismium dissimile*. — *fasciculata*. Dull yellow. W. Indies. B. M. t. 3079. — *floccosa*. Woolly. — *fundalis*. 3. White. February. Central America. Syn., *R. grandiflora*. B. M. t. 2740. — *grandiflora*. See *R. fundalis*. — *Hookeriana*. A synonym of *R. Cassytha*. — *Houlletii*. Straw-yellow. Brazil. 1872. B. M. t. 6089. — *mesembrianthemoides*. ½. White. Spring. S. America. 1817. B. M. t. 3078. — *pachyptera*. White. February. Tropical America. Syn., *Cactus alatus*. B. M. t. 2820.

R. paradoxa. Yellow, white. Autumn. Brazil. Syn., *Lepismium Myosurus*. B. M. t. 3755.

— *parviflora*. 1. Yellow. S. America. 1800. — *penduliflora*. White. Tropical America. 1877.

— *penta-ptera*. 1½. White. February. Brazil. — *pulvinigera*. White, yellowish-green. Brazil. Gf. 1889, p. 182, figs. 83-4.

— *Regne'lii*. White. South Brazil. Gf. 1890, p. 118, figs. 29, 31-3.

— *Sagliónis*. 1. Greenish-yellow. March. Buenos Ayres. 1843. Syn., *R. brachiatata*. B. M. t. 4039.

— *salicornioides*. Yellow. Spring. Brazil. B. M. t. 2461.

— *sarmentacea*. White. Brazil. 1858. B. M. t. 5136.

— *spathulata*. Yellow. July. Brazil. 1836. — *Swartziana*. White. June. Jamaica. 1810.

— *trigonata*. Brazil.

Rhizophora. Mangrove. (From *rhiza*, a root, and *phoreo*, to bear; the branches send down roots like the Banyan-tree. Nat. ord., *Rhizophoreae*.)

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. Mangie. 10. Pale yellow. E. Indies. 1820.

Rhodamnia. (From *rhodamnus*, a small branch; referring to the size of the plants. Nat. ord., *Myrtaceae*.)

The only species introduced is a greenhouse shrub, or small tree, requiring the same culture as MYRTUS.

R. trinervia. White. May. Australia. 1823. Syn., *Eugenia trinervia*. B. M. t. 3223.

Rhodanthe. (From *rhodon*, a rose, and *anthos*, a flower. Nat. ord., *Compositae*; Tribe, *Inuloideae*.) This genus should have been included in **Helipterum**.

Greenhouse annuals. Seeds, sown in September, in a hotbed; and also in March, for plants to bloom in spring and summer; sandy loam, and leaf-mould, and fibry peat, to sow and prick off in; as the plants are put in their flowering pots, usedried, rotten cow-dung and silver sand freely. After the first potting, an airy place in the greenhouse.

R. atrosanguinea. Pink, crimson. W. Australia. 1861. Half-hardy annual. B. M. t. 5283.

— *maculata*. Pink, crimson. N. W. Australia. Half-hardy annual. There is a white-flowered variety. These two are perhaps only varieties of *R. Manglesi*.

— *Mangle'ii*. 1½. Rose, yellow. June. Swan River. 1832. B. R. t. 1708; B. M. t. 3483; B. M. t. 5290. A synonym of **HELIPTERUM MANOLESI**.

Rhoddon, or **Roddon-tree**. *Pyrrus Aucupa'ria*.

Rhodiola. A synonym of *Sedum*.

Rhodochiton. (From *rhodo*, red, and *chiton*, a cloak; the calyx is swollen and red. Nat. ord., *Scrophulariaceae*; Tribe, *Antirrhineae*.)

A showy greenhouse climber. Propagated by seeds, sown in a slight hotbed in spring; also by cuttings in August, under a hand-glass.

R. volubile. 10. Calyx red; corolla deep blood-colour. June. Mexico. 1833. B. M. t. 3367; B. R. t. 1755; Swt. Fl. Gard. ser. 2, t. 250. Syn., *Lophospermum atrosanguineum* and *L. Rhodochiton*.

Rhododendron. (From *Rhodon*, a rose, and *dendron*, a tree. Nat. ord., *Ericaceae*; Tribe, *Rhodoreae*. Closely allied to **Azalea**, which is sometimes united with it.)

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, fibry 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 *arbo'reum*, *campanulatum*, etc., require a little protection to have them in their beauty. Excellent figures of many of the species are to be found in Sir J. D. Hooker's "Rhododendrons of the Sikkim Himalaya."

STOVE OR WARM GREENHOUSE SHRUBS.

- R. Apoanum*. Red. Philippine Islands. 1885. Gf. t. 1196.
— balsamiflorum a'bum. White. 1888. Garden hybrid.
— arbo'reum. Bright yellow. 1888. Garden hybrid.
— Brookeanum. Orange or tawny-yellow. November. Borneo. 1848. Journ. Hort. Soc. iii., p. 83.
— gracilis. Pale yellow. Borneo. 1871.
— Championae. 7. Pink. April. Hong Kong. 1851. B. M. t. 4609.
— citrinum. Yellow. May. Java. 1854. B. M. t. 4797.
— Curtisii. See *R. multicolor*.
— gracile. 6. Bright red. Borneo. 1848. Journ. Hort. Soc. iii., p. 85.
— jasmiflorum. 2. White, pink. May. Malacca. 1849. B. M. t. 4524.
— javanicum. 4. Orange, red. All seasons. Java. 1847. B. M. t. 4336.
— tubiflorum. Orange, red. Sumatra. B. M. t. 6850.
— Kōchii. White. Philippine Islands. 1885. Gf. t. 1195.
— Lobbii. Crimson. Borneo. 1869.
— longiflorum. 8. Crimson. Borneo. 1848. Journ. Hort. Soc. iii., p. 89.
— malaya'num. Dull scarlet. Malay Archipelago. 1854.
— multicolor. Dark red or bright yellow. Winter. Sumatra. B. M. t. 6769. Syn., *R. Curtisii*. Flor. and Pom. 1884, t. 615.
— reticulatum. 1½. May. Java. 1818.
— verticillatum. Reddish. Borneo. 1848. Journ. Hort. Soc. iii., p. 87.
— Victoria'num. Pure white, golden yellow. 1887. Garden hybrid.

HALF-HARDY OR COOL GREENHOUSE.

- R. Andersoni*. Bright carmine. Himalayas. Probably a form of *R. arboreum*.

- R. arbo'reum*. 20. Scarlet. May. Nepal. 1820.
— a'bum. White with purple dots inside. B. M. t. 3290.
— barbatum. Red. April. Nepal. 1837.
— cinnamo'meum. 20. Purple. June. Nepal. 1820. B. M. t. 3825.
— limbatum. Rose, white, blood-red. Sikkim. 1862.
— ni'veum. 20. White. March. Nepal. 1817.
— Paotanii. Crimson. May. Khooseea. 1837. Paxt. Mag. xiv., p. 99.
— puniceum. Red-scarlet. Syn., *R. arboreum* of B. R. t. 890.
— Rolliis'nii. Crimson. May. Nepal. 1837.
— roseum. 20. Rose. April. Nepal. B. R. t. 1240.
— sanguineum. 20. Scarlet. April. Nepal. 1817.
— barbatum. 8. Nepal. 1820. Fl. Ser. tt. 469-472. There is also a variety *Smithii*.
— Cliveanum. White, pale pink. A hybrid. B. M. t. 4478.
— Dalhousie. 7. Pale yellow. March. Sikkim. 1850. B. M. t. 4718.
— hybridum. White, pink. A hybrid. B. M. t. 5322.
— formosum. 5. White. May. Khasia. 1837. Deciduous. B. M. t. 4457. Syn., *R. Gibsonii*, Paxt. Mag., viii., p. 217.
— Gibsonii. See *R. formosum*.
— Lochei. 20. Bright red. Mt. Bellenden Ker, Australia. 1887.
— Madde'ni. 7. Blush. May. Himalaya.
— Mangle'sii. White. Garden hybrid. 1885.
— Metternichii. Purple. May. Japan.
— nilagiricum. Rose. White. May. Nepal. 1840. B. M. t. 4381. A form of *R. arboreum*.
— ni'veum. Lilac. May. Sikkim, Himalaya. 1850. B. M. t. 4730.
— julianum. Deep purple. Sikkim. 1885. B. M. t. 6827.
— setosum. 1. Purple. Nepal. 1825.
— triflorum. 5. Greenish-yellow. Sikkim. G. C. 1882, xviii., p. 45.

GREENHOUSE.

- R. albescens*. White, sulphur-yellow. Garden hybrid. 1887.
— a'bum. 1. Yellowish-white or cream. November. Java. B. M. t. 4972.
— argenteum. Fl. Ser. tt. 473-476. See *R. grande*.
— Aucklandii. White. May. Sikkim. 1850. Syn., *R. Griffithianum*, var. *Aucklandii*.
— blanfordianum. 8. Orange, red. Sikkim. 1851. B. M. t. 4930.
— Bod'ii. 6. Bootan.
— calophyllum. 8. White. May. Bootan.
— camelliflorum. 6. White. April. Sikkim. 1851.
— campylocarpum. 6. Yellow. April. Sikkim. 1851.
— cilium. Rose, white. March. Sikkim. Himalaya. Paxt. Fl. Gard. t. 83.
— roseo-a'bum. White, tinged with rose. B. M. t. 4648.
— Edgeworthii. White. May. Sikkim. 1851. Fl. Ser. tt. 797-798.
— eximium. 30. Bootan.
— Falconeri. Yellow. May. Sikkim. 1851. Fl. Ser. tt. 477-778.
— formosum. White. April. Silhet. 1815. B. M. t. 4457.
— grande. 30. White. March. Sikkim. 1850. Syn., *R. argenteum*. B. M. t. 5054.
— roseum. Deep red. Sikkim. 1887. B. M. t. 6948.
— graveolens. Pure white. Garden hybrid between *R. formosum* and *R. Sesterianum*.

- R. Griffithianum* Auckl'ndii. See *R. Aucklandii*.
 — *Hodgsonii*. Purple. April. Sikkim. 1851.
 — *Hookei*. 14. Red. April. Bootan.
 — *Indico-javanicum*. Garden hybrid. G. C. 1889, vi., p. 507 and 602.
 — *Jenkinsonii*. 7. Bootan.
 — *Kendrickii*. Scarlet. Bootan. 1859.
 — *Keyesii*. 3. Red, yellow. July. Bootan. 1851.
 — *Lanatum*. Yellow. April. Sikkim. 1851. Fl. Ser. t. 884.
 — *Lindleyi*. White. Bootan. 1864.
 — *Longifolium*. 30. Bootan.
 — *Macnabii*. A hybrid from *R. Edgeworthii*. 1846.
 — *Moulmainense*. White. Arracan.
 — *Nuttaii*. 10. White. May. Bootan. 1859.
 — *Odoratum*. Pale rose. Garden hybrid. 1886.
 — *Pendulum*. 4. White. Spring. Sikkim. Fl. Ser. t. 662.
 — *Procox*. Garden hybrid. 1882.
 — *Royale*. India. G. C. 1884, xxi. p. 765.
 — *Scaberrimum*. White, tinged with rose. Yunnan, China. 1890.
 — *Sesterianum*. White. Garden hybrid.
 — *Shepherdii*. Scarlet. Bootan. 1859.
 — *Smithii*. Red. March. Bootan. 1859.
 — *Veitchianum*. White. May. Moulmein. 1857.
 — *Wightii*. Straw colour. April. Sikkim. 1851. Fl. Ser. t. 792-793.
 — *Williamsonii*. White, spotted purple. 1885. Hybrid between *Azalea sinensis* and a *Rhododendron*.
 — *Wilsonii*. Ross. Garden hybrid. B. M. t. 5116.
 — *Windsori*. Crimson. Bootan.

HARDY.

- R. æruginosum*. See *R. campanulatum*, var. *æruginosum*.
 — *albiflorum*. 2. White. June. Rocky Mountains. 1835. B. M. t. 3670.
 — *anthopogon*. 2. Purple. May. Nepal. 1820. B. M. t. 3947.
 — *californicum*. Pink. June. California. B. M. t. 4863.
 — *campanulatum*. 4. Pale pink. May. Nepal. 1825.
 — *æruginosum*. Leaves clothed beneath with verdigris tomentum.
 — *Eatoniai*. Moss robust variety. B. M. t. 5387.
 — *hybridum*. Garden hybrid. 1882.
 — *Wallii*. Brightly coloured variety.
 — *kamtschatcicum*. See *R. kamtschatcicum*.
 — *catalpense*. 4. Purple. July. N. America. 1809. B. M. t. 1671.
 — *Catesbaei*. 4. Purple. May. N. America. 1810.
 — *caucasicum*. 1. Purple. August. Caucasus. 1803. B. M. t. 1145.
 — *flavidum*. Straw-colour, spotted with green. Caucasus. 1863.
 — *pulcherrimum*. Ross. A hybrid. Syn., *R. putcherrimum*. B. R. t. 1820.
 — *stramineum*. 2. Straw. April. B. M. t. 3422.
 — *Chamæcistus*. B. M. t. 488. See *Rhodothamnus Chamæcistus*.
 — *chrysanthum*. ½. Yellow. June. Siberia. 1796.
 — *cinnabarinum*. Brownish-red. April. Sikkim. 1851.
 — *pallidum*. Pale red. B. M. t. 4788.
 — *Collettianum*. 10. Whites. May. Afghanistan. B. M. t. 7019.
 — *dauricum*. 3. Purple. March. Siberia. 1780. B. M. t. 636.
 — *sempervirens*. 8. Purple. March. Siberia. Syn., *R. dauricum*, var. *atrovirens*. B. R. t. 194.
 — *Farreri*. 3. Lilac. March. China. 1829.

- R. ferrugineum*. 1½. Scarlet. June. Switzerland. 1752. B. C. t. 65.
 — *album*. 1. White. Juns. Pyrenees. 1830. Swt. Fl. Gard. ser. 2, t. 258.
 — *Fortunei*. 12. Pale rose. May. China. 1859. B. M. t. 5596.
 — *fulgens*. Red. April. Sikkim. 1851. Paxt. Mag. x., p. 147.
 — *glaucum*. 2. Pale purplish-pink. May. Sikkim. 1850. B. M. t. 4721.
 — *hirsutum*. 1½. Scarlet. June. Switzerland. 1656. B. M. t. 1853.
 — *flavum*. Yellowish. All seasons. Java. 1847.
 — *variegatum*. 1. Scarlet. June. 1800.
 — *hybridum*. B. R. t. 195. See *R. maximum*.
 — *intermedium*. Hybrid between *R. ferrugineum* and *R. hirsutum*.
 — *kamtschatcicum*. Purplish-red, deep purple. July. Kamtschatka. 1802. Syn., *Rhodothamnus kamtschatcicus*.
 — *Kendrickii* *latifolium*. Scarlet. Spring. Bhotan. 1859. B. M. t. 5129.
 — *lappaceum*. ½. Crimson. April. Lapland. 1825. B. M. t. 3106.
 — *ledifolium plenan purpurea*. Garden variety. 1836. Gfl. t. 1233, c-d.
 — *lepidotum*. ½. Rose. Nepal. 1829. B. M. t. 4657.
 — *chloranthum*. Yellowish-green, with green spots. B. M. t. 4802.
 — *obovatum*. 1-4. Maroon-purple. May. Sikkim. 1879.
 — *macrosepalum*. Rosy, purple. Japan. 1870.
 — *maximum*. 20. Pink. July. N. America. 1756. B. M. t. 951. Syn., *R. hybridum*.
 — *album*. 15. White. July.
 — *bi-gener*. B. R. t. 195.
 — *hybridum*. Garden hybrid. B. M. t. 3454.
 — *Metternichii*. Ross. Japan. 1870.
 — *myrtifolium*. B. C. t. 908. See *R. ponticum*, var. *myrtifolium*.
 — *orbiculare*. 10. Rosy. Tibet. 1879.
 — *parvifolium*. Pale rose. Baikal. 1877.
 — *ponaticum*. 12. Purple. May. Asia Minor. 1763. B. M. t. 650; Jacq. Ic. t. 98.
 — *azaleoides*. Hybrid. Syn., *R. ponticum*, var. *deciduum*. Andr. Rep. t. 379.
 — *myrtifolium*. 12. Purple. May. Gibraltar. 1763. Syn., *R. myrtifolium*.
 — *obtusum*. 4. Purple. May. Armenia.
 — *odoratum*. 3. Pink. July. 1820.
 — *punctatum*. 4. Pink. July. N. America. 1786. B. M. t. 2285.
 — *maius*. 6. Pink. July. B. R. t. 37.
 — *purpureum*. 25. Purple. July. N. America.
 — *Purshii*. White. July. Jersey. 1811.
 — *Rhodora*. Red, purple. May. N. America. 1767. Syn., *Rhodora canadensis*.
 — *Rollisonii*. 30. Blood-red. Spring. Ceylon. Paxt. Fl. Gard. i. t. 7.
 — *semibarbatum*. Greenish-yellow. Japan. 1871.
 — *Smirnowii*. Crimson. Tschoruk. G. C. 1891, ix, p. 462.
 — *Smithii*. B. M. t. 5120. See *R. barbatum*, var. *Smithii*.
 — *Thomsonii*. 10. Red. April. Sikkim. 1851. Fl. Ser. t. 688-690.
 — *Ungerii*. White. Tschoruk. G. C. 1891, ix, p. 462.
 — *Vaseyi*. 1. Pink. Carolina. 1888.
 — *virgatum*. 1½. Pink. April. Sikkim. 1850.
 — *yedoense*. Rose-pink. Japan. 1886. Gfl. t. 1233, a-b.

SPECIES REFERRED TO AZALEA.

- R. arboreascens* = *Azalea arboreascens*.
 — *calendulaceum* = *calendulacea*.
 — *Farreri* = *squamata*.
 — *flavum* = *ponica*.
 — *glaucum* = *glauca*.
 — *molle* = *mollis*.

- R. nitidum* = *A. nitida*.
 — *nudiflorum* = { — *bicolor*.
 = { — *nudiflora*.
rhombicum = — *rhombica*.
 — *serpyllifolium* = — *serpyllifolia*.
 — *speciosum* = — *speciosa*.
 — *viscosum* = { — *glauca*.
 = { — *viscosa*.

Rhodole'ia. (From *rhodon*, a rose and *leios*, smooth; probably alluding to the rose-like flowers and spineless stems. Nat. ord., *Hamamelidaceæ*.)

Greenhouse evergreen shrub. For cultivation, see CAMELLIA.

R. Champ'oni. Pink. China. 1852. B. M. t. 4509.

Rhodom'yrtus. (From *rhodon*, rose, and *myrtos*, myrtle. Nat. ord., *Myrtaceæ*.)

Greenhouse shrub, requiring the same culture as MYRTUS.

R. tomentosa. 5. Rose. June. China. 1776. Syn., *Myrtus tomentosus*. B. M. t. 250. Hill Gooseberry; India Hill Guava.

Rhodo'ra. (From *rhodon*, rose; referring to the colour of the flowers. Nat. ord., *Ericaceæ*; Tribe, *Rhodoreæ*.) See **Rhododendron**.

R. canadensis. B. M. t. 474. See *Rhododendron Rhodora*.

Rhodospa'tha. (From *rhodon*, a rose, and *spatha*, spathe; the spathe of some of the species is rosy. Nat. ord., *Aroideæ*; Tribe, *Callex*.)

Stove perennial evergreen. Sandy loam and peat. Moist atmosphere. Summer temp., 80° to 90°; winter, 60° to 75°.

R. blanda. 3. Greenish, ochre. Brazil. 1860.

Rhodosta'chys. (From *rhodon*, a rose, and *stachys*, a flower spike; some of the species have spikes of red flowers. Nat. ord., *Bromeliaceæ*; Tribe, *Bromelieæ*. Syn., *Ruckia*.)

Stove herbs, requiring the same culture as BROMELIA.

R. andr'i. 1. Rose. Summer. Andes of Chili. 1850. Rev. Hort. 1855, p. 540, f. 95. Syns., *Bromelia carnea*, *B. longifolia*, and *Ruckia Elemeeti*. *R. grandiflora* and *R. littoralis* are forms of this species.

— *bicolor*. Rose. Tropical America. 1851. Forms of this are:—*Bromelia bicolor* and *B. Joinvillei*.

— *pitcairniaefolia*. Scarlet. Tropical America. 1863. Syn., *Hechtia pitcairniaefolia*.

— — *Kirchoffiana*. Blue. Chili. 1890. Gf. t. 1325.

Rhodosto'ma. (From *rhodon*, a rose, and *stoma*, a mouth; the opening of the tube of corolla. Nat. ord., *Rubiaceæ*; Tribe, *Psychotriææ*.) A synonym of **Palicourea**.

Stove evergreen shrubs. Cuttings of the young shoots in sand, under a bell-glass, and in bottom-heat; sandy, fibry loam and fibry peat. Winter temp., 48° to 60°; summer, 60° to 85°.

R. gardenoides. Moore, Mag. Bot. 1850, p. 65. See *Palicourea gardenioides*.

Rhodotha'mnus. (From *rhodon*, a rose, and *thamnos*, a shrub; the

flowers are rose-coloured. Nat. ord., *Ericaceæ*; Tribe, *Rhodoreæ*.)

A low-growing, much-branched, hardy shrub.

R. Chamæcistus. †. Rose. Alps of Eastern Europe. 1786. Syn., *Rhododendron Chamæcistus*, B. M. t. 488.

— *kamtchat'icus*. Paxt. Fl. Gard. i. t. 22. See *Rhododendron kamtschaticum*.

Rhodoty'pos. (From *rhodon*, a rose, and *typos*, a type or model; because the flowers resemble those of a rose. Nat. ord., *Rosaceæ*; Tribe, *Spirææ*.) Allied to *Kerria*.)

Hardy shrub. Cuttings under a hand-light, suckers, or layers. Garden-soil.

R. kerrioides. 15. White. April. Japan. 1866. B. M. t. 5805.

Rhoe'o. (Derivation unexplained. Nat. ord., *Commelinaceæ*; Tribe, *Tradescantieæ*.)

Stove perennial herb. For cultivation, see TRADESCANTIA.

R. discolor. †. White, pink; leaves purple-edged. 1868. Syn., *Tradescantia discolor*.

— — *concolor*. Leaves entirely green. 1868.

Rhopa'la. See **Roupala**.

Rhopalobla'ste. (From *rhopalon*, a club, and *blastos*, a cell. Nat. ord., *Palmeæ*.)

Stove palm, with slender unarmed stem.

R. hexandra. E. Indies. 1890. Syn., *Bentickia ceramica*.

Rhopalosti'gma. (From *rhopalon*, a club, and *stigma*, a stigma. Nat. ord., *Aroideæ*.) See **Staurostigma**.

Rhopalo'stylis. (From *rhopalon*, a club, and *stulos*, a pillar; referring to the shape of the spadix. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.)

Greenhouse palms, with unarmed stems. For culture, see ARECA.

R. Baueri. 20. White. Autumn. Norfolk Island. 1882. Syn., *Areca Baueri*. B. M. t. 5935.

— *sapida*. 12. Pink. New Zealand. 1827. Rev. Hort. 1873, p. 350. Syns., *Areca sapida*, B. M. t. 5139, and *Kentia sapida* of gardens.

Rhubarb. *Rheum raponticum*, *R. hybridum*, *R. undulatum*, and *R. palmatum*.

Varieties.—There are several varieties, of which the most preferable are the Tobolsk, Gigantic, Victoria (best), and Bucks, or Elfrod.

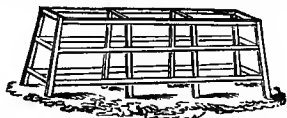
The *Soil* best suited to it is light, rich, deep, unshaded, and moderately moist.

Sowing.—It may be propagated by cuttings, but usually by seed. Sow soon after it is ripe, in September or October, in drills three feet apart, and an inch deep, the plants to remain where raised; for although they will bear removing, yet it always checks and some-

what lessens their growth. When they make their appearance in the spring, thin to six or eight 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 four feet, or the Gigantic and Victoria to six. 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 place the earth from it 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.

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 three 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 envelop 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 three feet high above ground, and the space between the two rows of stakes two feet at the bottom, but approaching each other, and fastened by cross pieces, so as to be only fifteen inches apart at top. To the sides and top stout lathes are fixed, as in the accompanying sketch, 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 eighteen 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 six inches deep with light litter, care being taken that the plants are not injured.

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 successive 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 *rhudd*, red; colour of the fruit. Nat. ord., *Anacardiaceæ*; Tribe, *Anacardieæ*.)

Hardy deciduous trees and shrubs. By seeds, layers, and cuttings of roots and shoots; light, fibry loam. We have omitted most of the greenhouse and stove species.

R. amela. See *R. semialata*.

—*aromatica.* S. Yellow. May. N. Amer. 1773. Syn., *R. suaveolens*.

—*atomaria.* Jacq. H. Schoenh. t. 343. See *R. villosa*.

- R. Bu'cku ame'la.* See *R. semialata*.
 — *canadē'nsis.* See *R. typhina*.
 — *carolinia'na.* See *R. glabra*, var. *coccinea*.
 — *cau'stica.* 40. Pale yellow. Chili. 1832.
 Syns., *Lithrea caustica* and *L. venenosa*.
 Greenhouse evergreen.
 — *chinē'nsis.* See *R. semialata*.
 — *cocci'nea.* See *R. glabra*, var. *coccinea*.
 — *copall'i'na.* 6. Green, yellow. August. N. Amer. 1688.
 — — *leuca'ntha.* 4. Whitish. August. N. Amer.
 — *coria'ria.* 10. Green, yellow. July. S. Amer. 1640.
 — *Co'tinus.* 6. Pale purple. June. South Europe. 1656.
 — — *pe'ndula.* A garden variety with drooping branches. 1885.
 — *diversifo'lia.* Greenish-white. June. California.
 — *diversiloba.* Green. June. California. B. R. 1845, t. 38.
 — *e'legans.* Wats. Dendr. i. t. 16. See *R. glabra*.
 — *glabra.* 8. Green, yellow. August. N. Amer. 1726. Wats. Dendr. i. t. 15. Syn., *R. elegans*.
 — — *cocci'nea.* 10. Red. June. N. Amer. Syns., *R. caroliniana* and *R. coccinea*.
 — — *diot'ca.* 8. Greenish. July. N. Amer.
 — — *lacinia'ta.* Leaves much cut. 1863.
 — *java'nica.* See *R. semialata*, var. *Osbeckii*.
 — *juglandifo'lia.* See *R. vernicifera*.
 — *lu'cida.* 6. White. July. South Africa. 1697. Jacq. H. Schoenb. t. 347. Greenhouse.
 — *Osbe'ckii.* See *R. semialata*, var. *Osbeckii*.
 — *oryzaca'ntha.* 6. Green, yellow. Barbary. 1823.
 — *pa'mila.* 1. Green, yellow. July. N. Amer. 1806.
 — *radicans.* 3. Green, yellow. June. N. Amer. Creeper.
 — — *microca'rupa.* 2. Green, yellow. June. N. Amer. Climber.
 — — *volvul'itis.* 2. Green, yellow. June. N. Amer. Climber.
 — — *vulga'ris.* Green, yellow. June. N. Amer. Creeper.
 — *Rædæli'javel.* A synonym of *Connarus macrocarpus*.
 — *semiala'ta.* 40. Nepaul. 1823. Syns., *R. amela*, *R. Bucku amela*, and *R. chinensis*.
 — — *Osbe'ckii.* 20. White. Japan. 1867. Syn., *R. Osbeckii*.
 — *Simo'ni.* China. 1866.
 — *suave'olens.* See *R. aromatica*.
 — *succeda'nea.* 15. Greenish-yellow. June. Japan. 1768. Japan wax. Greenhouse evergreen.
 — *thee'zans.* See *R. undulata*.
 — *Toxicode'ndron.* Greenish-yellow. June. North America. 1640. B. M. t. 1806. Poison ivy or oak.
 — *typhi'na.* 20. Green, yellow. July. N. Amer. 1629. Wats. Dendr. i. t. 17-18. Stag's-horn Sumach; vinegar-tree.
 — — *arbore'scens.* 25. Green, yellow. July.
 — — *frute'scens.* 6. Green, yellow. July.
 — *undula'ta.* 5. Whitish-yellow. Cape of Good Hope. 1816. Jacq. H. Schoenb. t. 346. Syn., *R. theezans*.
 — *venena'ta.* 6-18. Green. July. North America. 1713. Syn., *R. vernix*. Wats. Dendr. i. t. 19. Poison Elder, Sumach, or Dogwood.
 — *vernici'fera.* 10. Green, yellow. Nepaul. 1823. Syn., *R. juglandifolia*.
 — *ve'rnix.* See *R. venenata*.
 — *villo'sa.* Greenish-yellow. July. South Africa. 1714. Syn., *R. atomaria*. Greenhouse evergreen.

Rhyncha'nthera. (From *rhynchos*,

a beak, and *anthera*, an anther; anthers beaked. Nat. ord., *Melastomaceæ*; Tribe, *Microlicieæ*.)

Stove evergreen shrub, with handsome purple flowers. Cuttings of the half-ripened side-shoots, in sandy loam, in heat and under a bell-glass, which should be raised a little to permit free circulation of air, and prevent damping off. Rich sandy loam and fibry peat, well drained. Summer temp., 60° to 85°; winter, 58° to 65°.

R. grandiflora. 6. Deep rose. N. Brazil. 1873. B. M. t. 6011.

Rhynchanthus. (From *rhynchos*, a beak, and *anthos*, a flower; referring to the shape of the flowers. Nat. ord., *Scitamineæ*; Tribe, *Zingibereæ*.)

A stove, tuberous-rooted herb. Strong, rich loamy soil. Division of the roots. Summer temp., 60° to 90°, with plenty of moisture; winter temp., 50° to 60°.

R. longiflorus. 1½. Yellowish, tipped with green. July. Burma. 1885. B. M. t. 6861.

Rhyncho'rupa. (From *rhynchos*, a beak, and *karpos*, fruit; in allusion to the beaked fruit. Nat. ord., *Cucurbitaceæ*; Tribe, *Cucumerineæ*. Allied to *Bryonia*.)

Tuberous-rooted greenhouse perennial, but may be grown as an annual in a warm border. Seeds sown in spring in a slight hotbed. Light rich soil. Winter temp., 45° to 55°.

R. fastida. Yellow. Abyssinia. Syn., *Trichosanthes fetidissima*. Jacq. Ic. t. 624.
 — *glomerata.* Brazil. 1880.

Rhynchoglo'ssum. See **Rhincoglossum**.

Rhyncho'sia. (From *rhynchos*, a beak; from the shape of the keel. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Eriosema*.)

Greenhouse or stove perennial trailing or twining herbs. Seeds. Light sandy loam. Summer temp., 60° to 75°; winter, 50° to 55°.

R. al'bo-nitens. See *Desmodium Skinneri*, var. *albo-nitens*.

— *chryso'cias.* Yellow. May. S. Africa. 1871.
 — *cyanospe'rma.* Bright reddish-purple. Summer. Tropics.

— — *albiflora.* Yellowish-white. April. Stove. Syn., *Cylista albiflora*. B. M. t. 1859.

— *gibba.* Yellow, brown. September. South Africa. Syn., *Glycine caribæa*. B. R. t. 275. Greenhouse.

— *glandulosa.* 2. Yellow. July. S. Africa. 1825. Syn., *Glycine heterophylla*.

— *phaseolo'des.* Yellow, purple. June. West Indies. 1818. Syn., *Glycine phaseoloides*. B. M. t. 2284.

— *violacea.* A synonym of *Eriosema violaceum*.

Rhyncospe'rmum. (From *rhynchos*, a beak, and *sperma*, a seed. Nat. ord., *Apocynaceæ*. Allied to *Apocynum*.)

Evergreen climbers, requiring greenhouse treatment, to be grown in loam and peat, and to be propagated by cuttings under a bell-glass, in sand.

R. angustifolium. See *Trachelospermum jasminoides*, var. *angustifolium*.

— *jasminoides.* B. M. t. 4737. See *Trachelospermum jasminoides*.

R. variegatum and *varium* are varieties of *Trachelospermum jasminoides*.

Rhyncho'stylis. (From *rhynchos*, a beak, and *stylos*, a pillar. Nat. ord., *Orchideæ*; Tribe, *Vandeeæ-Sarcantheeæ*.)

Stove, epiphytal orchids from the East Indies. For culture, see SACCOLABIUM.

R. retusa. 1. White, violet-pink. East Indies. 1820. Syns., *Saccolabium Blumei*, *S. guttatum* (B. M. t. 4108) and *Sarcanthus guttatus* (B. R. t. 1443).
— *Russelia* na. White, mauve-purple. 1886. Syn., *Saccolabium Blumet*, var. *Russelianum*. Warn. Orch. Alb. t. 238.

Rhynchote'chum. (Derivation unexplained. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*. Allied to *Besleria*.)

Stove herb, apparently biennial; and therefore must be raised from seeds. The soil and temperature should be the same as for *GESNERA*, which see.

R. ellipticum. Deep rose. Himalaya. 1870. B. M. t. 5832.

Rhytidophy'llum. (From *rhytis*, a wrinkle, and *phyllon*, a leaf. Nat. ord., *Gesneraceæ*; Tribe, *Gesnerææ*. Allied to *Pentarrhaphia*.)

For culture, see *GESNERA*.

R. auriculatum. Red, yellow. August. Brazil. 1894. B. M. t. 3562.

— *floribundum*. Fl. Ser. t. 178. See *Pentarrhaphia libanensis*.

— *Humboldtii*. 3. Green, purple. Central America. 1853. A synonym of *Campanea Humboldtii*.

— *Oerstedii*. 2. Green, purple. Central America. 1862. A synonym of *Campanea Oerstedii*.

— *tigrifolia*. 2. Green, purple. Venezuela. 1852.

— *tomentosum*. 3. Greenish-yellow with purple spots. Summer. West Indies. Syn., *Gesneria tomentosa*. B. M. t. 1023.

Ribbon Grass. *Phalaris arundinacea*, var. *variegata*.

Ribbon Tree. *Plagiathus*.

Ribes. Currant. (From the Arabic name of a plant. Nat. ord., *Saxifragææ*; Tribe, *Ribesiacææ*.)

Hardy deciduous shrubs, except *punctatum*, which requires shelter. 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. aciculare. White. Siberia.
— *acuminatum*. 5. Greenish-yellow. Nepal. 1837.

— *albidum*. White, pink. Paxt. Mag. x. p. 55.
— *albivivum*. 4. Green. N. Amer.

— *alpinum*. 3. Green. Britain. Eng. Bot. ed. 3, t. 519.

— *bacciferum*. 3. Green. Britain.
— *foliis-variegatis*. 4. Green. May, Britain.

— *puberulum*. 2. Green.
— *sterile*. 3. Green. Britain.

— *atro-purpureum*. 4. Purple. Siberia. 1826.

— *aurum*. 8. Yellow. May. Missouri. 1812. B. R. t. 125.

— *prococ*. 8. Yellow. N. Amer. 1812.

— *serotinum*. 8. Yellow. June. N. Amer. 1812.

R. aureum villosum. 8. Yellow. N. Amer. 1812.

— *carpathicum*. 4. Green. Carpathia. 1818.
— *ceruum*. 2. White. N. Amer. 1827. B. R. t. 1263; B. M. t. 3008.

— *cynobabti*. 4. Green. Canada. 1750. Jacq. H. Vind. t. 123.

— *fructu-aculeato*. 4. Purplish. Lake Huron.

— *fructu-glabro*. 4. Whitish. Hudson's Bay.

— *diacantha*. 4. Green, yellow. May. Siberia. 1781.

— *divaricatum*. 7. White, red. N. Amer. 1826. B. R. t. 1359.

— *flavum*. 6. Yellow. N. Amer. 1812.

— *floridum*. 4. Yellow. N. Amer. 1729.

— *grandiflorum*. 4. Yellow. N. Amer.

— *parviflorum*. 4. N. Amer.

— *fragrans*. Yellow. May. North America. 1820. B. C. t. 1533.

— *glaciale*. 4. Yellow. Nepal. 1823.

— *glandulosum*. 8. Green, yellow. Peru. 1820.

— *Gordoni*. 6. Yellow, red. Fl. Ser. t. 165.

— *gracile*. 4. Green, white. N. Amer. 1812.

— *grossularia*. 4. Green. England. Eng. Bot. ed. 3, t. 518.

— *Besseri* na. 4. White. Cracow. Syn., *R. hybrida*.

— *bracteata*. 4. Green, white.

— *himalayana*. 4. Green, white. March. Himalayas. 1838.

— *macrocarpa*. 4. Green, white.

— *reclinata*. 4. Green, white. Germany. 1781. Syn., *R. reclinata*.

— *spinosissima*. 4. Green, white. Britain.

— *subinerms*. 4. Green, white.

— *uva-crispa*. 4. Green, white. Britain. Syn., *R. uva-crispa*.

— *heterotrichum*. 2. Purple. Altai. 1837.

— *hudsoniana*. 4. White. Hudson's Bay.

— *inbrians*. Greenish-purple. April. North America. 1832. B. R. t. 1471.

— *integriflorum*. 3. Yellow. Chili. 1880.

— *japonicum*. 3. Green. Japan. 1877.

— *lacustris*. 4. Yellow, green. N. Amer. 1812. B. C. t. 884.

— *echinatum*. 1½. Greenish-yellow.

— *Loebii*. 6. Purple. May. California. G. C. 1883, xix. p. 11, f. 1. Syn., *R. subvestitum*.

— *macrocarpum*. 4. Green. May.

— *malvaecium*. See *R. sanguineum*, var. *malvaecium*.

— *Menziesii*. 5. Red. May. California. 1830. B. R. 1847, t. 2368.

— *microphyllum*. 5. Red. Mexico.

— *multiflorum*. 5. Green. Hungary. 1822. B. M. t. 2368.

— *nigrum*. 5. Green. Britain. Black Currant.

— *baica-vivide*. 5. Russia.

— *foliis-variegatis*. 5. Britain.

— *nivcum*. 5. White. N. Amer. 1826. B. R. t. 1692.

— *opuliflorum*. Russia.

— *orientale*. 4. Green, yellow. May. Syria. 1824.

— *oxyacanthoides*. 3. Green, white. N. Amer. 1763.

— *petraeum*. 4. Red. May. England. Jacq. Ic. t. 49.

— *procumbens*. ½. Purple. May. Dahuria. 1804.

— *prostratum*. 1½. Yellow. May. N. Amer. 1812.

— *laxiflorum*. 4. Green, yellow. N. Amer. 1812. Syn., *R. laxiflorum*.

— *punctatum*. 3. Green, yellow. Chili. 1826. Half-hardy. B. R. t. 1278; B. R. t. 1658.

- R. resinosum*. 3. Yellow, green. N. Amer. 1800. B. M. t. 1583.
 — *ri'gena*. 6. Green. N. Amer. 1812.
 — *Ro'e'zlii*. 3. Red, white. N. W. America. 1879.
 — *ru'brum*. 4. Green. Britain. Red Currant.
 — *al'bum*. 4. Green. Britain.
 — *ca'rneum*. 4. Green. Britain.
 — *fo'lis a'lbis*. 4. Green.
 — *fo'lis lu'teis*. 4. Green.
 — *hort'e'nse*. 4. Green. Britain.
 — *sibi'ricum*. 6. Greenish-yellow. Russia.
 — *sy'lv'stre*. 4. Green. Britain.
 — *varie'gatum*. 4. Green. Austria.
 — *sangui'neum*. 6. Blood. N. Amer. 1826. Trans. Hort. Soc. vii. p. 13; B. R. t. 1349. A double-flowered variety is figured in Paxt. Mag. xii. p. 121.
 — *atro-ru'bens*. 6. Dark red. N. Amer.
 — *glutino'sum*. 6. Pale pink. N. Amer.
 — *malva'ceum*. 6. Dark pink. N. Amer. Syn., *R. malvaceum*. Swt. Fl. Gard. ser. 2, t. 340.
 — *saxa'tile*. 4. Green. May. Siberia. 1819.
 — *seto'sum*. 4. Green, white. N. Amer. 1810. B. R. t. 1237.
 — *specio'sum*. 4. Crimson. May. California. 1829. B. R. t. 1557.
 — *spica'tum*. 4. Green. England.
 — *subvesti'tum*. B. M. t. 4931. See *R. Lobbiai*.
 — *tenuiflorum*. 6. Yellow. N. Amer. 1812. B. R. t. 1274.
 — *fru'ctu-lu'teo*. 6. Yellow.
 — *fru'ctu-ni'gro*. 6. Yellow.
 — *tri'fidum*. Quebec. 1824.
 — *triflorum*. Red. United States. B. C. t. 1094.
 — *triste*. 3. Siberia. 1820.
 — *viscosissimum*. 4. Yellow. N. Amer. 1820.

Rice. *Ory'za sati'va*.

Rice Flower. *Pime'lea*.

Rice paper is sliced from the pith of *Fo'tsia papyri'fera*. See p. 382.

Richa'rdia. (Named after L. C. Richard, a French botanist. Nat. ord., *Aroideæ*; Tribe, *Philodendreae*.)

Better known as *Calla æthio'pica*, or the Arum-plant. Greenhouse herbaceous perennial. Suckers and division of the plant in spring; rich, fibry 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. 8. Creamy. March. South Africa. 1731. Syns., *R. africana* and *Calla æthio'pica*. B. M. t. 832.

- *africa'na*. See *R. æthio'pica*.
 — *al'bo-maculata*. White. June. Natal. 1859. B. M. t. 5140.
 — *Elliotia'na*. Yellow. Leaves spotted with white. 1890.
 — *hastata*. Yellow, green. Natal. 1859. B. M. t. 5176.
 — *melanoleu'ca*. 1½. Spathe pale yellow, black-purple at base; spadix white. Natal. 1869. B. M. t. 5765.
 — *scabra*. See *Richardsonia scabra*.

Richardso'nia. (Named after R. Richardson, an English botanist. Nat. ord., *Rubiaceæ*; Tribe, *Spermacocææ*.)

Stove evergreen. Cuttings of young shoots in sandy soil, and in a moist bottom-heat; fibry loam and peat, and a little sand and leaf

mould. Winter temp., 48° to 58°; summer, 60° to 80°.

R. sca'bra. 2. White. September. Brazil. 1814. Swt. Fl. Gard. t. 91. Syn., *Richardia scabra*.

Riche'a. (Named after Mr. Ritchie, an African traveller. Nat. ord., *Epacridaceæ*; Tribe, *Epacreae*.)

Greenhouse shrubs or small trees. Cuttings of half-ripened shoots in sand, under a bell-glass, and in a mild, sweet bottom-heat; sandy, fibry peat, with a few nodules of fibry loam and charcoal. Winter temp., 55° to 60°; summer, 60° to 88°.

R. fra'grans. This was erroneously given on p. 266 as the proper name for *Cratæva capparoides* and *C. fragrans*; it should have been *Ritchiea fragrans*, which see.
 — *pandanifo'lia*. 20. Australia. 1883.
 — *sprengelko'des*. 5. Reddish. June. Australia. 1836.

Ri'cinus. Palma Christi. (From *ricinus*, a tick; resemblance in the seeds. Nat. ord., *Euphorbiaceæ*; Tribe, *Crotonææ*.)

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. The following are all half-hardy annuals, except *li'vidus* and *ru'tilans*:

- R. arma'tus*. Andr. Rep. t. 430. See *R. communis*.
 — *cambridge'nsis*. 1887. Probably a form of *R. communis*.
 — *commu'nis*. 6. Green. July. E. Ind. 1548. B. M. t. 2209. Syns., *R. armatus* and *R. major*. Castor-oil Plant.
 — *Gibso'nii*. Leaves bronzy-purple.
 — *ine'rmis*. 6. Purple. India. 1758. Jacq. Ic. t. 195.
 — *Kra'ppa*. White. August. 1827.
 — *leucocarpus*. White. August. 1827.
 — *li'vidus*. 8. Purple. July. Cape of Good Hope. 1795. Jacq. Ic. t. 196. Greenhouse evergreen.
 — *macrophy'lus*. White, red. August. 1827.
 — *ma'jor*. See *R. communis*.
 — *ru'tilans*. Reddish-white. August. 1827. Half-hardy biennial.
 — *undulatus*. Red, white. August. 1827.

Rico'tia. (Probably a commemorative name. Nat. ord., *Cruciferae*; Tribe, *Alyssineæ*.)

Hardy annual. Seeds; light, sandy soil. Good for beils, knolls, or rock-works.

R. luna'ria. Lilac, purple. June. Egypt. 1757. Swt. Fl. Gard. ser. 2. t. 411. Syn., *R. ægyptiaca*. B. R. t. 49.

Ridling. Another name for sifting.

Ridging is digging the soil into

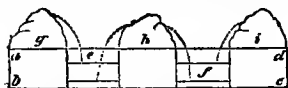
ΛΛΛ parallel ridges in this form, so as to expose it thoroughly to the action either of the atmosphere or of frost.

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 *a*, *b*, *c*, *d* represent a section of the ground to be trenched two feet deep. In the first place the ground is measured



out in longitudinal beds four feet wide; this done, the top spit of the bed *c* is laid on the bed *g*, and the second spit of the bed *c* is laid on *h*. The first or top spit of the bed *f* is then laid on *h*, 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 two or three 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 pulverized, they are levelled down, and others thrown out in the same manner; *g*, *h*, *i* represent the ridges thrown out and left as rough as possible.

Rigida. (From *rigidus*, stiff; the stiffness of the flower-stalk. Nat. ord., *Iridææ*; Tribe, *Moræææ*. Allied to *Tigridia*.)

Half-bardy 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. flammæa*. 5. May. Mexico. 1839. B. R. 1840, t. 16.
 — *immaculata*. 1. Crimson. June. Guatemala. 1839. Fl. Ser. t. 502.
 — *orthantha*. 1½. Crimson. June. Mexico. 1846. Fl. Ser. t. 46.

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**.

Riocreuxia. (Named after A. Riocreux, a celebrated botanical artist. Nat. ord., *Asclepiadaceæ*; Tribe, *Ceropegieææ*. Allied to *Ceropegia*.)

A free-flowering greenhouse climber. Cuttings in sand, in a slight bottom-heat and under a hand-glass; they are best taken in spring. Sandy loam, well drained; give plenty of pot room. Summer temp., 60° to 85°; winter, 45° to 55°.

- R. torulosa*. Yellowish. S. Africa. 1862. Ref. Bot. t. 157.

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.

Ripogonum. (From *ripis*, flexible, and *gonos*, a shoot. Nat. ord., *Liliaceææ*; Tribe, *Smilacæææ*.)

Greenhouse, white-flowered, evergreen climbers, from Australasia. Cuttings of side-shoots, when three inches in length, taken off close to the stem, in sand, under a bell-glass, in May; fibry loam, a little peat, sand, and charcoal, and well-drained. Winter temp., 40° to 48°.

- R. album*. 3. June. Port Jackson. 1820.
 — *parviflorum*. A synonym of *R. scandens*.
 — *scandens*. 2. June. New Zealand. 1820.

Ritchiea. (In honour of Mr. Joseph Ritchie, who travelled in Central Africa, and died 1819. Nat. ord., *Cappariaceææ*; Tribe, *Cappareæææ*.)

- Stove shrubs. For cultivation, see **CRATEVA**.
R. fragrans. 15. Whitish. June. Sierra Leone. 1795. Syns., *Cratæva capparioides* and *C. fragrans*. B. M. t. 596.
 — *polypetalata*. White. Tropical Africa. 1862. B. M. t. 6344.

Rivea. (Named after A. de la Rive, a Genevan botanist. Nat. ord., *Convolvulaceææ*; Tribe, *Convolvuleæææ*. Allied to *Ipomææææ*.)

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 *Ipomææææ*; fibry

loam and rough, sandy peat. Winter temp., 55° to 60°; summer, 60° to 85°.

R. tiliaefolia. White. June. E. Ind. 1812.
A synonym of *Argyrea tiliaefolia*.

— *zeylanica*. See *Argyrea zeylanica*.

Rivina. (Named after A. Q. Rivinus, a German botanist. Nat. ord., *Phytolaccaceæ*; Tribe, *Rivineæ*.)

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. braziliensis. 2. Green. June. Brazil. 1790.

— *humilis*. 2. White. June. W. Ind. 1699. B. M. t. 1781.

— *cane-scens*. 2. White. June. W. Ind. 1804.

— *laevis*. 6. Pink. May. W. Indies. 1733. B. M. t. 2333.

— *pubescens*. White. June. W. Indies. 1699.

— *lancoolata*. 3. June. Brazil. 1815.

— *latifolia*. Purple. July. Madagascar. 1826.

— *octandra*. See *Villamilla octandra*.

— *purpurea-scens*. 2. Pink. June. W. Ind. 1815.

— *tinctoria*. 4. White. May. Caraccas. 1830.

Roan-tree. *Pyrus aucuparia*.

Robe'rgia. (After Lorenz Roberg, Professor of Medecine at Upsal at the commencement of the eighteenth century. Nat. ord., *Connaraceæ*; Tribe, *Connaraceæ*.)

R. frutescens. See *Rourea frutescens*.

Robi'nia. (Named after J. Robin, a French botanist. Nat. ord., *Leguminosæ*; Tribe, *Galegæ*. Cobbett's Locust-tree is *Robi'nia pseudo-acacia*.)

Deciduous, white-flowered trees, from North America, where not otherwise stated. Fortender 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 *hispidia rosea*, or *Rose Acacia*, is a fine object grafted on the *pseudo-acacia* standard high, in a sheltered place not much north of London. The finer varieties of *hispidia rosea*, in cold situations, deserve a place on a conservatory wall, and would be a nice companion to the *Glycine sine'nsis*, etc.

R. Altavana. B. C. t. 1064. See *Caragana Altavana*.

— *capensis*. A synonym of *Calpurnia robitoides*.

— *Caravana*. B. M. t. 1886. See *Caragana arborescens*.

— *coccinea*. A synonym of *Ormosia coccinea*.

— *davurica*. 20. White. May. Davuria. 1820.

— *du'bia*. 30. White, red. May. Syns., *R. ambigua* and *R. hybrida*.

— *frutescens*. See *Caragana frutescens*.

— *grandiflora*. See *Caragana grandiflora*.

— *guineensis*. 6. Guinea. 1822. Stove evergreen.

— *Haladendron*. B. M. t. 1016. See *Halimodendron argenteum*.

R. hispidia. 10. Pink. July. 1743. B. M. t. 311. *Rose Acacia*. Syn., *R. macrophylla*.

— *macrophylla*. 10. Red. May.

— *na'na*. 1. Pink. June. Carolina.

— *rosea*. 10. Red. July. Syn., *R. rosea*.

— *inermis*. See *R. Pseudacacia*, var. *inermis*.

— *jubata*. B. C. t. 522. A synonym of *Caragana jubata*.

— *macrophylla*. See *R. hispidia*.

— *molle*. See *Caragana frutescens*.

— *monstruosa*. N. America.

— *neomexicana*. Red. 1891. Probably a form of *R. Pseudacacia*.

— *pendula*. Peru.

— *procera*. See *R. Pseudacacia*, var. *procera*.

— *Pseudacacia*. 40. May. 1640. Syn., *R. echinata*.

— *amorphofo'lia*. 3. White, red. May.

— *angustifolia*. Garden variety. 1889.

— *crispa*. 40. June.

— *Decaisena*'na. Rosy pink. 1863.

— *De-la'ru'ea*. 40. Yellow. May.

— *inermis*. 40. May. Syn., *R. inermis*.

— *latifolia*. 30. May.

— *macrophylla*. 30. May.

— *microphylla*. 30. May.

— *monophylla*. Garden variety. 1887.

— *monstruosa*. 30. White, red. May.

— *pendula*. 30. Pink. May.

— *procera*. 30. White, red. May. Syn., *R. procera*.

— *sophorofo'lia*. 30. White, red. May. Syn., *R. sophorofo'lia*.

— *spectabilis*. 30. May. France.

— *stricta*. 30. White, red. May.

— *tortuosa*. 40. May.

— *umbraculifera*. 40. May.

— *purpurea*. 15. Purple. July. 1810. Stove evergreen.

— *rosea*. See *R. hispidia*, var. *rosea*.

— *sepium*. A synonym of *Lonchocarpus septium*.

— *sericea*. A synonym of *Lonchocarpus sericeus*.

— *sophorofo'lia*. See *R. Pseudacacia*, var. *sophorofo'lia*.

— *squamata*. See *Pictetia squamata*.

— *stricta*. See *R. Pseudacacia*, var. *stricta*.

— *tomentosa*. See *Caragana frutescens*.

— *triflora*. A synonym of *Halimodendron argenteum*.

— *vesticaria*. Jacq. Ic. t. 148. Now referred to *Sesbania platycarpa*.

— *violacea*. See *Lonchocarpus violaceus*.

— *viscosa*. 30. Purple. July. 1797.

Rocambo'le (*Allium Scorodo'prasmum*), 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 stems 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 six inches apart each way, and usually two 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., *Crassulaceæ*; Allied to *Bryophyllum*.)

Greenhouse evergreen succulents, from South Africa. For culture, see *CRASSULA*.

- R. albiflora*. See *Crassula albiflora*.
 — *bicolor*. 1. Yellow, scarlet. June. 1810.
 — *biconvexa*. $\frac{1}{2}$. White. July. 1823.
 — *capitata*. White. July. 1822.
 — *coccinea*. 1. Scarlet. July 1710.
 — *flor-albo*. 1. White. July. 1811.
 — *cymosa*. $\frac{1}{2}$. Red. August. 1800.
 — *falcata*. See *Crassula falcata*.
 — *flava*. Yellow. June. 1802.
 — *jasminea*. $\frac{3}{4}$. White. April. 1815.
 — *me'dia*. See *R. versicolor*.
 — *odoratissima*. 1. Pink. June. 1793.
 — *perfoliata*. See *Crassula perfoliata*.
 — *albiflora*. 4. White. July. 1800.
 — *tiniflora*. White. S. Africa. 1861. Syn., *Larochea tiniflora*.
 — *versicolor*. 2. White. May. 1817.

Rock Carrot. *Mon'zia e'dulis*.

Rocket. *He'speris*.

Rocket Larkspur. *Delphi'nium ajacis*.

Rock Lychnis. *Visca'ria*.

Rock Rose. *Cistus*.

Rock Tobacco. *Primuli'na Tabacum*.

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 should be carried into the centre of the space. This soil, besides serving to support the rock-work, will also form a medium for the plants to grow in. Having at hand plenty of large, rough stones, 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 material. Of course, fissures, and similar places intended for the plants which are to cover the rock, must be well packed with good soil, so that the roots may penetrate to the body beneath the stones. The spaces between the stones having been filled with good soil, the roots naturally find their way to the larger feeding area. 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.

In making artificial rock for waterfalls, or other constructions, where the cement used 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.

Rodgersia. (Named after *Admiral Rodgers*, U.S. Navy, commander of the expedition during which it was first discovered. Nat. ord., *Saxifragaceæ*; Tribe, *Saxifragææ*. Allied to *Saxifraga*.)

Hardy herbaceous perennial. Divisions. Rich loam and peat.

- R. japonica*. Gf. t. 708. See *R. podophylla*.
 — *podophylla*. 3. White. Japan. 1872.
 B. M. t. 6691. Syn., *R. japonica*.

Rodriguezia. (Named after *E. Rodriguez*, a Spanish botanist. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidiææ*.)

Stove Brazilian orchids, cultivated in baskets. See *ORCHIDS*.

- R. Barkeri*. B. M. t. 3497. See *Gomezia Barkeri*.
 — *Batema'nni*. Rose. Peru. Syn. *Burlingtonia Batemanni* and *B. rubescens*.
 — *Bungerothi*. $\frac{1}{2}$. Bright carmine-rose. Venezuela. 1888. Lind. t. 127.
 — *caloplectron*. Yellowish. New Grenada. 1871.
 — *candida*. 1. White. April. Demerara. 1834. Syn., *Burlingtonia candida*. B. R. t. 1927.
 — *carnea*. Rose. Columbia. 1844.
 — *cri'spa*. B. R. 1840, t. 54. See *Gomezia crispa*.
 — *decora*. Pink, white. November. Brazil. Syn., *Burlingtonia decora*. B. M. t. 4834.
 — *picta*. A variety with a white lip and purple spots. B. M. t. 5419.
 — *fragrans*. April. Brazil. 1850. Syn., *Burlingtonia fragrans*.
 — *Fuerstend'rgii*. 1. Rose, white, yellow. G. C. 1890, viii. p. 746.
 — *lancoolata*. B. C. t. 676. See *R. secunda*.
 — *laxiflora*. See *Gomezia laxiflora*.
 — *Leeana*. 1. White, yellow. G. C. 1883, xx. p. 38.
 — *picta*. A variety with purplish-mauve lines and spots. 1885.

- R. Lehmanni*. Ochre. New Grenada. G. C. 1882, xix, p. 403.
 — *leochilina*. Yellowish, brown. Costa Rica. 1871.
 — *luticola*. Yellow. G. C. 1883, xix, p. 688.
 — *maculata*. $\frac{1}{2}$. Yellow, brown. May. Brazil. 1837.
 — *obtusifolia*. Brazil.
 — *planifolia*. B. M. t. 3504. See *Gomezia planifolia*.
 — *pubescens*. $\frac{1}{2}$. Snow white. November. Brazil, 1850. Syn., *Burlingtonia pubescens*.
 — *recurva*. See *Gomezia recurva*.
 — *refracta*. White, tinged with purple; lip with dull red spots. Brazil.
 — *rigida*. 1. Purplish, with pink spots. April. Brazil. 1838. Syn., *Burlingtonia rigida*.
 — *secunda*. $\frac{1}{2}$. Dark rose. July. Trinidad. 1820. B. M. t. 3524. Syna., *Rodriguezia lanceolata*, B. C. t. 676 and *Pleurothallis coccinea*.
 — *stenochila*. See *Scelochilus stenochilus*.
 — *suaveolens*. See *Gomezia foliosa*.
 — *venusta*. White. March. Brazil. Syn., *Burlingtonia venusta*.

Roebuck Berry. *Rubus saxatilis*.

Roe'la. (Named after G. Roelle, a Dutch botanist. Nat. ord., *Campanulaceae*; Tribe, *Campanuleae*.)

Greenhouse plants, and all but one from South Africa. *Decurrens* from seed in a gentle hotbed, in spring, planted out in early summer; *muscosa* by division; the rest, being evergreen shrubs, by cuttings of the points of the shoots in sand, under a bell-glass; sandy peat and fibry loam. Winter temp., 45° to 48°.

- R. cilidata*. 1. White, purple. July. 1774. B. M. t. 378.
 — *decurrens*. Andr. Rep. t. 238. See *Wahlenbergia capensis*.
 — *elegans*. $\frac{1}{2}$. Purple. February. 1836. Paxt. Mag. vi, p. 27.
 — *filiformis*. See *R. squarrosa*, var. *Bergii*.
 — *fruticulosa*. Yellow. July. Australia. 1820.
 — *muscosa*. $\frac{1}{2}$. Blue. August. 1802. Herbaceous.
 — *pedunculata*. Blue. June. 1827. Syn., *Prismatocarpus paniculatus*.
 — *squarrosa*. $\frac{1}{2}$. White. July 1787.
 — *Bergii*. Blue. August. 1816. Syn., *R. filiformis*.
 — *spicata*. White. August. 1824.

Roemeria. (Named after J. Y. Roper, a German botanist. Nat. ord., *Papaveraceae*; Tribe, *Eupapaveræ*. Allied to *Glaucium*.)

Hardy annuals. Seeds in the open border, in March or April.

- R. hybrida*. See *R. refracta*.
 — *refracta*. 1. Violet. June. Tauria. 1823. Syn., *R. hybrida*.
 — *vermiculata*. Red. June. Persia. 1829.

Roe'pera. (Named after J. Roper, a German botanist. Nat. ord., *Zygochylaceae*.)

Greenhouse, yellow-flowered, evergreen shrubs, from Australia. Cuttings of the young shoots in sand, under a bell-glass, in spring; also seeds in a slight hotbed; sandy, fibry peat, fibry loam, and a little rough charcoal. Winter temp., 40° to 50°.

- R. aurantiaca*. August. 1837.
 — *fabagifolia*. June. 1822.
 — *fruticulosa*. 3. July. 1820.

Roe'zlia. (Named after M. Roetzl, a collector and introducer of Tropical American plants. Nat. ord., *Melastomaceae*. Allied to *Monochaetum*.)

Stove evergreen shrub. For cultivation, see **PLEROMA**.

- R. granadensis*. Rosy. Columbia. 1872.
 — *regia*. A synonym of *Furcraea Roetzlii* (Nat. ord. *Amaryllidæe*).

Rogation Flower. *Polygala vulgaris*.

Rogie'ra. (Commemorative. Nat. ord., *Rubiaceae*; Tribe, *Rondeletieae*.) See **Rondeletia**.

- R. amœna*. See *Rondeletia amœna*.
 — *cordata*. See *Rondeletia cordata*.
 — *elegans*. See *Rondeletia Roetzlii*.
 — *elegantissima*. See *Rondeletia gratissima*.
 — *latifolia*.
 — *macrophylla*. } See *Rondeletia amœna*.
 — *menchma*. See *Rondeletia amœna*.
 — *Roetzlii*. See *Rondeletia Roetzlii*.
 — *versicolor*. See *Rondeletia amœna*.

Ro'hdea. (In honour of M. Rohde. Nat. ord., *Liliaceae*; Tribe, *Aspidistreeae*.)

Greenhouse, almost aquatic. The name is sometimes spelt RHODEA.

- R. japonica*. Japan. 1865. Syn., *Orentium japonicum*, B. M. t. 898. There are three variegated-leaved varieties.

Roller. This is best made of cast iron, and may be had in various sizes, the most useful having a diameter of either sixteen, eighteen, twenty-two, or twenty-four inches. The roller is best used the day after a fall of rain.

Romanzo'fia. (Named after Count Romanzov, a Russian nobleman. Nat. ord., *Hydrophyllaceae*.)

Hardy perennial herb, suitable for rockwork; it has much the appearance of a *Saxifraga*, and requires the same treatment.

- R. sitchensis*. $\frac{1}{2}$. White. April. Sitcha. 1873. B. M. t. 6109.

Ro'mneya. (Named after Rev. Dr. T. Romney Robinson, an astronomer of Armagh. Nat. ord., *Papaveraceae*; Tribe, *Romneyæ*. Allied to *Platystigma*.)

A fine and showy herbaceous perennial, which, although half-bardy, thrives best and produces larger and more abundant flowers if kept in a cool greenhouse. Seeds sown in spring. Rich sandy loam. Winter temp., 45° to 50°.

- R. Coulteri*. 4. White. California. 1875. Flor. Mag. t. 252.

Romu'lea. (In honour of *Romulus*, the reputed founder of Rome. Nat. ord., *Iridæe*; Tribe, *Ixiæe*.)

Greenhouse, or hardy bulbous plants.

- R. bulbocodium*. $\frac{1}{2}$. Greenish-yellow. June. South Africa. 1810. Syn., *Trichonema caulescens*. B. M. t. 1392. Greenhouse.

- R. Bulbocodium*. †. Yellow, violet. March. South Europe. 1739. Syn., *Isia Bulbocodium*. B. M. t. 265. Hardy.
- *Columnæ*. †. Greenish, white. March. Britain. Syn., *Trichonema Columnæ*. Eng. Bot. ed. 3, t. 1492.
- *cruciatæ*. †. Rose. May. South Africa. 1758. Syn., *Trichonema cruciatum*. B. M. t. 575. Half-hardy.
- *Maco'wani*. Golden yellow, tinged with red. South Africa. 1887. G. C. 1887, i. p. 180, f. 42.
- *pu'dica*. †. Pink, spotted with violet. August. South Africa. 1808. Syn., *Trichonema pudicum*. B. M. t. 1244. Greenhouse.
- *ramifl'ra*. †-1. Yellow, lilac. May. Naples. 1830. Syn., *Trichonema ramiflorum*. Swt. Fl. Gard. t. 596. Hardy.
- *ro'sea*. †. Rose, yellow. July. South Africa. 1818. Syn., *Trichonema roseum*. B. M. t. 1225. Greenhouse.
- *specio'sa*. †. Rose, yellow, violet. May. South Africa. 1808. Syn., *Bulbocodium spectosum*, Andr. Rep. t. 170, *Trichonema spectosum*, B. M. t. 1476, and *Spatalanthus speciosus*, Swt. Fl. Gard. t. 300. Greenhouse.

Rondeletia. (Named after W. Rondelet, a Frenchman. Nat. ord., *Rubiaceæ*; Tribe, *Rondeletiacæ*.)

Stove evergreen shrubs. Cutting 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; fibry peat and fibry 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*. 10. White. August. W. Ind. 1752.
- *amæ'na*. Pink. Guatemala. Syn., *R. versicolor*, *Rogiera amæna*, *Rogiera Menechma*, *Rogiera versicolor*, *Rogiera latifolia*, and *Rogiera macrophylla*.
- *an' mala*. Red, yellow. November.
- *corda'ta*. Pink. Guatemala. 1852. Syn., *Rogiera cordata*.
- *di'scolor*. 6. Red. New Grenada.
- *erioca' rpa*. Yellow. Columbia. 1867. Syn., *R. Purdiei*.
- *erythroneu'ra*. Pink. Tropical America. 1850. Syn., *R. Baekhousii*.
- *grati'ssima*. Pink. Mexico. 1866. Syn., *Rogiera elegantissima*.
- *hirsu'ta*. 5. Yellow. July. Jamaica. 1820.
- *h'irta*. 10. Pink. July. Jamaica. 1770.
- *læviga'ta*. 12. White. July. W. Ind. 1790.
- *laurifo'lia*. 5. White. July. Jamaica. 1824.
- *longifo'ra*. B. M. t. 3977. See *Hindsia longiflora*.
- *odo'rata*. 3. Scarlet. June. W. Indies. 1830. Syn., *R. speciosa*. B. C. t. 1893.
- — *ma'jor*. 3. Scarlet. April. Havannah. Syn., *R. speciosa*, var. *major*.
- *panicu'la'ta*. A synonym of *Wendlandia paniculata*.
- *racemo'sa*. 6. White. July. Jamaica. 1820.
- *Roe'zlii*. Rose. Guatemala. 1849. Syn., *Rogiera Roetzlii*.
- *ro'sea*. Pink. New Grenada. 1859.
- *specio'sa*. B. C. t. 1893. See *R. odorata*.
- — *ma'jor*. See *R. odorata*, var. *major*.
- *thyrso'idea*. 5. White. July. Jamaica. 1819.
- *tomento'sa*. 6. White. July. Jamaica. 1819.
- *versicolor*. B. M. t. 4679. See *R. amæna*.

Ronnbergia. (Named after M. Ronnberg, director of agriculture and horticulture to the Minister of the Interior of Belgium. Nat. ord., *Bromeliaceæ*; Tribe, *Bromeliaceæ*.)

Stove perennial. A very distinct and remarkable genus among Bromeliads on account of its stalked, entire leaves. For cultivation, see *BILBERGIA*.

- R. columbia'na*. 1. Dark blue, white. Columbia. Syn., *Billbergia columbiana*.
- *Morrenia'na*. Blue, white. Columbia. 1874. Ill. Hort. 1874, t. 177.

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 means of these fibres, so in proportion as they are injured by removal 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 unfer-tilile soil, 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, brocoli, 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 two feet; and the third nearly, or quite, three 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'sa. Rose. (From the Celtic *rhod*, red; prevailing colour. Nat. ord., *Rosaceæ*; Tribe, *Roseæ*.)

For culture, see **ROSE**. A classification of this genus, by J. G. Baker, F.R.S., will be found in the "Journal of Botany," 1885, p. 281; and another by M. Crépin in the Journal of the Royal Horticultural Society, xi. p. 217 (1889).

- R. abyssinica*. White. June. Abyssinia.
 — *acicularis*. 6. Blush. June. Siberia. 1805.
 — *alba*. 4. White. Jn e. South Europe. 1597.
 — *alpina*. 5. Blush. June. South Europe. 1683. B. M. t. 424.
 — — *globosa*; *helleborina*; *hispidella*; *lævis*; *laganaria*; *pilosula*; *pimpinellifolia*; *pyriformis*; *setosa*; *sorbineella*; *suaveolens*; *turbidata*.
 — *anemonæiflora*. See *R. indica*, var. *anemonæiflora*.
 — *anserinaefolia*. 10. White. Summer. Orient.
 — *arvensis*. B. M. t. 2054 See *R. repens*.

- R. Ba'nsia*. 20. White. June. China. 1807. B. M. t. 1954.
 — — *lu'tea*. Pale buff. June. China. 1807.
 — *Beggeria'na*. 6. White. Summer. Afghanistan. 1888.
 — *berberifolia*. See *R. simplicifolia*.
 — *bl'nda*. 1-3. Rose. May. N. America. Syn., *R. fraxinifolia*, B. R. t. 458.
 — *Borre'ri*. 6. Pale red. June. Britain.
 — *bractea'ta*. 2. White. July. China. 1795. B. M. t. 1377.
 — — *scabrid'scula*. 2. White. July. China.
 — *bractea'scens*. A synonym of *R. corifolia*.
 — *Bruno'ni*. B. M. t. 4030. See *R. moschata*.
 — *byzanti'na*. Constantinople. 1888.
 — *cæ'sia*. See *R. canina*, var. *cæ'sia*.
 — *cani'na*. 8. Pale red. June. Britain.
 — — *aciphy'lla*. 8. Pink. June. Britain.
 — — *ægypti'aca*. 8. Pink. June. Egypt.
 — — *borbonia'na*. 8. Purple. June. Bourbon.
 — — *cæ'sia*. 6. Pink, white. July. Scotland.
 — — *dumeto'rum*. 5. Pink. June. England.
 — — *fastigiat'la*. France.
 — — *Forste'ri*. 6. Pink. June. Britain.
 — — *fruteto'rum*. 6. Pink. June. Volhynia. 1818.
 — — *glauca'scens*. 8. June. France.
 — — *Hetscho'ldi*. Seedling variety. 1889.
 — — *Meratia'na*. 8. France.
 — — *microca'rra*. France.
 — — *ni'tens*. 8. June.
 — — *ni'da*. 6. Pink. June. Britain.
 — — *obtusifo'lia*. 8. June.
 — — *Schottia'na*. 8. June. Podolia.
 — — *squarro'sa*. Germany.
 — — *sarculo'sa*. 4. Pink. June. Britain.
 — *caroli'na*. 6. Crimson. June. N. Amer. 1726.
 — *cauca'sea*. 20. Red. June. Iberia. 1798.
 — *centifo'lia*. 3. Pink. June. Caucasus. 1596.
 — — *crista'ta*. 3. Pink. June. France. 1833. B. M. t. 3475.
 — — *musco'sa*. 3. White, red. June.
 — — *musco'sa-crista'ta*. White, red. June. France.
 — — *pompo'nia*. 2. White, red. June.
 — *cinnamo'mea*. 6. Pink. May. Europe.
 — — *dahu'rica*. 6. Red. June. Dahuria. 1824. Syn., *R. dahurica*.
 — — *maja'lis*. 3. Pale red. May. Britain. Syn., *R. majalis*.
 — *dahu'rica*. See *R. cinnamomea*, var. *dahurica*.
 — *damasc'na*. 3. Pink. June. Syria. 1573.
 — — *variega'ta*. Leaflets variegated.
 — *Dickso'ni*. White. June. Garden hybrid.
 — *Donia'na*. See *R. involuta*, var. *Sabini*.
 — — *ho'rrida*. 4. Pink. June.
 — *dumeto'rum*. A variety of *R. canina*.
 — *E'ca*. Golden. Summer. Afghanistan.
 — *Eglantæ'ria* of Linnæus, see *R. lutea*; of Miller, see *R. rubiginosa*.
 — *Engelma'nni*. Colorado. Gard. and For. 1889, p. 376, fig. 121.
 — *Fendle'ri*. Rose. Mexico. 1888. Probably a form of *R. blanda*.
 — *fe'roz*. B. R. t. 420. See *R. rugosa*.
 — — *ni'tens*. See *R. rugosa*, var. *nitens*.
 — *Forste'ri*. See *R. canina*, var. *Forsteri*.
 — *Fortunea'na*. White. June. China. 1846. Fl. Ser. t. 361. A yellow form is figured in B. M. t. 4679.
 — *fraxinifo'lia*. B. R. t. 458. See *R. blanda*.
 — *fruteto'rum*. See *R. canina*, var. *frutetorum*.
 — *ga'lica*. 2. Pink. June. South Europe. 1596.
 — — *A'gatha*. Purple.
 — — *condito'rum*. Asia Minor. 1889.
 — — *inape'rra*. White rose. Vilmorin Rose.
 — — *ine'rmis*. Purple.
 — — *parvifo'lia*. 1. Purple. June. Europe.
 — — *provincia'lis*. White, pink. France. Syn., *R. provincialis*.

- R. gallica pu'mila*. 3. Red. June. Austria. 1810.
 — *trigintipetala*. Kazanlick. 1888.
 — *giga'ntea*. White. Burmah, Siam. 1888. The single flowers are often five inches in diameter.
 — *glutinosa*. Pale bluish. June. Candia. 1821.
 — *Godefroyae*. White. Persia. 1886.
 — *grandis*. See *R. involuta*, var. *Sabini*.
 — *grandiflora*. 4. White. May. Siberia. 1818. B. R. t. 888.
 — *gymnocarpa*. 1-4. Red. June. California.
 — *Hackelia*. Pink. June. South Europe.
 — *hemisphaerica*. 3. Yellow. July. Orient. 1629. Syn., *R. sulphurea*. B. R. t. 46.
 — *hibernica*. 4. Blush. August. Ireland.
 — *hispidula*. 3. White, tinged with yellow. June. 1780. B. M. t. 1570. Syn., *R. lutescens*.
 — *humilis*. Pale bluish. Summer. North America.
 — *triloba*. Petals three-lobed. Gard. and For. 1889, p. 76, fig. 93.
 — *hystrica*. See *R. sinica*.
 — *iberica*. 6. Pink. June. Iberia. 1820.
 — *indica*. 4-20. Red. All seasons. "Native country not clearly known."—Baker. 1739. Common China, or Monthly Rose. Numerous hybrids have been raised from this, such as *borbo'nica*, *Noisettea'na*, *reclinata*, *ru'ga*, *Ternauxia'na*, etc.
 — *anemonaeformis*. 8. Pale bluish. June. China. 1846. Syn., *R. anemonaeformis*.
 — *caryophylla*. Rose.
 — *crucifera*. Blood-red.
 — *florople'no*. Double-flowered.
 — *fragrans*. Rose; semi-double-flowered. Sweet-scented Chinese Rose.
 — *longifolia*. 5. Pink. June. China.
 — *minima*. Syns., *R. Lawrenceana*, B. R. t. 538, and *R. semperflorens*, var. *minima*, B. M. t. 1762. The double-flowered form is known as the "Fairy Rose."
 — *ni'cea*. 3. White, red. July. Gardens. 1831.
 — *ochroleuca*. 2. Cream. June. China. 1824.
 — *odoratissima*. 3. Pale pink. June. China. 1810.
 — *pannosa*. Purple rose.
 — *pu'mila*. 1. Pink. July. China.
 — *semperflorens*. Purple. Syn., *R. semperflorens*. B. M. t. 284.
 — *intermedia*. White. China. 1868.
 — *involucrata*. 3. White. July. India. 1808. B. R. t. 739.
 — *involuta*. 2. Pale red. June. Scotland.
 — *Sabini*. 8. Pale pink. June. Britain. Syns., *R. Doniana* and *R. gracilis*.
 — *Wilsoni*. 3. Dark pink. June. Britain. Eng. Bot. ed. 3, t. 464. Syns., *R. Wilsoni*.
 — *Iwara*. White. Japan. 1861. Syn., *R. Yvarea*.
 — *kamtschatica*. B. M. t. 3149. See *R. rugosa*, var. *kamtschatica*.
 — *Klu'kii*. 6. Pink. July. Tauria. 1819.
 — *lexigata*. See *R. sinica*.
 — *Lawrenceana*. B. R. t. 538. See *R. indica*, var. *minima*.
 — *la'xa*. 3. White, yellowish. July. Siberia.
 — *Lindleyi*. Red. July. N. Amer.
 — *livida*. 4. Red. July. N. Amer. 1724.
 — *lutea*. 3. Yellow. June. Germany. 1596. B. M. t. 363.
 — *punicia*. 3. Yellow, scarlet. June. Austria. 1596.
 — *subrubra*. 4. Yellow, red. June.
 — *lutescens*. See *R. hispidula*.
 — *macrophylla*. 6. Red. June. Temperate Himalayas and China.
 — *majalis*. See *R. cinnamomea*, var. *majalis*.
 — *micrantha*. Pale red. June. Britain.
- R. microcarpa*. 10. White. July. China. 1822.
 — *microphylla*. 3. Blush. September. China. 1828. B. R. t. 919.
 — *alba*. 3. White.
 — *minutifolia*. Pink or white. California. 1888. Gard. and For., 1888, i. p. 102, f. 22.
 — *mollis*. 6. Red. June. Caucasus. 1818. Syn., *R. mollissima*.
 — *pomifera*. Red. Summer. 1886. Syn., *R. pomifera*.
 — *mollissima*. Eng. Bot. ed. 3, t. 466. See *R. mollis*.
 — *montana*. 6. Whitish to rose. Summer. South Europe.
 — *Montezumae*. 3. Pale red. June. Mexico. 1825.
 — *moschata*. 12. White. August. Bombay. 1596. Jacq. H. Schoenb. iii. t. 280.
 — *multiflora*. 12. Red. June. China. 1822. Syn., *R. polyantha*.
 — *Boursau'ltii*. 12. Pink. June.
 — *carnea*. Red. June. China. 1822.
 — *Cre'villei*. 20. Purple. June. China. 1824. Seven-sisters.
 — *Russelliana*.
 — *myriacantha*. See *R. spinosissima*, var. *myriacantha*.
 — *Niphetos striata*. Garden variety. 1888.
 — *nitida*. 2. Red. July. N. America. 1807.
 — *nutka'na*. 6. Pale to bright red. June. Nootka Sound.
 — *omissa*. Rose. France. 1888.
 — *orientale*. Rose. June. Orient.
 — *parviflora*. 2. Flesh-coloured. July. North America. 1724. B. R. t. 452.
 — *phaenicea*. White. June. Orient.
 — *pimpinellifolia*. See *R. spinosissima*.
 — *pisocarpa*. Rose. July. California. 1877. B. M. t. 6857.
 — *Pissardi*. 20. White. Persia. 1880.
 — *platyphylla*. 1886. A broad-leaved form of *R. multiflora*.
 — *polyantha*. See *R. multiflora*.
 — *provincialis*. B. M. t. 407. See *R. gallica*, var. *provincialis*.
 — *pulchella*. 2. Red. June. 1824.
 — *Ra'pa*. 4. Red. July. North America.
 — *repens*. 8. White, yellow. June. Europe. Syn., *R. arvensis*.
 — *Andersoni*. Pale flesh-coloured. June. Britain. Syn., *R. arvensis*, var. *Andersoni*.
 — *capreolata*. 20. White. August. Scotland. Syn., *R. Ayrshirea*. Ayrshire Rose.
 — *reversa*. See *R. spinosissima*, var. *reversa*.
 — *rubella*. 4. Pale or deep red. June. Europe. Varieties of this are:—*gentilis*, *reversa*, and *stricta*.
 — *rubifolia*. 6. Pale red. August. N. Amer.
 — *rubiginosa*. 5. Pink. June. Britain. Eglantine or Sweetbriar. Syn., *R. Eglantaria* of Miller. Forms of this are:—*aculeatissima*, *flexuosa*, *grandiflora*, *Lyd'ni*, *ma'jor*, *nemoralis*, *parvifolia*, *pu'bera*, *rotundifolia*. Germany. *spinulifolia*, *umbellata*. Germany. *Vailantiana'na*. White.
 — *rubrifolia*. 6. Red. June. South Europe. 1814. B. R. t. 430.
 — *fenestralis*. See *R. setigera*.
 — *hispidula*. Red. June. 1822.
 — *inermis*. Purple. June. Switzerland.
 — *pinnatifida*. Purple. June. Switzerland.
 — *Redoutea*. 3. Pale red. June.
 — *rugosa*. 4. Red. June. Japan. 1845. Syn., *R. fercz*. B. R. t. 420.
 — *calocarpa*. Garden variety. 1891. Rev. Hort. 1891, p. 129, fig. 35.

- R. rugosa fimbriata*. Garden hybrid. 1890.
Rev. Hort. 1890, p. 427, fig. 181.
- *kamtscha'tica*. 3. Red. July. Kamtschatka. 1791. Syn., *R. kamtschatica*, B. M. t. 3149.
- *nitens*. Red. July. 1832. Syn., *R. kamtschatica*, var. *nitens*, B. R. t. 824.
- *Sabini*.
— *gra'cilis*. { See *R. involuta*, var. *Sabini*.
- *sanguisorbifolia*. See *R. spinosissima*.
- *sarmentacea*. 6. Pink. June. Britain.
- *semperflo'rens*. B. M. t. 284. See *R. indica*, var. *semperflo'rens*.
- *sempervirens*. 20. White. June. South Europe. 1629.
- *Leschenaultiana*. 60. Violet. June. Neilgherry.
- *prostrata*. White, or pale red.
- *scandens*. Climbing.
- *se'pium*. 3. Pink. June. Britain.
- *sericea*. White, or pink, or pale straw-coloured. May. India. 1822. B. M. t. 5200.
- *setigera*. 20. Rose, changing to white. June. North America. Syn., *R. rubrifolia*, var. *fenestralis*.
- *Sherardii*. 6. Pink. June. England. A form of *R. tomentosa*.
- *simplicifolia*. 3. Deep yellow, with a crimson spot at the base of each petal. June. Siberia and Persia. 1790. Syns., *Rosa berberifolia*, B. M. t. 7096, *Hultheimia berberifolia*, and *Lowea berberifolia*, B. R. t. 1261.
- *si'nica*. White. June. China. 1759. B. M. t. 2847. Syn., *R. levigata*. Cherokee Rose.
- *hystris*. Purple. Syn., *R. hystrix*.
- *spinosissima*. 4. White or pink. May. Britain. Eng. Bot. ed. 3, t. 461. Syns., *R. pimpinellifolia* and *R. sanguisorbifolia*, Burnet or Scotch Rose.
- *altaica*. 4. White. May. Siberia. 1818. Syn., *R. grandiflora*, B. R. t. 888.
- *argentea*. White. Syn., *R. hispida*, var. *argentea*, B. M. t. 1570.
- *myriacantha*. 1. White. May. France. 1820. Syn., *R. myriacantha*.
- *reversa*. Pale yellow. June. Hungary. 1816. B. M. t. 431. Syn., *R. reversa*.
- *stylosa*. Europe.
- *suaveolens*. Pink. June. North America. 1800. American Sweetbriar. A form of *R. rubiginosa*.
- *sua'vis*. 4. Purple. June. 1818.
- *sulphurea*. 4. Yellow. July. Levant. 1629.
- *sylvestris*. See *R. tomentosa*.
- *stylis*. 6. Pink. June. Britain.
- *taurica*. 6. Red. June.
- *tomentosa*. 6. Red, white. June. Britain. Eng. Bot. ed. 3, t. 467. Syns., *R. Sherardii* and *R. sylvestris*.
- *scabriscula*. 6. Pink. June. Britain.
- *turbinata*. 5. Red. June. Germany. 1629.
- *Francofurtiana*. 5. Rose, purple. June. Frankfurt.
- *Orbessana*. 4. Rose-coloured. June.
- *villo'sa*. 6. Red. June. Britain.
- *pomifera*. Red. June. Europe.
- *resinosa*. Red. June. Ireland.
- *Webbia*. 5. Pink. June. Himalaya.
- *Wichuraiana*. White. Japan. Gard. and For. 1891, iv. p. 569, fig. 89.
- *Wilsoni*. See *R. involuta*, var. *Wilsoni*.
- *Woodsii*. 3. Pink. Spring. Missouri. B. R. t. 976.

Rosano'wia. (After *Serge Rosanow*. Nat. ord., *Gesneraceæ*; Tribe, *Gesnerææ*.) A synonym of **Sinningia**. *R. conspicua*. Gfl. t. 712. See *Sinningia conspicua*.

- R. hybrida*. A garden hybrid. 1885.
- *ornata*. White, rose, greenish-yellow. Fl. Ser. t. 2423-4. This is a hybrid derived from *Sinningia conspicua*.

Rosche'ria. (Derivation not stated. Nat. ord., *Palmææ*; Tribe, *Areceæ*.)

Stove palm, requiring the same treatment as PHENIX.

- R. melanochætes*. 25. Seychelles. 1871. Syn., *Verschaffeltia melanochætes*, Ill. Hort. 1871, p. 54.

Rosco'ea. (Named after *Mr. Roscoe*, the founder of the Liverpool Botanic Garden. Nat. ord., *Scitamineæ*; Tribe, *Zingibereæ*.)

Stove herbaceous perennials, all but one purple-flowered, and all natives of Nepal. Division in spring; sandy loam and leaf-mould. Winter temp., 48° to 55°; summer, 60° to 75°.

- R. capitata*. 1. July. 1819.
- *elatior*.
- *gra'cilis*. { See *Cautleya lutea*.
- *lutea*.
- *purpurea*. 1. July. 1820. B. M. t. 4630.
- *sikkimensis*. A colour variety. 1890.
- *spicata*. 1. July. 1820. Now known as CAUTLEYA 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 five 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 four 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 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 is in 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 three 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 six 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 bunches, 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 super-phosphate 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 consistency 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 three or four feet long. Those shoots are often pithy and green, and ought to be cut clean out, and the rest shortened to one foot or eighteen 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 four feet long, cut one foot of it off, and so reduce it to three 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 standards 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 classes of roses grow to greater perfection in the open air. Amongst *Tea Roses* select *Saffrano, Devoniensis, Comte de Paris, Nephotos, and Princess Clementine. Mrs. Bosanquet, Duchess of Kent*, with a few others, amongst *Chinas*; *Souvenir de Malmaison, Leveson Gower, and Dupetit Thouars*, amongst *Bourbons*. Of the above *Souvenir de 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 them to be put in cold pits, keeping them, since their being repotted, as dry as can be to prevent growth, but not sufficiently so as 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 over-head with lukewarm water, or steaming, may occasionally be had recourse to, as it tends to give strength to the plants, and keeps away the aphid 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. *Jambo'sa.*

Rose Bay. *Epilo'bium angustifolium.*

Rose Champion. *Ly'chnis.*

Rosemary. *Rosmar'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 half an inch deep and six inches apart. The rooted slips, and the cuttings of the young shoots, must be from five to seven inches long, and planted in a shady border, in rows eight or ten 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 ca'li-ro'sa.*

Rose of Jericho. *Anasta'tica.*

Rose of the World. *Came'llia japo'nica ro'sa-mu'ndi.*

Rose Root. *Se'dum Rhodi'ola.*

Rose Rust, and Brand. Roses attacked with this disease present a sickly yellow hue, and if the leaves are examined in an early stage of the disease their under sides will appear sprinkled with yellow dust. In this stage the disease is termed "Rust," at a later period, black dots appear among the yellow dust and constitute the stage of the disease termed "Brand." These appearances are due to a minute fungus. Formerly the Rust and Brand were thought to be produced by two distinct species of fungus, and were even placed in distinct genera; but they are now known to be but two phases of existence of the same fungus, to which the name *Phragmi'dium mucrona'tum* is given.

If the Brand be examined under a microscope it will be found to consist of a multitude of blackish, oblong, pointed, several-celled bodies, borne on colourless stalks as represented in our engraving. The oblong body at length breaks up into as many spores as it has cells. After a shorter or longer period, these spores germinate, and develop a fine, thread-like, branched mycelium. Upon short branches of this mycelium are developed the minute round yellow spores, which constitute what is called Rust. When ripe, these spores become detached from the mycelium; they soon germinate and produce a fresh mycelium, from which the Brand spores are developed, and thus the cycle completed.



The only remedy known to us is to syringe the Rose trees with a very fine hose, and then dust them well with powdered sulphur.

Rose Snowball-Tree. *Viburnum opulus ro'seum*.

Rosmarinus. Rosemary. (From *ros*, dew, and *marinus*, of the sea; maritime plants. Nat. ord., *Labiatae*; Tribe, *Monardece*.)

Hardy evergreens, purple-flowered, and natives of the South of Europe. See ROSEMARY.
R. officinalis. 4. February. 1548. Sibth. Fl. Gr. t. 14.
 — *fo'lis-argenteis*. 4. March. 1548.
 — *fo'lis-aureis*. 12. February. 1548.
 — *latifolia*. 12. February. 1548.

Rostelle'ra, is a corruption of **Rot-tilera**. 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 exuvia 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., *Leguminosae*; Tribe, *Genistaceae*.)

Hardy trailing annual. Seeds in a warm border, in April.

R. trifolia. 2. Sulphur. July. India. Wight. Ic. t. 199.

Rothma'nnia. (After *G. Rothmann*, an African traveller. Nat. ord., *Rubiaceae*.)

R. longifolia. Par. Lond. t. 65. A synonym of *Randia maculata*.

Ro'ttilera. See **Mallotus**.

Rouge Plant. *Rivina tinctoria*.

Roupa'la. (From *roupala*, the Guianan name. Nat. ord., *Proteaceae*; Tribe, *Grevilleae*. Syns., *Rhopala* and *Ropala*.)

Greenhouse evergreen shrubs, from South America. 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; fibry loam and sandy peat. Winter temp., 45° to 48°; a rather sheltered place in summer.

R. aurea. Stem and petioles golden-haired. St. Catherine's, Brazil. 1866.

— *Boissieriana*. Yellow. New Grenada. 1853.

— *complicata*. 8. Columbia. 1853.

— *corcovadensis*. See *R. Pohlii*.

— *crenata*. Brazil.

— *denticata*. 10. Green. June. Guiana. 1802.

— *elegans*. Brazil.

— *heterophylla*. Brazil. Gf. 1863, t. 402

— *macrophylla*. Gf. 1863, t. 405.

— *me' dia*. 10. May. Guiana. 1823.

— *nitida*. Pale yellow. Guiana. 1821.

— *obovata*. 24. Popayan. 1855.

R. Po'hlii. Orange-red. Brazil. Syn., *R. corcovadensis*.
 — *Poortmannii*. Red. G. C. 1883, xix. p. 693. Leaves covered with reddish-brown felt.
 — *sessilifolia*. 10. Green. Guiana. 1803. Syn., *Andriapetalum sessilifolium*.

Roupe'lia. (In honour of the *Roupe'li* family, encouragers of botany. Nat. ord., *Apocynaceae*.)

A shrubby, climbing stove plant. Cuttings of young shoots in sand, under a bell-glass, in heat. Fibry peat and loam. Summer temp., 60° to 85°; winter, 50° to 60°.

R. grata. White, pink. May. Sierra Leone. B. M. t. 4466. The flowers are very fragrant. The fruit is the *Cream Fruit* of its native place.

Rou'rea. (Derivation not stated. Nat. ord., *Connaraceae*; Tribe, *Connarceae*.)

Shrub, requiring stove treatment.

R. frutescens. 6. White. Guiana. 1823. Syn., *Robergia frutescens*.

Rowan Tree. *Pyrus Aucuparia*.

Roxbu'rgia. (Named after *Dr. Roxburgh*, once Director of the Botanic Garden, Calcutta. Nat. ord., *Roxburghiaceae*.) A synonym of **Stemona**.

Stove twining plants, with stems one hundred fathoms long in the hottest parts of India, where the roots are candied with sugar, and taken with tea. Propagated generally by suckers; sandy, fibry loam, and a little leaf-mould, and the usual plant-stove temperature.

R. gloriosa, B. M. t. 1500, *R. gloriosoides*, Wight. Ic. t. 2061, and *R. viridiflora* are all forms of *Stemona gloriosoides*.

Royal Bay. *Laurus nobilis*.

Royal Fern. *Osmunda regalis*.

Roy'dsia. (In honour of *Sir John Royds*, once a judge in the Supreme Court of Judicature of Bengal. Nat. ord., *Capparidaceae*.)

Stove shrub. Good, rich loam. Cuttings of young wood.

R. suaveolens. Dull red, yellowish. January to May. India. B. M. t. 6881.

Roye'na. (Named after *A. Van Royen*, a Dutch botanist. Nat. ord., *Ebenaceae*.) 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 fibry peat. Winter temp., 40° to 48°; summer, 60° to 75°.

R. glabra. 4. September. 1731.

— *hiruta*. 7. Purple. July. 1752.

— *latifolia*. 5. June. 1816.

— *lutea*. 4. May. 1690. B. R. 1846, t. 40.

— *pa'ulis*. 4-15. White, yellowish. 1752.

Syn., *R. pubescens*, B. R. t. 500.

Roylea. (Named after *Professor Royle*, of King's College, London. Nat. ord., *Labiatae*; Tribe, *Stachydeceae*. 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. legans 2. Purple. July. Nepaul. 1824.

Rube'ntia. (From *ruber*, red; the wood is red. Nat. ord., *Celastrineæ*.) A synonym of **Elæodendron**.

R. angustifolia. See *Toddalia angustifolia*.
— *olivifolia*. A synonym of *Elæodendron orientale*.

Ru'bia. Madder. (From *ruber*, red; and the colour of the roots. Nat. ord., *Rubiaceæ*; Tribe, *Galieæ*. Allied to *Galium*.)

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 *tinctorum* madder is obtained. This genus differs from *Galium* in having a 5-lobed, instead of 4-lobed, corolla.

HALF-HARDY EVERGREENS.

R. angustifolia. 2. Pale yellow. July. Spain. 1772.

— *splendens*. 2. Yellow. July. Spain. 1812.

HARDY HERBACEOUS.

R. cordifolia. 4. White. July. Siberia. 1783.

— *tinctorum*. 4. Yellow. July. South Europe. 1596.

Ru'bus. Bramble. (From the Celtic *ruib*, red; colour of the fruit of some of the species. Nat. ord., *Rosaceæ*; Tribe, *Rubecæ*.)

Generally by suckers; frequently by cuttings; also by seeds for obtaining new varieties; also easily obtained by pegging down the points of the shoots in the soil; deep, rich, loamy soil.

GREENHOUSE EVERGREENS.

R. apetalus. 6. Purple. July. Isle of France. 1823. Stove.

— *australis*. White. New Zealand. This is a very curious, slender trailer, very prickly, and remarkable for its leaf variation; the form generally cultivated is almost leafless or with small narrow leaves, but other forms have been broad well-developed leaves.

— *jamaicensis*. 6. Jamaica. 1822.

— *molucaensis*. 3. Red. July. E. Ind. 1810.

— *parvifolius*. 2. Pink. August. China. 1818. B. R. t. 496.

— *pinna'tus*. 5. Pink. June. Madeira. 1789.
— *reflexus*. 3. Red. July. China. 1817. B. R. t. 461.

— *ro'ridus*. August. Madagascar. 1831. B. R. t. 1607.

— *rosæ'folius*. 3. August. Mauritius. 1811. B. M. t. 1783.

— *corona'rius*. 3. August. Mauritius. 1811.

— *rugo'sus*. 3. Red. June. S. Amer. 1819.

— *sanguinolentus*. 4. Red. Bourbon. 1824.

HARDY EVERGREENS.

R. abru'ptus. 8. White. June. Britain.

— *carpinifolius*. 10. White. July. Britain.

— *d'seclor*. 8. White. June. Britain.

— *echina'tus*. 8. White. June. Britain.

— *eglante'ria*. 3. White. May. Australia. 1825.

— *japo'nicus*. White. Japan. 1852.

— *Leightonia'nus*. 10. July. England.

— *Lejeu'nii*. July. Channel Isles.

— *lingua*. 10. July. England.

— *ra'dula*. 8. August. Britain.

— *ru'dis*. July. Britain.

— *hy'stria*. July. Britain.

R. rotundifolius. 10. North of India. 1845.

— *villicaulis*. July. England.

— *argenteus*. July. England.

— *pubescens*. July. England.

— *syvaticus*. July. England.

— *tenuis*. July. England.

— *vulgaris*. 8. June. Britain.

HARDY HERBACEOUS.

R. acari'lis. Rose. June. N. Amer. 1802.

— *areticus*. 4. Pink. June. Britain. B. M. t. 132.

— *chamæ'rus*. 4. White. May. Britain.

— *stellatus*. 4. June. N. Amer. 1824.

HARDY DECIDUOUS.

R. affinis. 8. White. July. Britain.

— *bracte'osus*. 8. White. August. Britain.

— *agrestis*. 6. White. June. Hungary. 1820.

— *americanus*. See *R. villosus*.

— *arv'bus*. 3. White. June. N. Amer. 1823.

— *asper*. 5. White. May. Nepaul. 1821.

— *bifo'rus*. May. Nepaul. 1818. B. M. t. 4678.

— *ca'stus*. 2. White. June. Britain. Dew-berry.

— *arvensis*. 2. White. June. Britain.

— *foliis-variegatis*. 2. White. June. Britain.

— *grandiflorus*. 2. White. June. Britain.

— *parvifolius*. 2. White. June. Britain.

— *canadensis*. 3. White. June. N. Amer. 1811.

— *cane'scens*. 6. White. July. European Alps. 1820.

— *cordifolius*. 8. White. June. Germany. 1816.

— *corylifolius*. 10. White. July. Britain.

— *ca'nus*. 10. White. July. Britain.

— *glandulosus*. 10. White. July. Britain.

— *crategifolius*. White. N. China.

— *cuneifolius*. 3. White. June. N. Amer. 1811.

— *delic'osus*. 3. White. May. Rocky Mountains. 1870.

— *d'stans*. 5. White. July. Nepaul. 1818.

— *diversifolius*. 8. White. August. Britain.

— *dumetorum*. 8. White. August. Britain.

— *ellipticus*. White. Nepaul. 1827. Half-hardy.

— *fastigiatus*. 8. White. July. Britain.

— *fl'ssus*.

— *flagella'ris*. 6. White. June. N. Amer. 1789.

— *inermis*. 12.

— *foliolosus*. 6. White. June. Nepaul. 1818.

— *fruticosus*. 10. Pink. August. Britain.

— *co'ncolor*. 10. July.

— *dalmaticus*. 10. Rose. July. Germany.

— *fl'ore-ro'seople'no*. 10. Pink. July. Britain.

— *foliis-variegatis*. 10. Pink. July. Britain.

— *inermis*. 10. Pink. July. Britain.

— *leucocarpus*. 10. July. Britain.

— *pompo'nus*. 10. White, pink. July. Britain.

— *tau'ricus*. 10. Pinkish. July.

— *fu'sco-ater*. August. Britain.

— *glandulosus*. 10. July. Germany. 1816.

— *h'rtus*. 10. August. Hungary. 1816.

— *h'epidus*. 3. August. Canada. 1768.

— *ho'rridus*. 6. June. Germany. 1817.

— *ide'us*. 5. May. Britain. Raspberry.

— *microphyllus*. 3. May. Britain.

— *Kohle'ri*. 8. August. Britain.

— *laciniatus*. 12. White, red. August.

— *lanuginosus*. 10. June. Siberia. 1820.

— *leucost'chys*. 10. June. Britain.

— *Linkia'nus*. 10. August. Europe. 1821.

— *macrophyllus*. 8. June. Britain.

- R. Me'nkii*. 8. July. Germany. 1816.
 — *nicra'nthus*. 10. Red. July. Nepal. 1822.
 — *ni'tidus*. 3. August. Britain.
 — *nu'tans*. 4. White. Himalaya.
 — *nutka'nus*. 4. August. N. Amer. 1826. B. R. t. 1368.
 — *occidentalis*. 5. May. N. Amer. 1696.
 — *odora'tus*. 7. June. N. Amer. 1800. B. M. t. 328.
 — *pa'llidus*. August. Britain.
 — *panicifo'rus*. 3. Purple. July. Nepal. 1825. B. R. t. 854.
 — *phenicola'sius*. 10. Pink. Japan. June. 1877.
 — *phica'tus*. 10. August. Britain.
 — *rhamnifo'lus*. 10. September. Britain.
 — *rubricau'tis*. 6. June. Germany. 1818.
 — *sa'nctus*. 8. Pink. June. Palestine. 1823.
 — *saxa'tilis*. 4. June. Britain.
 — *Schlechtenda'hlii*. 10. June. Europe. 1823.
 — *Schleiche'ri*. 8. June. Germany. 1818.
 — *seto'sus*. 2. June. N. Amer. 1827.
 — *specta'bilis*. 4. Dark red. May. Columbia. 1827. B. R. t. 1424.
 — *Sprengel'ii*. 10. Pink. August. Germany. 1823.
 — *strigo'sus*. 3. June. N. Amer.
 — *subere'ctus*. 4. August. Britain.
 — *tikiaco'lus*. 6. June. Germany. 1819.
 — *tomento'sus*. 10. August. Germany. 1818.
 — *trifidus*. Rose. Japan. 1838.
 — *trifo'rus*. 3. June. Canada.
 — *trivia'lis*. Fruit black. S. United States. 1889.
 — *ulmifo'lus*. 10. August. Spain. 1823.
 — *ursi'nus*. White. California. 1838.
 — *villo'sus*. 3. August. North America. 1777. Syn., *R. americanus*.
- Ru'ckia.** (In honour of *Mr. Ruck*, a Russian gardener. Nat. ord., *Bromeliaceæ*.) See *Bhodostachys*.
R. Elleme'ti. See *Rhodostachys ordina*.
- Rudbe'ckia.** (Named after *O. Rudbeck*, a Swedish botanist. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)
 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'tis. Yellow, July. Louisiana. 1793. Syn., *R. amplexifolia*, Jacq. Ic. t. 592, and *Dracopis amplexicaulis*.
 — *mi'nor*. A variety with entire leaves. Syn., *Dracopis amplexicaulis*. B. M. t. 3716.
 — *amplexifo'lia*. See *R. amplexicaulis*.
 — *aspe'rri'ma*. 3. Red. White. September. 1832.
 — *columna'ris*. 3. August. 1811. B. M. t. 1601. Syn., *Lepachys colum'naris*.
 — *pulche'rri'ma*. 3. Reddish-yellow. August. 1835.
 — *digita'ta*. 6. August. 1759. Syn., *Lepachys digita'ta*.
 — *Drummo'ndi*. Orange. August. 1836. Paxt. Mag. vi., p. 51.
 — *fulgida*. 3. July. 1760. B. M. t. 1996.
 — *grandifo'ra*. 3½. September. 1830. Syn., *Centrocarpha grandiflora*. Swt. Fl. Gard. ser. 2, t. 87.
 — *he'rta*. 2. August. 1714. Swt. Fl. Gard. t. 82.
 — *lacinia'ta*. 6. August. 1640.
 — *laviga'ta*. 3. July. 1812.
 — *ma'xima*. 4-9. August.
 — *napifo'lia*. 2. July. New Spain. 1824. Syn., *Echinacea napi'folia*.

- R. Newma'nii*. See *R. speciosa*.
 — *pa'llida*. 4. Rose. Summer. 1861. Syn., *Echinacea angustifolia*, B. M. t. 5231.
 — *pinnata*. 3. July. 1803. B. M. t. 2310. Syn., *Lepachys pinnata* and *L. pinnatifida*.
 — *purpu'rea*. 4. Reddish-purple. Summer. 1799. B. M. t. 2. Syn., *Echinacea purpurea*.
 — *interme'dia*. 2-4. Syn., *Echinacea purpurea*, var. *intermedia*.
 — *radula*. 2. August. 1825. Syn., *Helianthus radula*.
 — *sero'tina*. 3. Red. September. 1816. Swt. Fl. Gard. t. 4. Syn., *Echinacea serotina*.
 — *specio'sa*. 3. Orange, dark purple. Summer. G. C. 1881, xvi., p. 372. Syn., *R. Newmanni* and *Echinacea speciosa*.
 — *subtomento'sa*. 3. August. 1802.
 — *tri'loba*. 4. August. 1699. B. C. t. 817.

Ru'dgea. (Commemorative of *Mr. E. Rudge*. Nat. ord., *Rubiaceæ*; Tribe, *Psychotriaceæ*.)

- Stove evergreens. For cultivation, see *COFFEA*.
R. macrophy'lla. Cream. Brazil. 1867. B. M. t. 5653. Syn., *R. leucocephala*.
 — *nivo'sa*. White. Parana. 1866. Syn., *Psychotria nivosa*.

Rudo'phia. (Named after *W. Rudolph*, a Prussian botanist. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Erythrina*.)

Stove evergreen twiners, with scarlet flowers, from Central America. Young side-shoots in sand, under a bell-glass, in a moist, sweet bottom-heat; fibry loam, sandy peat, and a little charcoal. Winter temp., 48° to 60°; summer, 60° to 80°.

- R. du'bia*. See *Centrosema dubium*.
 — *portorice'nsis*. See *R. volubilis*.
 — *ro'sea*. 6. 1826.
 — *vohi'bilis*. July. Mexico and Portorico. 1820. Syn., *R. portoricensis*.

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 six inches apart, and a quarter of an 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. Ruella*, a French botanist. Nat. ord., *Acanthaceæ*; Tribe, *Ruellieæ*. Syn., *Dipterocanthus*.)

Stove shrubs, except where otherwise mentioned. Cuttings of the young shoots in spring or summer, in light, sandy soil, in a sweet hot-bed; fibry loam, leaf-mould, and peat. Winter temp., 48° to 58°; summer, 60° to 85°.
R. acuta'ngula. Scarlet, yellow. May. Brazil.

- R. anisophylla*. B. C. t. 1070. See *Strobilanthes anisophylla*.
 — *australis*. 2. Blue. July. Australia. 1824. Maund. Bot. IV., t. 177.
 — *Baikiet*. 3. Scarlet. December. W. Africa. 1858. Syn., *Stephanophysum Baikiet*.
 — *barlerioides*. A synonym of *Petalidium barlerioides*.
 — *biflora*. 2. Blue. July. Carolina. 1765. Greenhouse.
 — *bractea'ta*. A synonym of *Petalidium barlerioides*.
 — *cernua*. 1. Blue. July. India. 1816.
 — *ciliata*. 2. Purple. July. India. 1806. Syn., *Dipteracanthus ciliatus*.
 — *ciliatiflora*. Purple, blue. September. Buenos Ayres. 1838. B. M. t. 3718.
 — *ciliosa*. 1. Blue. July. Georgia. 1824.
 — *clandestina*. See *R. obtusa*.
 — *coromandeliana*. See *Asystasia coromandeliana*.
 — *cris'tata*. See *Aphelandra cristata*.
 — *dep'ndens*. See *Rungia parviflora*.
 — *Devosiana*. White; leaves purple beneath. Brazil. 1877.
 — *e'legans*. B. M. t. 3389. See *Hemigraphis latebrosa*.
 — *fo'etida*. See *R. rubicaulis*.
 — *formosa*. 2. Scarlet. August. Brazil. 1808. Andr. Rep. t. 610.
 — *fulgida*. 2. Scarlet. July. West Indies. 1804. Andr. Rep. t. 527.
 — *glomerata*. See *Strobilanthes glomeratus*.
 — *hirta*. See *Hemigraphis hirta*.
 — *infundibuliformis*. Andr. Rep. t. 542. See *Crossandra undulata*.
 — *intra'sa*. See *Asystasia coromandeliana*.
 — *la'ctea*. 2. Pale violet. July. Mexico. 1796. Greenhouse.
 — *lilaci'na*. B. M. t. 4147. See *R. solitaria*.
 — *longiflora*. Purplish-lilac. October. Brazil. 1820. Syn., *Stephanophysum longifolium*.
 — *macrantha*. Rosy-purple. 1881. Rev. Hort. 1881, p. 410.
 — *macrophylla*. 3. Scarlet. June. New Grenada. 1840. Syn., *Stemonacanthus macrophyllus*.
 — *obl'qua*. See *Asystasia coromandeliana*.
 — *oblongifolia*. B. C. t. 1889. See *Calophanes oblongifolia*.
 — *obtu'sa*. 2. Blue. July. Barbadoes. 1728. Syn., *R. clandestina*.
 — *ocymoi'des*. See *R. patula*.
 — *ovata*. 2. Blue. July. Mexico. 1800.
 — *panicula'ta*. 3. Purple. August. South America. 1768. B. R. t. 565.
 — *pa'tula*. 1½. Pale violet. July. East Indies. 1774. Jacq. Ic. t. 119. Syn., *Dipteracanthus patulus*. Wight. Ic. t. 1505.
 — *Pea'raei*. Scarlet. Bolivia. 1867. Syn., *Stemonacanthus Pearcei*.
 — *pi'cta*. 1. Blue. June. Domingo. 1826. B. C. t. 1448.
 — *pilo'sa*. 3. Blue. July. South Africa. 1823. Syn., *R. pubescens*.
 — *Porte'lloz*. 1. Rose. South Brazil. 1879. B. M. t. 6498.
 — *pub'esens*. See *R. pilosa*.
 — *Purdie'na*. Crimson. March. 1845. B. M. t. 4298.
 — *ru'ngens*. See *Hygrophila salicifolia*.
 — *ro'sea*. Rose-pink. Brazil. 1818.
 — *rubicaulis*. 1. Blue. July. Mexico. 1823. Syn., *R. foetida*.
 — *Sabina'na*. Purple. Sylhet. 1828. B. R. t. 1238.
 — *salicifolia*. See *Hygrophila salicifolia*.
 — *solita'ria*. 3. Lilac. October. Brazil. Syn., *R. ilacina* and *Dipteracanthus calvescens*. B. M. t. 5106.
 — *specio'sa*. Scarlet. August. Brazil. 1859.

Syn., *Dipteracanthus affinis*. B. M. t. 5414.

- R. stre'pens*. 2. Blue. July. North America. 1726. Greenhouse.
 — *tetra'gona*. 2. Blue. June. Brazil. 1824.
 — *tuberosa*. 2. Blue. July. Jamaica. 1752.
 — *undula'ta*. 2. Blue. East Indies. 1824.
 — *viola'cea*. 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 *Flora Peruviana*. Nat. ord., *Sterculiaceæ*; Tribe, *Dombeyæ*. 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 fibry peat. Winter temp., 50° to 55°; summer, 60° to 80°.

- R. loba'ta*. 6. 1816.
 — *variabilis*. 6. May. 1792.

Ruli'ngia. (Dedicated to *John Philip Ruling*, who wrote an essay on the Natural Order of Plants. Nat. ord., *Sterculiaceæ*; Tribe, *Buettneriæ*.)

Greenhouse shrub. For cultivation, see LASIOPETALUM.

- R. coryllifolia*. 2. White. April. Australia. B. M. t. 3182.
 — *hermanniaefolia*. 4. White. July. Australia. 1818. Syn., *Byttneria hermanniaefolia* and *Lasiopetalum dumoëum*. B. C. t. 1564.
 — *parno'sa*. 3. White. June. Tasmania. 1780. B. M. t. 2191. Syn., *Byttneria dasphylla* and *Commersoniadasyphylla*. Andr. Rep. t. 603.
 — *parviflora*. 1. White. W. Australia. 1868.

Ru'mex. Dock. (A name used by Pliny. Nat. ord., *Polygonaceæ*.)

R. Aceto'sa is the Sorrel. The species of this genus are known to the gardener chiefly as troublesome weeds.

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 its 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. (After *F. F. Rungia*, of Hamburg, born 1795. Nat. ord., *Acanthaceæ*; Tribe, *Ruellieæ*.) See **Ruellia**.
R. parviflora. See *Ruellia dependens*.

Ru'pala. See **Roupala**.

Ru'scus. Butcher's Broom. (From *bruscas*, derived from the Celtic *beus*, box and *kelem*, holly; Box Holly, or Butcher's Broom. Nat. ord., *Liliaceæ*; Tribe, *Asparageæ*.)

Hardy evergreen shrubs. Suckers, and dividing the roots; any common, rich soil. *Androgyneus* is a greenhouse evergreen climber, and like the rest of the Butcher's Brooms, retains the singularity of producing its flowers and fruits on leaf-like expansions of the stem.

- R. aculeatus.* 1. Green. May. England. Eng. Bot. ed. 3, t. 1516.
- *laevis.* 1. Green. April. Portugal.
- *rotundifolius.* 1. Green. March.
- *androgyneus.* B. M. t. 1898. See *Semele androgyna*.
- *hypoglossum.* 1. Pale yellow. May. Italy. 1596.
- *hypophyllum.* 1. Green. June. Italy. 1640. B. M. t. 2049.
- *trifolius.* 2. Green. Zante.
- *latifolius.* Green, white. May. Madeira.
- *racemosus.* 4. Green, yellow. April. Portugal. 1814. Wats. Dendr. II., t. 145.

Rush. *Juncus*.

Rush Broom. *Vimindaria*.

Rush Fern. *Schizæa*.

Rush, Flowering. *Bu'tomus*.

Rush Lily. *Sisyrinchium*.

Russe'lia. (Named after *Dr. Russel*, author of a "Natural History of Aleppo.") Nat. ord., *Scrophulariaceæ*; Tribe, *Che-loneæ*. Allied to *Pentstemon*.)

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. floribunda.* See *R. rotundifolia*.
- *ju'ncea.* 3. July. 1833. B. R. t. 1773.
- *multiflora.* B. M. t. 1528. See *R. sarmen-tosa*.
- *rotundifolia.* 4. June. 1824. Syn., *R. floribunda*.
- *sarmentosa.* 4. July. 1812. Syns., *R. multiflora* and *R. ternifolia*.
- *ternifolia.* 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 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., *Rutaceæ*; Tribe, *Rutææ*.)

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. albiflora.* B. C. t. 1352. A synonym of *Bœninghausenia albiflora*.
- *angustifolia.* B. M. t. 2311. See *R. chalespensis*.
- *bracteosa.* 3. Yellowish. Summer. South Europe. 1772. Syn., *R. macrophylla*. B. M. t. 2018.
- *chalespensis.* 2. Yellowish. Summer. Mediterranean region. 1722. Sibth. Fl. Gr. t. 368. Syn., *R. angustifolia*. B. M. t. 2311.
- *graveolens.* 3. Yellow, green. Summer. South Europe. 1562. Common Rue.
- *variegata.* Leaves with white spots.
- *linifolia.* Yellow. September. Spain. Andr. Rep. t. 565.
- *grandiflora.* B. M. t. 2254. See *R. suaveolens*.
- *macrophylla.* B. M. t. 2018. See *R. bracteosa*.
- *patavi'na.* Yellow, green. June. Orient. 1819. Sibth. Fl. Gr. t. 369.
- *suaveolens.* 2. Yellow. Summer. Tauria. Syn., *R. linifolia*, var. *grandiflora*. B. M. t. 2254.

Ruyschia. (Named after *F. Ruysch*, a Dutch botanist. Nat. ord., *Ternstroemiaceæ*; Tribe, *Marcgraviææ*.)

Stove evergreen. Cuttings of firm shoots in sand, under a glass, in a hotbed; fibry loam and leaf-mould. Winter temp., 55° to 60°; summer, 60° to 85°.

- R. clusæfolia.* 4. Purple. May. W. Ind. 1823.

Rya'nia. (Named after *Dr. Ryan*. Nat. ord., *Bizineæ*.)

Stove evergreen. Cuttings of ripened shoots in sand, in summer, in a hotbed, and under a bell-glass; fibry peat and sandy loam. Usual stove temperatures.

- R. speciosa.* 10. Cream. August. Trinidad. 1823. Syn., *Patrisia pyriferæ*.

Rysso'pterys. (From *ryssos*, wrinkled, and *pteryx*, a wing; form of wing of fruit. Nat. ord., *Malpighiaceæ*; Tribe, *Banisteriaceæ*.)

Stove twiner. Cuttings of firm young shoots in sand and bottom heat, under a bell-glass. Fibry peat and sandy loam. Summer temp., 65° to 90°; winter, 60° to 65°.

R. microste'ma. White. August. Java. 1820.

Rytidophy'llum. See **Rhytidophy'llum.**

S.

Sa'bal. (Probably the South American name of one of the species. Nat. ord., *Palmeæ*; Tribe, *Corypheæ*.)

Stove, or greenhouse, green-flowered Palms. By suckers; light, rich loam. Winter temp., 55° to 60°; summer, 60° to 88°.

S. Adanso'nii. 6. July. Florida. 1810. B. M. t. 1434.

— *Blackburniana.* 6. Bermudas. 1825. Syn., *S. umbraculifera.* Fan or Thatch Palm.

— *no'bitis.* Wien. Gart. Zeit. 1838, p. 240.

— *cœrule'scens.* Columbia. 1875. Greenhouse.

— *glaucescens.* Trinidad. 1825.

— *graminifolia.* 6. South America. 1825.

— *mauriticaeformis.* 60. Venezuela. 1860.

Syn., *Trithrinax mauriticaeformis.*

— *mexica'na.* 20. Mexico. 1834.

— *Palmetto.* 20. Southern United States.

1825. Syn., *Chamaerops Palmetto.* Cabbage Palmetto, or Palmetto Palm.

Greenhouse.

— *serrulata.* See *Serenoa serrulata.*

— *umbraculifera.* See *S. Blackburniana.*

— *Woodfordii.* Trinidad. 1836.

Sabba'tia. (Named after *L. Sabbati*, an Italian botanist. Nat. ord., *Gentianeæ*; Tribe, *Chironiæ*.)

Hardy biennials, except *paniculata* and all from North America. Seeds in a shady, moist border; or if in pots, treated as alpinæ, having a saucer of water under them; the perennial by division in spring.

S. angularis. ½. Purple. July. 1826.

— *calyco'sa.* 1. Dark red. July. 1812. B. M. t. 1600.

— *campes'tris.* 1. Lilac. July. Texas. 1855.

B. M. t. 5015.

— *chloro'des.* ½. Red. July. 1817.

— *grandis.* 1. Rose. July. Salis. Brad. t. 32.

— *paniculata.* 1½. White. May. 1817.

Perennial.

— *stellaris.* Brown, yellow. June. 1827.

Sabi'cea. (From *sabisabi*, the Indian name. Nat. ord., *Rubiaceæ*; Tribe, *Mussendeæ*. Allied to *Hamelia*.)

Stove, white-flowered, evergreen climber. Cuttings of half-ripened shoots in sand, under a glass, in heat; sandy loam, fibry peat, with silver sand and charcoal. Winter temp., 55° to 60°; summer, 60° to 88°.

S. aspera. 6. White. June. Guiana. 1824.

— *hirta.* 6. White. June. Jamaica. 1825.

Sabi'nea. (In honour of *Joseph Sabine*, *F.R.S.*, once Secretary of the Horticultural Society of London. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*.)

Stove shrubs. Sandy loam, well drained.

Cuttings of young shoots in sand, under a hand-glass, in heat.

S. cardinalis. Bright scarlet. West Indies.

— *florida.* Rosy pink. West Indies.

Sac'charum. Sugar Cane. (From *soukar*, its Arabic name. Nat. ord., *Gramineæ*; Tribe, *Andropogoneæ*.)

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. ægyptiacum. 7. Panicle silvery, rivals Pampas Grass. Algeria. 1866.

— *Mu'nja.* 10. Benares. 1805.

— *officinatum.* 10. July. East Indies. 1597.

Bent. and Tr. t. 298. Common Sugar Cane.

— *violaceum.* Stems violet or plum-colour. West Indies. 1824.

— *procerum.* 15. July. Bengal. 1822.

— *sinese.* 6-10. China. 1822. Greenhouse.

Sa'ccia. (In honour of *Dr. Sacc*, agricultural chemist at Cochamba, Bolivia. Nat. ord., *Convolvulaceæ*.)

An ornamental stove hush.

S. elegans. 6. Lilac. Cochamba, Bolivia. 1889.

Saccola'bium. (From *saccus*, a bag, and *labium*, a lip; bagged labellum. Nat. ord., *Orchideæ*; Tribe, *Vandeeæ-Sarcantheeæ*.)

Stove orchids, grown in baskets. See ORCHIDS.

S. acutifolium. ½. Yellow; lip pale pink. Khasya. 1837. Syn., *S. denticulatum.*

B. M. t. 4772.

— *ampullaceum.* Paxt. Mag. xiii. p. 49. See *S. rubrum.*

— *roseum.* See *S. rubrum*, var. *moulmeinense.*

— *bellinum.* Straw-colour, with dark brown blotches; lip white, mauve-purple, yellow. February. Burmah. 1884. Warn.

Orch. Alb. t. 156.

— *Berkeleyi.* White, amethyst. Andaman Islands? G. C. 1883, xix. p. 814.

— *bigibbum.* ½. Yellow. November. Rangoon. 1868. B. M. 5767.

— *bivittatum.* Yellowish, with purple-brown stripes; lip nearly white. East Indies. 1890.

— *Blumei.* Lindl. Sert. t. 47. A synonym of *Rhynchosstylis retrusa*. The following are varieties:

— *ma'jus.* A large variety.

— *Russellianum.* White, mauve-purple. Warn. Orch. Alb. t. 238.

— *borneense.* Ochre-cinnamon. Borneo. G. C. 1881, xv. p. 563.

— *buccatum.* Yellowish, with purple-brown dots. Moulmein. 1871.

— *calceolarre.* Yellow, with red spots. Khasia. 1837. Paxt. Mag. vi. p. 97.

— *calopteryum.* Purple, white. New Guinea. 1882.

— *carinatum.* India. 1838.

— *cerinum.* Orange, apricot-colour. Sunda Isles. G. C. 1888, iv. p. 206.

— *cœlestis.* Blue. Moulmein? G. C. 1885, xxiii. p. 692.

— *compre'ssum.* Cream-white. Manilla.

— *curvifolium.* 1. Cinnabar-red. May. Ceylon. Syn., *S. miniatum.* B. M. t. 5326.

— *flavum.* Clear yellow. Moulmein.

— *densiflorum.* Brown, white. July. Manilla. 1838.

— *pa'lidum.* Manilla. 1837.

- S. denticulatum*. $\frac{1}{2}$. Yellow, red. Sylhet. 1837. Paxt. Mag. vii. p. 145.
 — *di'ves*. Pale yellow. Bombay. 1875.
 — *fl'cum*. Red. New Guinea. 1832.
 — *fra'grans*. White; lip mauve-purple. Burmah. 1882. Flowers with a scent of violets.
 — *furca'tum*. White, with rose-coloured spots. July. India; Java.
 — *gemma'tum*. Purple. May. Sylhet. 1837.
 — *giga'ntium*. White, with amethyst spots; lip mauve-violet. Winter. Burmah. 1864. B. M. t. 5635. Syn., *Vanda densiflora*.
 — — *illu'stre*. A variety with flowers more richly coloured than in the type. Cochin China. Ill. Hort. 1884, t. 517.
 — — *Petotia'num*. Dull white. Cochin China. 1885.
 — — *Regnier'i*. A variety with flowers $1\frac{1}{2}$ inches across. Cambodia. Rev. Hort. 1889, p. 232.
 — *Græ'feti*. Deep purple. Fiji Islands. G. C. 1881, xvi. p. 716.
 — *gurwa'ticum*. White, blotched with amethyst. India. 1879.
 — *gutta'tum*. B. M. t. 4108. A synonym of *Rhynchostylis retusa*.
 — *Harrisonia'num*. See *S. violaceum*, var. *Harrisonianum*.
 — *Hendersonia'num*. Rose-colour; lip white. Borneo. 1862. B. M. t. 6222; Lind. t. 313.
 — *Hutto'ni*. Rose-colour; lip amethyst. Java. 1867. B. M. t. 5681. Syn., *Aërides Huttoni*.
 — *littora'le*. G. C. 1881, xvi. p. 198. Probably a form of *Rhynchostylis retusa*.
 — *macrosta'chyum*. Variegated. Philippine Islands. 1840.
 — *micra'nthum*. Violet. July. East Indies. 1837.
 — *mi'mus*. Rosy-purple, green. Polynesia. 1878.
 — *minia'tum*. $\frac{1}{2}$. Vermilion. March. Java. 1846. B. M. 1847, t. 58.
 — — *citri'num*. Lemon-yellow; centre darker. Philippine Islands. 1884.
 — *ochra'ceum*. Yellow, red. May. Ceylon. 1838.
 — *papillo'sum*. B. R. t. 1552. See *Acampe papillosa*.
 — *Pe'ches*. Ochre with red spots. Moulmein. G. C. 1887, v. p. 447.
 — *præno'sum*. See *Acampe papillosa*.
 — *pumi'ho*. Yellow; lip white, purple. Manilla. 1875.
 — *retu'sum*. A form of *Rhynchostylis retusa*. Fl. ser. t. 1463-4.
 — *ru'brum*. $\frac{3}{4}$. Deep rose-colour. May. India. 1839. Syn., *S. ampullaceum*. B. M. t. 5595.
 — — *moulmeine'nse*. Deep rose. Syn., *S. ampullaceum*, var. *roseum*. Flor. Mag. t. 393.
 — *Smeed'num*. White, mauve, yellow, brown, ochre. G. C. 1887, ii. p. 214.
 — *specio'sum*. $1\frac{1}{2}$. Purple, spotted. May. Bombay. 1840. Syn., *Aërides maculosum*. B. R. 1845, t. 58.
 — *Turner'i*. Lilac, spotted. June. India. 1878.
 — *viola'ceum*. White, with mauve spots; lip deep mauve. January. Manilla. 1839. Syn., *Vanda violacea*. B. R. 1847, t. 30.
 — — *Harrisonia'num*. Pure white; fragrant. Winter. Pulo Copang. 1864. Syn., *S. Harrisonianum*. B. M. t. 5433.
 — *Witte'num*. Orange, with red spots; lip white, purple. Java. 1884.

Saccolo'ma. (From *sakkos*, a bag, and *loma*, a border; alluding to situa-

tion of the spores. Nat. ord., *Filices*. Allied to Davallia.)

Stove fern. See FERNS.

S. elegans. 8. Tropical America. 1860.

Sacred Bean, Egyptian. *Nelumbo speciosum* or *Nymphaea Lotus*.

Saddle Grafting. See Grafting.

Saddle Tree. *Liriodendron tulipiferum*.

Sadle'ria. (Named after Joseph Sadler, Professor of Botany at Pesth. Nat. ord., *Filices*—*Polypodiaceæ*.)

Stove ferns. For cultivation, see FERNS.

S. cyatheoides. Sandwich Islands. 1877. G. C. 1877, vii. p. 761.

Sad Tree. *Nyctanthes arbor-tri'stris*.

Safflower. *Carthamus*.

Saffron. *Crocus sativus*.

Saffron Meadow. *Colchicum*.

Saffron Thistle. *Carthamus tinctorius*.

Sage. *Salvia officinalis*.

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 five to seven inches in length. All but the top leaves being removed, insert by the dibble almost down to these, in rows six 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 a quarter of an inch deep, and six inches apart. When two or three 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, etc., remove in

early winter and spring, and turn the soil of the beds slightly 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. *Phlomis fruticosa*.

Sage'nia. (From *sagu*, the Malay name of some Palms, which this genus resembles in miniature. Nat. ord., *Filices*. Closely allied to *Nephrodium*.)

Stove, brownish-yellow-spored ferns. See FERNS.

S. calca'rea. June. Isle of Luzon.

— *cicutaria*. 2. Tropics. Syn., *Nephrodium cicutarium*.

— *coadunata*. 4. June. Ceylon. 1845.

— *intermedia*. June. Ceylon.

— *irregularis*. Polynesia. 1884.

— *Laurenceana*. 3. Madagascar. G. C. 1881,

xv. p. 9.

— *mamillosa*. 2. Moluccas. 1886. Ill. Hort. t. 598.

— *platyphylla*. 3. June. Ceylon. 1845.

Sage of Bethlehem. *Pulmonaria officinalis*.

Sageretia. (After *M. Sageret*, a French agriculturist. Nat. ord., *Rhamnaceæ*.)

Stove shrub, with small greenish flowers.

S. hamosa. Green. India and Formosa.

Sage Rose. *Cistus*.

Sagina. (From *sagina*, fatness; presumed nourishing qualities for sheep. Nat. ord., *Caryophyllaceæ*; Tribe, *Alsiaceæ*.)

Insignificant weeds. *S. procumbens*, however, is one of the prettiest of our alpine plants, which makes a close carpet on the ground, spreading far and wide, and has starchy, white flowers. It is not more than half an inch high. *S. pilifera*, var. *au'rea* has golden-yellow foliage and is suitable for carpet bedding.

Sagittaria. Arrow-head. (From *sagitta*, an arrow; the leaves of some species resemble an arrow-head. Nat. ord., *Alismaceæ*; Tribe, *Alismaceæ*.)

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. acutifolia. 1. June. America. 1816.

— *angustifolia*. 1½. July. Essequibo. 1827. B. R. t. 1141.

— *montevide'nsis*. White, crimson. South America. 1888. B. M. t. 6735.

— *obtusifolia*. 2. July. China. 1804. The correct name of this is LIMNOPHYTON OBTUSIFOLIUM.

GREENHOUSE AQUATICS.

S. Donia'na. 1. July. Nepal. 1820.

— *ragami'nea*. 1½. July. Carolina. 1812.

S. hasta'ta. 1½. July. N. Amer. 1818.

— *heterophylla*. 1. July. N. Amer. 1822.

— *lanceifolia*. 1½. June. W. Ind. 1787. B. M. t. 1792.

— *obtusata*. 1. July. N. Amer. 1820.

— *sine'nsis*. 2. October. China. 1812. B. M. t. 1631.

HARDY AQUATICS.

S. falca'ta. 1. July. Carolina. 1812.

— *latifolia*. 1. July. N. Amer. 1818.

— *fl'ore-ple'no*. 1. July. N. Amer.

— *na'tans*. 1. July. Carolina. 1812.

— *rigida*. 1½. June. N. Amer. 1806. B. M.

t. 1632.

— *sagittifolia*. 2. July. England. Eng. Bot.

ed. 3, t. 1436.

— *fl'ore-ple'no*. 1½. July.

Sago Palm. *Metroxylon Sa'gus*.

Sagræ'a. (Named after *Ramon de la Sagra*, a Spaniard. Nat. ord., *Melastomaceæ*; Tribe, *Miconiceæ*. Allied to *Miconia*.)

Stove evergreen shrubs. Cuttings of stubby young side-shoots in spring; sandy peat and fibry loam, with a little charcoal, and sufficient silver sand to keep the soil open. Winter temp., 48° to 60°; summer, 60° to 88°. The two following are the best:

S. hirsuta. 6. White. May. South America. 1823.

— *microphylla*. 2. White. May. Jamaica. 1820. Syn., *Ossæa microphylla*.

— *sessiliflora*. 1. Red. April. Guiana. 1793.

— *umbrosa*. 6. Red. March. South America. 1824.

Sague'rus. See *Arenga*.

Sagus. Sago Palm. (From *sagu*, the Malay name. Nat. ord., *Palmeæ*; Tribe, *Lepidocaryeæ*.)

Stove, green-flowered palms. Suckers and seeds; rich, loamy soil. Winter temp., 60°; summer 60° to 90°, and moist atmosphere.

S. Palma-Pinus. See *Raphia vinifera*.

— *pedunculata*. A synonym of *Metroxylon pedunculata*.

— *Ruffa*. See *Raphia Ruffa*.

— *Rumphi*. See *Metroxylon Sagus*.

— *tedigera*. See *Raphia tedigera*.

— *vinifera*. See *Raphia vinifera*.

St. Andrew's Cross. *Ascy'rum cru'x Andreæ*.

St. Barbara's Herb. *Barbare'a vulga'ris*.

St. Barnaby's Thistle. *Centau'rea solstitia'lis*.

St. Bernard's Lily. *Anthe'ricum Lilia'go*.

St. Dabeoc's Heath. *Dabe'cia polifo'lia*.

Saintfoin. *Onobry'chis sati'va*.

St. George's Herb. *Valeria'na officina'lis*.

St. John's Bread. *Cerato'nia si'liqua*.

St. John's Wort. *Hype'ricum* and *Symphorica'rpus vulga'ris*.

St. Joseph's Lily. *Lilium ca-nidum*.

St. Martin's Flower. *Alstræne-ria pulchra*.

St. Martin's Herb. *Sauvage'siu ere'cta*.

St. Mary's Wood. *Calophyllum inophyllum*.

St. Patrick's Cabbage. *Saxi-fraga umbrosa*.

St. Peter's Wort. *A'scyrum stans*, *Hypêricum A'scyron*, *Primula officinalis*, and *Symphorica'rupus*.

Salacia. (After *Salacia*, the mythical wife of Neptune. Nat. ord., *Celastrineæ*.)

Stove shrubs, or small trees. Sandy loam. Cuttings of ripened wood, in sand, in heat under a bell-glass. See also ANTHODON.

S. prinoi' des. Greenish-yellow. June. East Indies. 1820. Syn., *Johnia coromandeliانا*. Climber.

— *pyrifor'mis*. 5. Orange-yellow. June. Upper Guinea. 1825.

— *Rozbu' rghii*. 4. Orange. June. Chittagong. 1822. Syn., *Johnia salacioides*.

Salad Burnet. *Potè'rium sanguis'orba*.

Salading. See the following:—American Cress, Beet Root, Borage, Burnet, Celeriac, Celery, Chervil, Corn Salad, Cress, Dandelion, Endive, Fenchio, Garden Rocket, Horse-radish, Lettuce, Mint, Mustard, Onions, Pursland, 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., *Coniferæ*.) See **Ginko**.

Hardy deciduous tree. Layers, which require from one to two years to root, unless the soil be kept moist about them; cuttings of the well-ripened shoots, taken off with a heel, and inserted under hand-lights; deep, sandy loam, and dry sub-soil. This is a highly ornamental tree, producing its male and female blossoms on different trees; and it is doubtful if the female plant be in this country. The readiest way to secure fruit would be to graft female shoots on the male plant.

S. adiantifolia. Wats. Dendr. t. 168. A synonym of *Ginko biloba*. In addition to those mentioned on p. 420 there is a variety *macrophylla*.

Salisia of Lindley. (Named after the *Countess de Salis*. Nat. ord., *Myrtaceæ*; Tribe, *Leptospermeæ*. Allied to *Leptospermum*.) A synonym of **Kunzea**. This must not be confounded with *Salisia* of Regel, which is a synonym of **Gloxinia** (Nat. ord., *Gesneraceæ*).

Greenhouse evergreen shrub. Cuttings of young shoots, getting a little firm, in sand, under a bell-glass, in May; peat and loam. Winter temp., 38° to 48°.

S. pulche'lla. Rose. May. Swan River. The proper name of this is **KUNZEA SERICEA**.

Salix. Willow. (From the Celtic *sal*, near, and *lis*, water; place of growth. Nat. ord., *Salicineæ*.)

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. Mexico.

— *Garipe'na*. April. South Africa. 1816.

— *Humboldtia'na*. 10. Peru. 1823. Evergreen.

— *tetraspe'rma*. 20. E. Ind. 1769.

HARDY EVERGREENS.

S. cinere'a. 15. April. Britain.

— *venulo'sa*. 2. April. Scotland.

HARDY DECIDUOUS.

S. acuminata. 15. April. Britain.

— *acutifolia*. 8. April. Caspian Sea to Britain. 1823. Eng. Bot. ed. 3, t. 1309.

— *ægypti'aca*. Egypt.

— *alaterni'des*. April. Switzerland. 1824.

— *alba*. 40. April. Britain.

— *cœrule'a*. 40. May. Britain. Eng. Bot. ed. 3, t. 1310.

— *crispa*. England.

— *vitell'na*. Twigs yellowish. Golden Willow. Eng. Bot. ed. 3, t. 1311.

— *albe'scens*. April. Switzerland. 1824.

— *atnifolia*. April. Europe. 1830.

— *ambigua*. 20. April. Britain.

— *major*. 5. April. England.

— *undulata*. April. England.

— *Ammania'na*. 20. May. Austria. 1821.

— *amygda'lina*. 2. April. Britain.

— *Andersonia'na*. 3. April. Scotland.

— *angustifolia*. 10. March. Pennsylvania. 1811.

— *angustifolia*. 3. April. Caspian. 1825.

— *Ansonia'na*. March. Switzerland. 1827.

— *aquat'ica*. 10. April. Britain.

— *areolata*. 3. June. Scotland.

— *a'tro-purpu'rea*. April. Switzerland. 1824.

— *a'tro-virens*. May. Switzerland. 1824.

— *aur'ita*. 2. April. England.

— *austro'lis*. April. Switzerland. 1824.

— *balsamifera*. 4-10. Eastern North America. 1888.

— *babylonica*. 30. May. Levant. 1730.

— *annular'is*. Leaves twisted.

— *crispa*. May.

— *Napoleo'na*. 16.

— *vulgar'is*. June. England.

— *Bashfordia'na*. Bark bright orange, red when young. April. North France. G. C. 1882. xvii. p. 298.

— *berberifolia*. May. Danria. 1824.

— *betulifolia*. May. Scotland.

— *bicolor*. 5. April. Britain.

— *Borreria'na*. 8. May. Scotland.

— *cœsia*. 3. May. South Europe. 1824.

— *californica*. A variety of *S. repens*.

— *canadida*. 10. April. N. Amer. 1811.

— *canadida'la*. April. Europe.

— *cane'scens*. A synonym of *S. lapponum*.

— *caprea*. 30. April. Britain. Eng. Bot. ed. 3, t. 1311. Common Willow; Goat Willow. There are two varieties:

cinere'a and *pendula*, the Kilmarnock Weeping Willow.

— *carinata*. 3. April. Scotland.

- S. carpinifolia*. April. Germany. 1824.
 — *cerasiifolia*. April. Switzerland. 1824.
 — *chlorophylla*. $\frac{1}{2}$. North America. 1888.
 — *chrysanthos*. April. Norway.
 — *clothaeifolia*. April. Switzerland. 1824.
 — *confertifolia*. April. N. Amer.
 — *conifera*. 10. June. N. Amer. 1820.
 — *cordata*. 6. April. N. Amer. 1811.
 — *cordifolia*. 3. N. Amer. 1811.
 — *coriacea*. 8. April. Switzerland. 1825.
 — *coruscans*. 3. April. Germany. 1818.
 — *contingifolia*. 2. March. Britain.
 — *crassifolia*. April.
 — *Crocea* na. 8. April. Scotland.
 — *cydoniaeifolia*. April. Switzerland. 1824.
 — *damasce* na. 12. April. Scotland.
 — *daphnoides*. April. Switzerland. 1820.
 — *Davallia* na. 6. May. Scotland.
 — *decipiens*. 8. May. England.
 — *decumbens*. May. Switzerland. 1823.
 — *Dicksonia* na. 1. April. Scotland.
 — *discalator*. 8. April. N. Amer. 1811.
 — *Donia* na. 6. April. Scotland.
 — *durra*. April.
 — *eleagnoides*. 4. May. Europe. 1824.
 — *eria* na. April. Switzerland. 1820.
 — *fagiifolia*. Croatia.
 — *falcata*. 4. April. N. Amer. 1811.
 — *ferruginea*. 12. April. Britain.
 — *finmarctica*. 10. April. Sweden. 1825.
 — *forma*. April.
 — *foliolosa*. 6. April. Lapland. 1818.
 — *Forbesia* na. 6. April. Britain.
 — *Forbya* na. 8. April. England.
 — *formosa*. Carinthia.
 — *Forsteria* na. 10. April. Scotland.
 — *fragilis*. 15. April. Britain. Eng. Bot. ed. 3, t. 1306.
 — *fulva*. 2. May. Britain.
 — *argentea*. 4. April. England
 — *foetida*. $\frac{1}{2}$. May. Britain.
 — *incubacea*. 4. May. England.
 — *prostrata*. 1. May. Britain.
 — *repens*. 2. May. Britain.
 — *vulgaris*. May. Britain.
 — *fusca* ta. 2. April. N. Amer. 1811.
 — *geminata*. March. Britain.
 — *glabra* ta. April. Switzerland. 1824.
 — *glauca*. 2. July. Scotland.
 — *grisea*. 6. April. Pennsylvania. 1820.
 — *Grisone* na. 15. April. Switzerland. 1824.
 — *Grisophylla*. April. Switzerland. 1824.
 — *hastata*. 15. May. Lapland. 1780.
 — *arbuscula*. 1. May. Switzerland. 1824.
 — *malifolia*. 6. Britain.
 — *serrulata*. 8. May. Lapland. 1810.
 — *helix*. 10. March. Britain.
 — *helvetica*. 14. April. Switzerland. 1824.
 — *herbacea*. $\frac{1}{2}$. June. Britain.
 — *heterophylla*. April. Switzerland. 1823.
 — *hippophaeifolia*. April. Germany. 1823.
 — *hirta*. 15. April. England.
 — *Hoffmannia*. 30. May. England.
 — *holosericea*. 8. April. England.
 — *Houstonia* na. 4. April. Virginia.
 — *Hoyeria* na. British Columbia. 1891.
 — *humilis*. $\frac{1}{2}$. April. 1820.
 — *incana*. April. Austria. 1821.
 — *incanescens*. March. Switzerland. 1823.
 — *Jacquinii*. 2. April. Austria. 1818.
 — *Kitabelia* na. $\frac{1}{2}$. April. Carpathian. 1823.
 — *lacustris*. March. Switzerland. 1824.
 — *Lambertia* na. 10. March. England.
 — *lana* ta. 2. May. Scotland.
 — *lappinum*. 2. May. Lapland. 1812.
 — *lasiantra lancifolia*. California. Gf. 1887, p. 409, fig. 98.
 — *latifolia*. March.
 — *lauri* na. 8. April. England.
 — *lauro* ra. 12. April. Scotland.
 — *leucophylla*. 40. May. Europe. 1824.
 — *linearis*. 4. April. Switzerland. 1820.
 — *livida*. 1. May. Lapland. 1820.
 — *longifolia*. April. N. Amer. 1819.
 — *lucida*. 8. May. N. Amer. 1811.
 — *Lycivis*. Switzerland.
 — *macrostipulacea*. May. Switzerland. 1824.
 — *mespilifolia*. April. Switzerland. 1824.
 — *Meyeria* na. 20. April. Sweden. 1822.
 — *Michelia* na. 15. April.
 — *mollissima*. 20. April. Germany.
 — *monspeliensis*. May. Montpellier. 1825.
 — *montana*. May. Switzerland.
 — *Muhlenbergia* na. 3. April. N. Amer. 1811.
 — *murina*. April. Switzerland. 1824.
 — *muta* bikk. March. Switzerland. 1824.
 — *myricoides*. 8. April. N. Amer. 1811.
 — *myrsinifolia*. 3. May. Scotland.
 — *myrtilloides*. 2. May. Sweden. 1772.
 — *neriosa*. April. Switzerland. 1824.
 — *Nicholsia purpurea* scens. 1889.
 — *ni* gra. 20. May. N. Amer. 1811.
 — *nicotiana*. 10. April. England.
 — *nitens*. 10. April. Scotland.
 — *obovata*. May. N. Amer.
 — *obtusifolia*. April. Lapland. 1818.
 — *oleifolia*. 4. March. Britain.
 — *pallicata*. April. Switzerland. 1823.
 — *paludosa*. April. Germany.
 — *pannosa*. April. Switzerland. 1824.
 — *pa* tens. 4. April.
 — *pa* tula. April. Italy. 1818.
 — *pedicellaris*. 3. March. N. America. 1811.
 — *pendula*. A synonym of *S. babylonica*.
 — *pennsylvanica*. April. N. Amer. 1825.
 — *pentandra*. 15. April. Britain. Eng. Bot. ed. 3, t. 1303. Bay-Leaved Willow.
 — *hermaphrodita*. 15. March. Britain.
 — *petiolaris*. 10. April. Scotland.
 — *petraea*. 7. April. Britain.
 — *phylicifolia*. 10. April. Britain. Tea-leaved Willow.
 — *phyllyreifolia*. 5. April. Scotland.
 — *planifolia*. 2. Labrador. 1811.
 — *polaris*. 1. Lapland. 1820.
 — *pomeranica*. 10. May. Pomerania. 1822.
 — *Pondederia* na. 3. May. Switzerland. 1821.
 — *prinosides*. 10. March. N. Amer. 1811.
 — *procumbens*. $\frac{1}{2}$. June. Scotland.
 — *propinqua*. 8. Britain.
 — *proteifolia*. April. Switzerland. 1820
 — *prunifolia*. 3. April. Scotland.
 — *stylis-longioris*. 3. April. Scotland.
 — *purpurea*. 8. March. England. Eng. Bot. ed. 3, t. 1316-1319. Purple Osier.
 — *amplexicaulis*. Galatian Pontus. 1891.
 — *Purshia* na. May. N. Amer.
 — *pyrenaica*. 1. May. Pyrenees. 1823.
 — *ciliata*. 1. May. Pyrenees.
 — *pyrifolia*. April. Switzerland. 1824.
 — *radicans*. May. Britain.
 — *ramifusa*. April. Britain.
 — *recurvata*. 3. April. N. Amer. 1811.
 — *reflexa*. March.
 — *repens*. Britain. Eng. Bot. ed. 3, tt. 1356-62. Creeping Willow.
 — *reticulata*. $\frac{1}{2}$. June. Britain.
 — *retusa*. $\frac{1}{2}$. May. South Europe. 1673.
 — *rigida*. 15. April. N. Amer. 1811.
 — *pendula*. Branches drooping. 1884.
 — *rivularis*. May. Switzerland. 1824.
 — *rosmarinifolia*. 2. April. Britain.
 — *rotundata*. 15. April. Switzerland. 1824.
 — *rubra*. 8. April. England. Eng. Bot. ed. 3, t. 1320.
 — *helix*. An abnormal form caused by the punctures of a Cynips. Rose Willow.
 — *rupes* tris. 3. April. Scotland.
 — *Russelliana*. 40. April. England.
 — *salviifolia*. Portugal.
 — *Schleicheria* na. April. Switzerland. 1824.
 — *Schraderia* na. 2. May. Germany. 1820.
 — *septentrionalis*. April. Europe.

- S. sericea*. 2. May. Switzerland. 1820.
Serpyllifolia. 1. April. Switzerland. 1818.
Silesiaca. 6. May. Silesia. 1816.
Smithiana. 20. April. England.
Sordida. April. Switzerland. 1824.
Spathulata. 5. April. Germany. 1818.
Spacelata. 2. April. Scotland.
Starkea. April. Europe. 1820.
Stipularis. 6. March. England.
Streptida. April. Switzerland. 1820.
Stuartiana. 4. July. Scotland.
Subalpina. April. Switzerland. 1820.
Tenuifolia. 2. May. Britain.
Tenuior. 15. May. Scotland.
Tetrandra. April. Europe.
Trevipala. 4. March. Scotland.
Trevirana. April. Germany. 1825.
Triaandra. 30. July. Britain. Eng. Bot. ed. 3, t. 1813.
 — *amygdalinea*. Twigs furrowed.
 — *Hoffmanniana*. Twigs not furrowed.
 — *Hoppeana*. 30. May. Austria. 1820.
tristris. 4. April. N. Amer. 1765.
ulmifolia. 1. April. Switzerland. 1821.
undulata. 30. April. England.
 — *lancoleta*. 30. April. England.
uva-ursi. 1. April. Labrador. 1811.
Vacciniifolia. 2. April. Scotland.
Vaccinis. 3. March. Switzerland. 1824.
velutina. April. Europe. 1826.
versicolor. 2. May. Switzerland.
Willarsiana. 6. April. France. 1818.
villosa. 2. April. Switzerland.
viminatis. 12. April. England. Eng. Bot. ed. 3, t. 1322. Common Osier.
virescens. 8. April. Switzerland.
virgata. 1. May.
viridis. 30. May. Britain. Eng. Bot. ed. 3, t. 1308.
vitellina. 15. March. England.
Walsteiniana. 4. April. Alps, Tyrol.
Weigeltiana. 10. Britain.
Willdenoviana. May.
Woolgariana. 12. April. England.
Wulfeniana. 6. May. Carinthia. 1818.

Salix, *Disease of*.—Small tumours often appear upon the leaves of willows. Some of these are caused by a fungus or "rust" known as *Lecythea mixta*, which grows in the internal tissue of the leaf. By its growth these tumours are formed, which at length burst and allow an orange-coloured dust to escape. This dust consists of myriads of minute pear-shaped spores or reproductive bodies. Another species, *Lecythea saliceti*, forms the tumours on the underside only of the leaves. Old trunks are often infested by larger fungi, such as: *Agaricus salignus*, *Polyporus salicinus*, *P. igniarius*, etc.

Sallow. *Salix*, especially *S. caprea*.

Sallow Thorn. *Hippophaë*.

Salmlea. (Named after the Prince *Salm Dyck*. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. Allied to *Spilanthus*.)

Stove evergreen twiners. Cuttings of firm, stubby side-shoots in sand, under a bell-glass, in bottom-heat; rich, fibry loam. Winter temp., 48° to 58°; summer, 60° to 85°.

S. Eupatoriaria. See *S. grandiceps*.

- S. gra'n'diceps*. White. April. Mexico. 1815.
hirsuta. 6. Yellow. August. Jamaica. 1823.
scandens. 6. Yellow. June. Vera Cruz. 1820. B. M. t. 2062. Syna. *Bidens scandens* and *Hopkirkia scandens*.

Salmon Berry. *Rubus spectabilis*.

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., *Nyctagynææ*. Allied to the Marvel of Peru.)

Cuttings in sand, under a glass, in heat; peat and loam. Winter temp., 55° to 60°; summer, 60° to 80°.

- S. fragrans*. A synonym of *Peumus fragrans*. (Nat. ord., *Monimiacææ*.)
lancoleta. 3. Purple. June. W. Ind. 1824. Stove evergreen.
purpurascens. Variegated. June. Cuba. 1830. Stove herbaceous. A synonym of *Cryptocarpus globosus*.

Salpichlæ'na. (From *salpinx*, a tube, and *chlaina*, a cloak; the covering of the spore-cases. Nat. ord., *Filices*.) A synonym of **Blechnum**.

Stove fern. See **FERNs**.

- S. volubilis*. Yellow, brown. July. Brazil. 1842.

Salpichro'a. (From *salpinx*, a tube, and *chroa*, colour; coloured tube. Nat. ord., *Solanaceæ*; Tribe, *Solanææ*.)

Greenhouse evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass; peat and loam. Winter temp., 45° to 50°.

- S. glandulosa*. Yellow. July. Chili. 1844.

Salpiglo'ssis. (From *salpinx*, a tube, and *glossa*, a tongue; refers to the style in the tube of the flower. Nat. ord., *Solanaceæ*; Tribe, *Salpiglossideæ*.)

Annuals and biennials, from Chili; 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. atropurpurea*. B. M. t. 2811. A form of *S. sinuata*.
Barclayana. Swt. Fl. Gard. ser. 2, t. 112. A form of *S. sinuata*.
cocke'nea. Paxt. Fl. Gard. t. 100. A form of *S. sinuata*.
integrifolia. B. M. t. 3113. See *Petunia violacea*.
linearis. B. M. t. 3256. See *Petunia intermedia*.
picta. Swt. Fl. Gard. t. 258. See *S. sinuata*, var. *picta*.
sinuata. 1. Purple. August. 1824. Biennial.
 — *picta*. 5. Variegated. May. 1820. Annual. Syn., *S. picta*.
 — *strami'nea*. 1. Red, white. July. 1824. Annual. Syn., *S. straminea*.
strami'nea. B. M. t. 3365. See *S. sinuata*, var. *straminea*.

Salpiglo'phora. (From *salpinx*, a

tube, and *phora*, bearing; shape of flowers. Nat. ord., *Bignoniaceæ*.)

Greenhouse evergreen shrub. For cultivation, see *CHILOPSIS*.

S. chiloe'nsis. Crimson. Chili. 1862.

Salpixa'ntha. (From *salpinx*, a tube, and *anthos*, a flower. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*. Allied to *Ruellia*.) See **Geissomeria**.

Stove evergreen shrub. Cuttings of young shoots in spring and summer, in sandy soil, in a hotbed; loam and peat, with a little old dung, such as that from a spent mushroom-bed. Winter temp., 48° to 55°; summer, 60° to 85°.

S. coccinea. B. M. t. 4158. See *Geissomeria coccinea*.

Salsafy. *Tragopo'gon porrifolius*.

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, nine inches asunder, scatter the seeds thinly, and cover them half an inch deep. When the plants are two or three inches high, thin to ten 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 they are ready to be taken 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 and used like asparagus, being excellent when quite young and tender. Allow 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, then 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, etc., 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, etc., 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 fertilizing 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 aphid 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 brocoli, 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, etc.

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.

Nitrate 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 for very many years 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**.

Super-Phosphate 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. *Halimodendron*.

Saltwort. *Salsola*.

Saltwort, Black. *Glaux*.

Salvador'a. (In honour of *J. Salvador*, a Spanish botanist. Nat. ord., *Salvadoraceæ*.)

A small, stove, evergreen tree. Soil, well-drained loam. Propagated by cuttings in sand, under a bell-glass, in heat.

- S. indica*. See *S. persica*.
- *persica*. White. June. Arabia, India. 1850. Wight, Ic. t. 1621. Syns., *S. indica* and *S. Wightiana*.
- *Wightiana*. See *S. persica*.

Salvia. Sage. (From *salvo*, to save; medicinal qualities. Nat. ord., *Labiatae*; Tribe, *Monardeæ*.)

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. lanceolata*. 1. Blue. July. W. Ind. 1813.
- *micrantha*. 1. Blue. May. Cuba. 1823.
- *rhombifolia*. Blue. Peru. 1827. B. R. t. 1429.
- *tenuia*. Blue. June. Jamaica, 1821.

HARDY BIENNIALS AND ANNUALS.

- S. Æthiops*. 3. White. May. Austria. 1870.
- *byzantina*. 1. Blue. July. Turkey. 1825.
- *ceratophylla*. 2. Yellow. July. Persia. 1699. Kn. and West. t. 5.
- *ceratophylloides*. 1. Yellow. July. Egypt. 1771.

- S. ero'sa*. 1. Blue. July. Europe. 1817. Annual.
- *foliosa*. 1½. Blue. All seasons. Mexico. 1827. Greenhouse biennial. B. R. t. 1429.
- *hirsuta*. 1. Blue. May. 1801. Annual.
- *hispanica*. 1½. Blue. July. Spain. 1739. Annual. B. R. t. 359.
- *horminum*. 1½. Purple. June. South Europe. 1596. Annual. Sibth. Fl. Gr. t. 20.
- — *rubra*. 1½. Red. July. South Europe. 1596.
- — *viola'cea*. 1½. Purple. June. South Europe. 1596.
- *nepetifolia*. 1. Blue. July. Europe. 1823. Annual.
- *nilotica*. 1. Blue. July. Egypt. 1780. Jacq. Vind. III. t. 92.
- *phlomis'ides*. 2. Blue. May. Spain. 1805.
- *pinnata*. 1. Purple. July. Levant. 1731.
- *sclarea*. 4. White, purple. August. South Europe. 1562. B. R. t. 1008.
- *spinos'a*. 1. White. June. Egypt. 1789. Jacq. Ic. t. 7.
- *tingitana*. 3. White. July. Barbary. 1796.
- *viridis*. 1½. Blue. July. Italy. 1759. Annual. Jacq. Ic. t. 4.

GREENHOUSE AND STOVE EVERGREENS.

- S. africa'na*. 2. Violet. May. Cape of Good Hope. 1731.
- *agglutinata*. Scarlet. June. New Spain. 1827.
- *albo-cœrulea*. White, blue. Mexico. 1817. Stove.
- *amethystina*. 2. Blue. August. Columbia. 1817. Stove.
- *aur'ea*. 3. Blue. July. Cape of Good Hope. 1731. B. M. t. 182.
- *aurita*. 2. Lilac, yellow. May. Cape of Good Hope. 1795.
- *Bethellii*. See *S. involucreta*, var. *Bethellii*.
- *botiviana*. See *S. rubescens*.
- *braziliensis*. Rose. Brazil. III. Hort. t. 432.
- *camphorata*. Rose. South America. 1872.
- *canariensis*. 4. Purple. July. Canaries. 1697.
- *chamædryoides*. 1½. Blue. July. Mexico. 1795. B. M. t. 808.
- *confertiflora*. 3. Red. August. Rio Janeiro. 1838. Stove. B. M. t. 3899.
- *cretica*. ½. Violet. June. Crete. 1760.
- *dasyantha*. Scarlet. New Grenada. 1859.
- *denta'ta*. ½. White. December. South Africa. 1774.
- *discolor*. 3. Dark purple. Andes of Peru. 1833. Syn., *S. mexicana*, var. *minor*. B. M. t. 6772. Stove.
- *dolichostachya*. 6. Scarlet. August. Mexico. 1820.
- *elegans*. 4. Cream. July. Mexico. 1820.
- *occulosa verticillata pauciflora*. Red, white. Andes of Quito. 1890.
- *formosa*. 4. Scarlet. June. Peru. 1783. B. M. t. 376.
- *fulgens*. 5. Scarlet. July. Mexico. 1829. B. R. t. 1356.
- *gesneriiflora*. 3. Scarlet. March. 1846. Lem. Jard. Fl. t. 179. Stove.
- *Greggii*. 3. Carmine. Autumn. North Mexico. 1885. B. M. t. 6812.
- *Heerii*. Scarlet. Peru. 1855.
- *involucrata*. 2. Red. August. Mexico. 1824. B. M. t. 2872. Stove.
- — *Bethellii*. Rosy-crimson. 1881. Seedling variety. Syn., *S. Bethellii*. G. C. 1881, xv. p. 49.
- — *Deschampsiana*. 3. Rose; calyx red. 1869.
- *tamifolia*. 2. Blue. July. S. Amer. 1821. Jacq. H. Schenb. t. 318.
- *mentiana*. Rose-pink; bracts and calyx crimson. Brazil. 1870.

- S. mexicana minor*. G. C. 1833, xix. p. 341, fig. 49. See *S. discolor*.
 — *occidentalis*. 1½. White. July. Jamaica. 1824. Stove.
 — *odorata*. 3. White. July. Bagdad. 1804.
 — *paniculata*. 6. Violet. July. Cape of Good Hope. 1768.
 — *patens*. 10. Blue. September. Mexico. 1888. Trans. Hort. Soc. ix. p. 10; B. M. t. 3808.
 — *phoenicea*. Magenta. Ecuador. 1890.
 — *roseifolia*. Purple. July. Levant. 1872.
 — *rubescens*. Scarlet. Columbia. 1872. Syn., *S. boliviana*.
 — *runcinata*. 2. Blue. July. South Africa. 1774.
 — *ruutilans*. 3. Bright scarlet. Summer. 1873.
 — *scabra*. 2. Blue. June. South Africa. 1774.
 — *Scimpeiri*. 3. White. Abyssinia. 1875.
 — *strictiflora*. 3. Brown, red. December. Peru. 1831. Stove. B. M. t. 3135.
 — *tricolor*. White, scarlet. Mexico.
 GREENHOUSE HERBACEOUS.
S. amarissima. 2. Blue. August. Mexico. 1803. B. R. t. 347.
 — *angustifolia*. 2. Blue. May. Mexico. 1816.
 — *cæsia*. 2. Blue. July. S. Amer. 1813.
 — *cacaliifolia*. 3. Blue. June. Mexico. 1858.
 — *coccinea*. 2. Scarlet. July. S. Amer. 1772.
 — *major*. A large variety.
 — *pseudococcinea*. 3. Scarlet. July. South America. 1797. Syn., *S. pseudococcinea*. B. M. t. 2864.
 — *cælestina*. Blue. Mexico? 1878.
 — *Columbæria*. ½-2. Blue. Summer. California. 1881. B. M. t. 6595. Half-hardy.
 — *desertorum*. 2½. Blue. October. Siberia. 1829.
 — *Goudotii*. 2. Purple. Columbia. 1870. Syn., *S. lantanifolia*.
 — *Grahamii*. 4. Purple. June. September. Mexico. 1829.
 — *Hoveyi*. See *S. ianthina*.
 — *ianthina*. Purple. Peru? 1850. Syn., *S. Hoveyi*.
 — *leucantha*. 2. White. Mexico. 1825.
 — *mexicana*. 2. Scarlet. June. Mexico. 1824. Stove.
 — *nutans*. 2. Blue. June. Abyssinia. 1784.
 — *nubicola*. 3. Yellow. October. Nepal. 1823.
 — *obtusica*. 1½. Carmine. Mexico. 1861.
 — *oppositiflora*. Orange, red. November. Peru. 1847. Stove. Paxt. Mag. xv. p. 53.
 — *polystachya*. 3. Blue. October. Mexico. 1822.
 — *proca*. Purple. March. Africa. 1826.
 — *pulchella*. 2. Scarlet. December. S. Amer. 1821.
 — *purpurea*. 2½. Purple. June. Mexico. 1825. Jacq. H. Schoenb. t. 253.
 — *ringens*. 2. Blue. July. Levant. 1827.
 — *Roezii*. 1½. Scarlet. Mexico. 1861.
 — *rugosa*. 2. White, red. July. South Africa. 1775.
 — *ruutilans*. Scarlet. 1873.
 — *scapiformis*. Pale blue. Formosa. 1888. B. M. t. 6980.
 — *serotina*. 1½. Blue. August. Ohio. 1803. Jacq. Ic. t. 3.
 — *spicidens*. 3. Scarlet. December. Mexico. 1822. B. R. t. 687.
 — *tiliifolia*. 4. Blue. May. Caraccas. 1793. Stove. Jacq. H. Schoenb. t. 254.
 — *tubifera*. 3. Red. August. Mexico. 1824. B. R. 1841, t. 44.
 — *tubiflora*. 4. Scarlet. June. Mexico. 1820.
 — *tubiformis*. Scarlet. July. Mexico. 1844.
 HARDY EVERGREENS.
S. calycina. 1. Pink. August. Greece. 1823. Sibth. Fl. Gr. t. 16.

- S. Habitziana*. White, red. August. Tauria. 1759. B. M. t. 1429.
 — *interrupta*. 4. White. July. Barbary. 1790. Swt. Fl. Gard. t. 169.
 — *lavandulæfolia*. Blue. March. Spain. 1697.
 — *officinalis*. 1. Blue. June. South Europe. 1597. Common Sage. Bent. and Tr. t. 206.
 — *tenuior*. 1. Blue. June. Spain. 1597.
 — *variegata*. 1. Blue. June. South Europe. 1597.
 — *pomifera*. 2. Blue. July. Candia. 1699. Sibth. Fl. Gr. t. 15.
 — *scorodoniifolia*. 2. White. July. 1825.
 HARDY HERBACEOUS.
S. argentea. 3. Yellow. June. Crete. 1759. Jacq. H. Schoenb. t. 6.
 — *asperata*. 2. White. July. Cashmere. B. M. t. 4884.
 — *austrica*. 1. Cream. June. Austria. 1776. B. R. t. 1019.
 — *azulea*. 6. Blue. August. N. Amer. 1806. B. M. t. 1728.
 — *Barrletii*. 3. Blue. April. Spain. 1821.
 — *bicolor*. 2. Red, white. June. Barbary. 1793. B. M. t. 1774.
 — *bractea*. 3. Purple. March. Russia. 1821. B. M. t. 2320.
 — *candellabrum*. 3. White, purple. July. Spain. B. M. t. 5017.
 — *candidissima*. 2. White. Armenia. 1820.
 — *canescens*. 2. Purple. July. Caucasus. B. R. 1838, t. 36.
 — *carduacea*. 1½. Purple. California Proper. July.
 — *clandestina*. ¾. Blue. June. Italy. 1739. Sibth. Fl. Gr. t. 24.
 — *multifida*. ½. Blue. April. Europe. 1822.
 — *compressa*. 2. White. May. E. Ind. 1822.
 — *crassifolia*. 2. Blue. June. South Europe. 1804. Sibth. Fl. Gr. t. 26.
 — *dichroa*. 2-8. Blue, white. Greater Atlas. 1873. B. M. t. 8004.
 — *dissermas*. 2. White. July. Syria. 1773.
 — *farinacea*. 3. Blue, white. Summer. Texas. 1847. Gf. t. 1002.
 — *Forskoëhii*. 1½. Blue. July. Levant. 1800. B. M. t. 988.
 — *glutinosa*. 3. Yellow. July. Germany. 1769.
 — *grandiflora*. 2. Blue. July. South Europe. 1816.
 — *hians*. 1. Blue. June. Cashmere. 1839. B. R. 1841, t. 39.
 — *indica*. 3. Blue. June. India. 1731. B. R. t. 395.
 — *limbata*. Russia. 1838.
 — *Linkia*. Blue. July. Levant. 1823.
 — *lusitanica*. 1½. Blue. June. Spain. 1819.
 — *lyrata*. 1. Purplish. June. N. Amer. 1828.
 — *Moorcroftia*. 3. Pale blue. India.
 — *napiifolia*. 2. Dark blue. June. Italy. 1776. Jacq. Vind. t. 152.
 — *nutans*. 2. Violet. July. South Europe. 1780. B. M. t. 2436.
 — *Pitcheiri*. 2. Blue. New Mexico. 1873. Half-hardy.
 — *porphyra*. 1. Red. Texas.
 — *pratensis*. 4. Violet. May. England. Eng. Bot. ed. 3, t. 1058.
 — *prunelloides*. ½. Blue. June. Mexico. 1838. Paxt. Mag. xi. p. 175.
 — *purpurea*. Purple-red. Hamb. Gart. 1890, p. 484. Annual.
 — *pseudococcinea*. 3. Scarlet. July. S. Amer. 1797. Jacq. Ic. t. 209; B. M. t. 2864. See *S. coccinea*, var. *pseudococcinea*.
 — *pyrenaica*. 4. Blue. July. Pyrenees. 1824.
 — *regia*. 5. Scarlet. July. Mexico. 1739. B. R. 1841, t. 14.
 — *Rœmeriana*. 2. Crimson. July. Texas. 1852.

- S. scabiosæfolia*. 1. White. August. Siberia. 1818.
 — *sclareoides*. Violet. July. South Europe. 1804.
 — *Sibthorpii*. Blue. June. Europe. 1813.
 — *Simsiana*. 3. Pale blue. June. Russia. 1820. E. R. t. 1003.
 — *syvestris*. 2. Purple, violet. August. Germany. 1759.
 — *syriaca*. 1½. White. July. Levant. 1759.
 — *taraxacifolia*. Pink, yellowish. Greater Atlas. 1872. B. M. t. 5991.
 — *triloba*. 2. Red. June. South Europe. 1596. Sibth. Fl. Gr. t. 17.
 — *urticifolia*. 3. Blue. June. N. Amer. 1799.
 — *verbascifolia*. 3. White. May. Iberia. 1823.
 — *verbenæca*. 2. Violet. August. Britain. Eng. Bot. ed. 3, t. 1056.
 — *oblongifolia*. 1½. Blue. September. Europe. 1820.
 — *versicolor*. 1½. Blue, white. July. Spain. 1822.
 — *verticillata*. 3. Blue. August. Germany. 1628.
 — *virgata*. 4. White. September. America. 1758.
 — *viscosa*. 1½. Violet. May. Italy. 1773. Jacq. Ic. t. 5.

Salvinia. (Named in honour of Antonio Maria Salvini, a Professor at Florence in the seventeenth century. Nat. ord., *Marsiliaceæ*.)

This pretty little floating aquatic, which like AZOLLA, is suitable for a stove, greenhouse, or indoor aquarium, is easily managed in the summer time, simply requiring to be let alone or have its water changed, if necessary; but in the winter is often lost through a want of knowledge of its life-history. The mature plant floats on the water and has no true roots, though the row of divided leaves on the under side of the stem look like roots at first sight, and assume their functions. Among these the spore capsules are developed, and from them the plant must be grown annually, as the old plants die in the winter. The best way to preserve the spores is to half fill a broad pan with sandy loam, and then fill up with water; when the water has cleared, place a number of plants upon it, and stand the pan by in a cool greenhouse; in the winter the plants will all die, but the spores will remain in the loam, which must not be thrown away or allowed to dry, and the next spring they will reproduce the plant. AZOLLA should be treated in the same manner.

S. natans. Europe, India.

Sa'mara. (From the Indian name. Nat. ord., *Myrsinææ*.) A synonym of *Myrsine*.

S. pentandra. A synonym of *Myrsine Samara*.

Sambu'cus. Elder-tree. (From *sambuke*, a musical instrument, made of elder-wood. Nat. ord., *Caprifoliaceæ*; Tribe, *Sambuceæ*.)

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. chinensis*. 4. September. China. 1823.
 — *Ebulus*. 3. White, red. June. Britain. Eng. Bot. ed. 3, t. 638.
 — *Gautschii*. Garden form. 1890. Syn., *S. Gautschii*.
 — *humilis*. 2. White, pink. June.

HARDY DECIDUOUS SHRUBS.

- S. au'ra*. See *S. nigra*, var. *foliis-luteis*.
 — *canadensis*. 6. July. N. Amer. 1761.
 — *nigra*. 15. June. Britain. Eng. Bot. ed. 3, t. 637.
 — *foliis argenteis*. 25. June. Britain. Syn., *S. nigra*, var. *variegata*.
 — *foliis-luteis*. 25. June. Britain. Syn., *S. aurea*.
 — *laciniata*. 25. June. Britain. Syn., *S. nigra*, var. *laciniata*.
 — *laciniata au'ra*. 25. June. 1848.
 — *leucocarpa*. 25. June. Britain. Syn., *S. nigra*, var. *albida*.
 — *monstræsa*. 25. June. Britain.
 — *pulverulenta*. 10. June. Britain.
 — *rotundifolia*. 25. June. Britain.
 — *virescens*. 25. June. Britain. Syn., *S. viridis*.
 — *pubens*. 6. N. Amer. 1812.
 — *racemosa*. 12. Green, yellow. May. South Europe and Siberia. 1596. Jacq. Ic. t. 59.
 — *arborescens*. Rocky Mountains. 1888.
 — *flavescens*. 12. Yellow, green. May. South Europe. 1596.
 — *heterophylla*. Leaves simple or divided. Gf. 1891, p. 656, f. 123.
 — *laciniata*. Leaflets with jagged margins.
 — *plumosa*. Leaflets deeply cut. Garden variety. 1886.
 — *purpurea*. 12. Purple. May. South Europe. 1596.
 — *serratifolia*. Leaflets narrow, toothed. 1886.
 — *viridis*. See *S. nigra*, var. *virescens*.

Sa'mbul Plant. *Ferula Sa'mbul*.

Sa'molus. Brookweed. (From the Celtic *sau*, salutary, and *mos*, a pig; meaning pigs'-food. Nat. ord., *Primulaceæ*; Tribe, *Samolææ*.)

White-flowered herbaceous perennials. Division of the plant in spring; sandy loam and peat. *S. Valera'ndi* is hardy; the others require to be kept moist in the greenhouse or pit in winter.

S. campanuloides. 1. July. South Africa. 1816.

- *litoralis*. B. C. t. 435. See *S. repens*.
 — *repens*. 3. August. Australia. 1800. Syn., *S. litoralis*.
 — *Valera'ndi*. 3. July. Britain.

Samphire. See *Crithmum*.

Samy'da. (Greek name of the birch, which they resemble. Nat. ord., *Samydaceæ*; Tribe, *Casariææ*.)

Stove, white-flowered, evergreen shrubs. Cuttings of shoots nearly ripe in sand, under a bell-glass, and placed in bottom-heat, in summer; fibry loam, and sandy, fibry peat. Winter temp., 50° to 60°; summer, 60° to 85°.

S. glabra'ta. 6. August. W. Ind. 1800.

- *macrocarpa*. July. Mexico. 1826.
 — *macrophylla*. 5. E. Ind. 1820. Syn., *S. viridiflora*.
 — *no'bilis*. Brazil. 1866.
 — *rosea*. B. M. t. 550. See *S. serrulata*.
 — *serrulata*. 3. July. W. Ind. 1723. Andr. Rep. t. 202. Syn., *S. rosea*.
 — *viridiflora*. See *S. macrophylla*.

Sanche'zia. (In honour of Don Sanchez. Nat. ord., *Acanthaceæ*; Tribe, *Ruellieæ*. Syn., *Ancylogyne*.)

Stove sub-shrub. For cultivation, see BARLERIA.

S. longiflora. Vinous-purple. April. Guayaquil. 1866. Fl. Ser. t. 2460. Syn., *Ancylomyne longiflora*, B. M. t. 5588.
— *no'bitis*. Yellow, crimson. Ecuador. 1866. B. M. t. 5694. There is a variety with white-striped leaves, and another with glaucous leaves.

Sandal Wood. *Sa'ntalum*.

Sand-box-tree. *Hu'ra cre'pitans*.

Sanderso'nia. (In honour of J. Sanderson, secretary of the Natal Horticultural Society. Nat. ord., *Liliaceæ*; Tribe, *Uvulariaceæ*.)

Warm greenhouse bulb. For cultivation, see HIPPEASTRUM.

S. auranti'ca. 1½. Orange. Natal. 1852. B. M. t. 4716.

Sand Pear. *Pyrus sine'nsis*.

Sand Wood. *Bremontie'ra ammo'xylon*.

Sanguinaire Plant. *Parony'chia argen'tea*.

Sanguina'ria. Puccoon. (From *sanguis*, blood; their red juice. Nat. ord., *Papaveraceæ*; Tribe, *Eupapaver'ceæ*.)

Hardy, tuberous, white-flowered perennials, from North America. Division of the roots, or by seeds in spring; light, loamy soil.

S. canad'ensis. ½. March. N. Amer. 1680. B. M. t. 162.

— *grandifl'ora*. May, N. Amer. Swt. Fl. Gard. ser. 2, t. 147.

Sanguiso'rba. Burnet. (From *sanguis*, blood, and *sorbeo*, to absorb; supposed to be an active vulnerary. Nat. ord., *Rosaceæ*; Tribe, *Poteri'ceæ*.) This is now included in **Poterium**, under the specific names annexed.

Hardy, herbaceous perennials. Division of the roots, and by seeds in spring; common garden-soil. See BURNET.

S. alpi'na. Yellow. June. Altai. 1837. POTERIUM ALPINUM.

— *Anderso'ni*. Pink. July. Siberia. POTERIUM ANDERSONII.

— *canad'ensis*. 3. White. August. Canada. 1633. POTERIUM CANADENSE.

— *ca'rnea*. 4. Red. July. Siberia. 1823. A form of POTERIUM OFFICINALE.

— *maurita'nica*. 4. Pink. July. Algiers. 1810. POTERIUM MAURITANICUM.

— *me'dia*. 4. Flesh. August. Canada. 1785. POTERIUM MEDIUM.

— *negle'cta*. 4. White. July. Europe. 1800. A form of POTERIUM OFFICINALE.

— *offici'na*. 4. Purple. July. Britain. POTERIUM OFFICINALE, Eng. Bot. ed. 3, t. 421.

— — *auricula'ta*. 4. Pink. July. Sicily.

— *pro'cox*. 3. Pink. May. Siberia. 1827. A form of POTERIUM OFFICINALE.

— *ru'bra*. A form of POTERIUM OFFICINALE.

— *sitch'ensis*. Carmine-red. Sitcha. 1889.

— *tenuif'olia*. 4. Pink. July. Dahuria. 1820. POTERIUM TENUIFOLIUM.

Sanicle. *Sani'cula europ'ca*.

Sanicle, Bear's Ear. *Cortu'sa*.

Sansevie'ra. (Named after *Sansevier*, a Swedish botanist. Nat. ord., *Hæmodoraceæ*; Tribe, *Ophiopogoniceæ*. Allied to Phormium.)

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 fibry loam and vegetable mould.

S. au'rea variegata. Leaves pale green, with creamy white hands.

— *ca'rnea*. Andr. Rep. t. 361. See *Reineckea carnea*.

— *cyli'ndrica*. 3. Yellow, green. August. Angola. 1856. B. M. t. 5093.

— *ensif'olia*. See *S. zeylanica*.

— *fulvoc'incta*. See *S. thyrsoiflora*.

— *glau'ca*. } See *S. guineensis*.

— *grandic'usps*. }

— *guinee'nsis*. 2. Green. September. Guinea, 1790. B. M. t. 1179. Syns., *S. glauca*, *S. grandicusps*, *S. latevirens*, and *S. polyphylla*.

— *java'nica*. A synonym of *Dracæna elliptica*.

— *latevi'rens*. See *S. guineensis*.

— *lanugin'osa*. 2. East Indies.

— *longifl'ora*. 2. White. July. West Tropical Africa. 1824. B. M. t. 2634.

— *polyphy'la*. See *S. guineensis*.

— *pu'mila*. See *S. zeylanica*.

— *sessilifl'ora*. B. M. t. 290. See *Reineckea carnea*.

— *spica'ta*. See *S. thyrsoiflora*.

— *stenophy'la*. See *S. zeylanica*.

— *subspica'ta*. Leaves not spotted. S. Africa. 1889.

— *thyrsoifl'ora*. 1. S. Africa. 1790. Syns., *S. fulvocincta* and *S. spicata*.

— *zeyla'nica*. 2. White, green. September. Ceylon. 1731.

Sa'ntalum. Sandal Wood. (From the Persian *sandul*, signifying useful. Nat. ord., *Santalaceæ*; Tribe, *Osyrideæ*.)

Stove evergreens. Cuttings of firm young shoots in sand, under a bell-glass, in heat; sandy, fibry loam and peat, with nodules of charcoal. Winter temp., 50° to 55°; summer, 60° to 85°.

S. al'bum. 10. Purple. East Indies. 1804. B. M. t. 3235.

— — *myrtifolium*. 4. Red. East Indies. 1804.

— *obtusifolium*. 5. Red. Australia. 1823.

Santoli'na. Lavender Cotton. (From *sanctus*, holy, and *linum*, flax; refers to fancied medicinal qualities. Nat. ord., *Compositæ*; Tribe, *Anthemideæ*.)

Hardy, yellow-flowered evergreens. Cuttings in autumn or spring, in a shady place; common soil.

S. alpi'na. July. South Europe. 1798.

— *can'e'scens*. July. Spain. 1683.

— *cha'mæ-cypari'ssus*. 2. July. South Europe. 1573.

— *pectina'ta*. 2. July. Spain. 1822.

— *rosmarini'folia*. 2. August. South Europe. 1683.

— *squarro'sa*. 1½. July. South Europe. 1570.

— *viridis*. 2. July. South Europe. 1727.

EXCLUDED SPECIES. —

S. anthemoides = *Lastospermum anthemoides*.

— *crithmifolia* = — *crithmifolium*.

— *er'cta* = — *pedunculare*.

— *eriosper'ma* = — *eriospermum*.

— *ri'gida* = — *rigidum*.

Sanvitalia. (Named after a Spaniard, *Sanvitali*. Nat. ord., *Compositæ*; Tribe, *Helianthoidæ*.)

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. procumbens*. 1. Yellow. July. Mexico. 1798. B. R. t. 707.

Sauari or Suwarrow Nut. *Caryocar*.

Sap is the fluid which permeates living plants. Two principal sap currents can be distinguished: 1. The ascending or crude sap, which consists of water, with various mineral matters in solution, which has been absorbed by the root-hairs. It passes up the wood vessels of the stem. 2. The descending or elaborated sap passes mainly down the bast tubes to be distributed to whatever point it may be required. In it the food materials exist in such forms as to be immediately available for building up the tissues of the plant.

Sapindus. (From *Sapo-indicus*, Indian Soap; the mucilaginous aril of the seeds is used as soap in America. Nat. ord., *Sapindaceæ*; Tribe, *Sapindæ*.)

Stove evergreen tree. Seed sown in a hotbed in spring; cuttings in sand, under a bell-glass, in heat.

S. Danu'ra. 6. White, red. May. India. 1820. Syn., *Nepheium verticillatum*.

Sapodilla or Sapotilla Plum. *Achras Sapo'ta*.

Sapona'ria. Soapwort. (From *sapo*, soap; the bruised leaves of *S. officinalis* form a lather like soap. Nat. ord., *Caryophyllaceæ*; Tribe, *Sileneæ*. Allied to *Silene*.)

S. calabrica and *ocymoides* 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. *S. ocymoides* and several other trailing kinds are pretty hanging over knolls or rock-works.

HARDY ANNUALS.

- S. calabrica*. ½. Rose. August. Calabria. 1830. Swt. Fl. Gard. ser. 2, t. 79.
 — *cerastoides*. ½. Pink. Russia. 1835.
 — *glutinosa*. 1. Pink. June. Tauria. 1817. Biennial. B. M. t. 2855.
 — *orientalis*. 1. Pink. July. Levant. 1732.
 — *perfoliata*. 2. Pink. June. E. Ind. 1830.
 — *porrigens*. 1. Flesh. July. Levant. 1680. Jacq. Vind. t. 109. Syn., *Gypsophila porrigens*.
 — *vaccaria*. 2. Red. July. Germany. 1596. B. M. t. 2290.
 — *viscosa*. 1. 1836.

HARDY HERBACEOUS.

- S. bellidifolia*. ½. Red. July. Italy. 1825.
 — *cæspitosa*. ½. Red. July. Pyrenees. 1820. G. C. 1881, xv., p. 501. Syn., *S. elegans*. Half-hardy.

S. elegans. See *S. cæspitosa*.

— *illyrica*. A synonym of *Tunica illyrica*.

— *lutea*. ½. Yellow. July. Switzerland. 1804.

— *ocymoides*. ½. Pink. June. France. 1768. B. M. t. 154.

— *officinalis*. 2. Pink. July. England. Eng. Bot. ed. 3, t. 197.

— *hybrida*. Pink. England.

— *prostrata*. Rose. July. Pyrenees. 1824.

Sapo'ta. (The native name. Nat. ord., *Sapotaceæ*.)

Stove evergreen tree, with milky juice. Cuttings.

S. A'chras. 50. Whitish. May. West Indies. 1731. The correct name of this is *ACHRAS SAPOTA*. B. M. t. 3111-12.

Sappan Wood. *Cæsalpinia sappan*.

Saprophyte. A plant obtaining its food from decaying organic matter (*e.g.*, most Fungi), in contrast with a *parasite*, which absorbs its nourishment from living organisms, *e.g.*, Mistletoe.

Sara'ca. (From *Sarac*, the American name. Nat. ord., *Leguminosæ*. Syn., *Jonesia*.)

Stove trees. Cuttings of ripened shoots in sand, in a brisk heat; peat and loam. Summer temp., 60° to 83°; winter, 55° to 60°.

S. inclinata. Yellowish-orange. Java and Sumatra.

— *indica*. 20. Orange. Summer. India. 1796. Syn., *Jonesia Asoca*, B. M. t. 3018, and *J. pinnata*.

— *trian'dra*. 20. Orange. E. Indies. 1820. Syn., *Jonesia scandens*.

Sara'cha. (After *Isidore Saracha*, a Benedictine monk at Madrid. Nat. ord., *Solanaceæ*.)

Greenhouse, or hardy herbs. Seeds of the hardy species sown in the open border in spring. *S. procumbens*. Yellow. Summer. Peru. Syn., *Atropa procumbens*. Jacq. H. Schoenb. t. 492.

— *stapelioides*. 1½. Pale yellow, reddish-brown. Summer. Western America. 1865. Gf. t. 465. Greenhouse.

— *umbellata*. 2-4. Cream-coloured. June. Peru. 1822. Swt. Fl. Gard. t. 85. Syn., *Atropa umbellata*.

— *viscosa*. Yellow. Summer. Western America. Swt. Fl. Gard. ser. 2, t. 323.

Sarc'anthus. (From *sarx*, flesh, and *anthos*, a flower; substance of the flowers. Nat. ord., *Orchideæ*; Tribe, *Vandæ-Sarcantheæ*.)

Stove orchids, grown in baskets. See ORCHIDS.

S. arietinus. Greenish, rosy, yellow. Assam. 1869.

— *belophorus*. Ochre, with purplish-brown stripes. G. C. 1883, xx, p. 262.

— *chrysomelas*. Yellowish, blackish-purple. Moulmein. 1869.

— *croceus*. Saffron. Manilla. 1837.

— *erinaeus*. White, rose. Moulmein. 1867. Syn., *Aerides rubrum* and *A. dasypogon*.

— *filiformis*. Brown, yellow. July. East Indies. 1842. B. M. t. 4639.

— *flævus*. Yellowish-brown, pale yellow. Borneo. 1881.

- S. gutta'tus*. B. R. t. 1443. See *Saccolabium guttatum*.
 — *Hincksia'nus*. Green, red. 1878.
 — *la'rus*. White, purple. Moulmein. 1865. Ref. Bot. t. 109.
 — *Lendya'nus*. Greenish, purple, orange. Saigon. G. C. 1884, xxl., p. 44.
 — *ma'crodon*. Yellowish, purple. Madras. 1873.
 — *mira'bilis*. l. Yellowish. India.
 — *oxyphy'llus*. China. 1837.
 — *pa'llidus*. White. September. E. Ind. 1840.
 — *panicula'tus*. 2½. Yellow, brown. China.
 — *Pari'shii*. Yellow; lips rosy. Moulmein. 1861.
 — *præmo'reus*. See *Saccolabium papillosum*.
 — *rostra'tus*. B. R. t. 981. See *Vanda recurva*.
 — *striola'tus*. Orange, cinnamon. Philippine Islands. G. C. 1882, xviii., p. 168.
 — *succu'sus*. 1. Green. June. China. 1824. B. R. t. 1014.
 — *teretifo'lius*. l. Green, brown. May. China. 1819. B. M. t. 3571. Syn., *Vanda teretifolia*.
 — *Williamso'nii*. Amethyst. Assam. 1865.

Sarcocaulon. (From *sarx*, flesh, and *caulon*, a stem; the stems are fleshy. Nat. ord., *Geraniaceæ*; Tribe, *Geranieæ*.)

Greenhouse herbs or subshrubs. Loam, peat and half-mould mixed. Cuttings in sand under a bell-glass.

- S. Burme'nii*. 1. Purple. May. South Africa. 1800. B. M. t. 5729.
 — *Heritie'ri*. See *Monsonia Heritieri*.
 — *Paterso'ni*. See *Monsonia Patersonii*.

Sarcocephalus. Guinea Peach. (From *sarx*, flesh, and *kephale*, a head; shape and substance of the fruit. Nat. ord., *Rubiaceæ*; Tribe, *Naucleææ*.)

Cuttings in spring, in bottom-heat, under a glass. Stove evergreens, requiring a high, moist temperature when growing; sandy loam, fibry peat, with a little rough charcoal, and good drainage. Winter temp., 55° to 60°; summer, 60° to 88°.

- S. corda'tus*. 10. Yellow. May. Australia and India. 1820. Syn., *Nauclea coadrinata*.
 — *escule'ntus*. 15. Pink. July. Sierra Leone. 1822. Trans. Hort. Soc. v., p. 422, t. 18.

Sarcochilus. (From *sarx*, flesh, and *cheilos*, a lip; fleshy labellum. Nat. ord., *Orchideæ*; Tribe, *Vandæe-Sarcantheeæ*. Syn., *Ornitharium*.)

Stove orchids, grown on blocks. See ORCHIDS.

- S. calce'obus*. White. Manilla. 1844. B. R. 1846, t. 19.
 — *cochinchine'nsis*. Yellow. Cochin China. 1877. Syn., *Camarotis cochinchinensis*.
 — *falca'tus*. White. April. Australia. 1821. B. R. t. 1832.
 — *Fitzgera'ldi*. White, rose. Australia. 1877.
 — *Freema'nii*. Yellow, brown. Assam. 1875. Syn., *Thriasperrnum Freemantii*.
 — *Hartma'nii*. Creamy white, red, yellow Queensland. 1877. B. M. t. 7010. Syn., *Thriasperrnum Hartmannii*.
 — *indusia'tum*. Yellowish, with red spots; lip white. Sunda Isles. 1836. Syn., *Thriasperrnum indusiatum*.
 — *ion'o'smum*. Yellow, cinnamon-brown, red. Manilla. 1844.
 — *oliva'ceus*. Dull purple or brownish; lip white with red stripes. Australia.
 — *pa'llidus*. Pale yellow. Sylhet. Syn., *Micropera pallida*.

S. purpu'reus. Pale rose; lip rosy-crimson. India. Syn., *Camarotis purpurea*.

— *rubric'e'ntum*. Pure white with a red centre. Australia. 1880.

— *te'res*. White, violet, purple. India. Syn., *Ornitharium striatulum*, Paxt. Fl. Gard., i., p. 188, fig. 117.

— *unguicula'tus*. White, red, yellow. Manilla. 1846. Syns., *Phalenopsis Ruckeriana* and *Thriasperrnum unguiculatum*.

Sarcococca. (From *sarx*, flesh, and *kokkos*, a berry; the fruits are fleshy. Nat. ord., *Euphorbiaceæ*.)

Greenhouse, or half-hardy shrubs from the East Indies. *S. Hookeria'na* has proved hardy in the south of England. Propagated by cuttings, in sand, under a bell-glass.

S. Hookeria'na. 4. Yellowish. June. Sikkim. — *prunifo'rmis*. See *S. satignus*.

— *sati'gnus*. 4. Pale yellow. Nepal. 1820. Syn., *S. pruniformis*, B. R. t. 1012.

— *coria'cea*. 4. White. June. Nepal. 1822. Syn., *Pachysandra coriacea*.

— *latifo'lia*. A broad-leaved variety.

Sarcocolla. (From *sarx*, flesh, and *kolla*, glue; some of the species excrete a resinous matter. Nat. ord., *Penæaceæ*.)

Greenhouse shrubs from South Africa. For culture, see PENÆA.

S. imbrica'ta. 1½. Pink. June. South Africa. 1824. Syn., *Penæa imbricata*, B. M. t. 2809.

— *Linna'e'i*. 1. Red. June. South Africa. 1825. Syn., *Penæa Sarcocolla*.

— *squama'ta*. 1. Red. June. South Africa. 1787. Syn., *Penæa squamosa*, B. R. t. 106.

Sarcoglot'tis. (From *sarx*, flesh, and *glottis*, a tongue; shape of the labellum. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Spirantheæ*.) Now united with **Spiranthes**.

Stove orchids, grown in pots. (See ORCHIDS.) Some of the Neottias are by some botanists added to this section.

- S. diure'tica*. See *Spiranthes diuretica*.
 — *Esseri*. See *Spiranthes Esseri*.

Sarcolobus. (From *sarx*, flesh, and *lobus*, a pod; seed-vessel fleshy. Nat. ord., *Asclepiadaceæ*; Tribe, *Marsdenieæ*. Allied to *Pergularia*.)

Stove evergreen twiners, from the East Indies. Cuttings of short, firm side-shoots any time in summer, in sandy soil, under a bell-glass, and in a brisk bottom-heat; fibry loam and peat, with a small quantity of charcoal, dried leaf-mould, and silver sand. Winter temp., 50° to 55°; summer, 60° to 83°.

- S. carina'tus*. 16. Green, yellow. India. 1823.
 — *globo'sus*. 16. White. India. 1823. Wight. Ic. t. 1273.

Sarcopodium. (From *sarx*, flesh, and *pous*, a foot. Nat. ord., *Orchideæ*; Tribe, *Epidendræe-Dendrobieæ*.)

Stove epiphytical orchids, sometimes referred to the genera **DENDROBIUM** and **BULBOPHYLLUM**. See ORCHIDS.

- S. Che'ri*. Olive-green, brown. Manilla.
 — *Dea'rei*. Yellowish, red. G. C. 1883, xx. p. 108, fig. 17.
 — *Godseffa'num*. Yellow, brown. 1890.

- S. La'bbii*. Yellow, orange. Java.
 — *macra'nthum*. Lemon, brown. Singapore.
 — *pilea'tum*. Yellow. Singapore.
 — *psittacoglo'ssum*. Yellow, red. Moulmein.
 1833. B. M. t. 5408.

Sarcoste'mma. (From *sarx*, flesh, and *stemma*, a crown; a fleshy flower-head. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynancheæ*.)

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 fibry loam, a small portion of charcoal, leaf-mould, and sand. Winter temp., 45° to 55°; summer, 60° to 80°.

- S. Brunonia'num*. Yellow. India. 1872. B. M. t. 6002.
 — *campanula'tum*. B. R. 1846, t. 36. See *Philibertia campanulata*.
 — *Swartzia'num*. 6. White. Jamaica. 1820.
 — *vimina'le*. 6. White. July. E. Ind. 1731.

Sarge'ntia. (After Prof. C. Sprague Sargent, Director of the Arnold Arboretum, United States. Nat. ord., *Palmeæ*; Tribe, *Areceæ*.) A synonym of **Pseudophœnix**.

S. arico'cca. A synonym of *Pseudophœnix Sargentii*.

Sarmie'nta. (Named after Mart. Sarmiento, a Spanish botanist. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*.)

Greenhouse perennial trailer. For cultivation, see GESNERA.

- S. re'pens*. Red. Chili. 1862. Fl. Ser. t. 1646.

Sarotha'mnus. (From *saros*, broom, and *thamnus*, shrub; a shrub resembling the Broom. Nat. ord., *Leguminosæ*; Tribe, *Genisteeæ*.) See **Genista**.

S. scopar'ius Andrea'nus. See *Genista Andrea'na*.

Sarrace'nia. Side-saddle Flower. (Named after Dr. Sarrasin, a French physician. Nat. ord., *Sarraceniaceæ*.)

Half-hardy herbaceous perennials, natives of North America, but many garden hybrids have now been raised. Division in spring; fibry 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. Atkinsonia'na*. Garden hybrid.
 — *atrosangu'nea*. See *S. flava*, var. *atrosanguinea*.
 — *Catesba'i*. See *S. flava*, var. *Catesbaei*.
 — *chelsoni*. Garden hybrid between *S. rubra* and *S. purpurea*.
 — *Cou'rtii*. Garden hybrid between *S. purpurea* and *S. psittacina*.
 — *crispa'ta*. White. N. America. 1879. Perhaps a natural hybrid.
 — *de'cora*. Garden hybrid. 1889.
 — *Drummondii*. 2. Purple. June. N. Amer. 1829. Fl. Ser. t. 560. Syn., *S. undulata*.
 — — *alba*. Pitchers marked with white. Garden variety.
 — — *ru'bra*. Pitchers marked with bright red. Garden variety.
 — *exce'llens*. Hybrid between *S. variolaris* and *S. Drummondii*, var. *alba*.

S. exce'llta. Hybrid between *S. flava*, var. *atrosanguinea* and *S. Drummondii*.

- *exorna'ta*. Hybrid between *S. purpurea* and *S. crispa'ta*.
 — *Filde'sii*. See *S. flava*, var. *Catesbaei*.
 — *flava*. 2. Yellow. June. N. America. 1752. B. M. t. 780.
 — — *atrosangu'nea*. Cream-colour, yellow. N. America. 1879. Syn., *S. atrosanguinea*.
 — — *Catesba'i*. Pitchers with red veins. Syn., *S. Catesbaei*, *S. Fildesii?* and *S. flava*, var. *pieta*.
 — — *limba'ta*. Lid of pitcher edged with brownish-crimson.
 — — *ma'xima*. Pitchers large, pale green.
 — — *orna'ta*. Yellow. 1879. Syn., *S. ornata*.
 — — *pi'eta*. See *S. flava*, var. *Catesbaei*.
 — — *Willia'msii*. N. America. 1874. Syn., *S. Williamsii*.
 — *forma'sa*. Hybrid between *S. psittacina* and *S. variolaris*.
 — *illustra'ta*. Hybrid between *S. flava*, var. *pieta*, and *S. Stevensii*.
 — *Maddisonia'na*. Hybrid between *S. variolaris* and *S. psittacina*.
 — *melanorho'da*. Hybrid between *S. Stevensii* and *S. purpurea*.
 — *mi'nor*. 1. Purple, green. April. N. America. 1829. Swt. Fl. Gard. ser. 2, t. 138.
 — *Mitchellia'na*. Hybrid between *S. Drummondii*, var. *rubra*, and *S. purpurea*.
 — *Moo'rei*. Hybrid between *S. flava* and *S. Drummondii*.
 — *Pe'pet*. Hybrid between *S. flava* and *S. rubra*.
 — *porphyronex'ra*. Pitchers veined with purple. 1822.
 — *psittaci'na*. Leaves red-veined, and ends parrot-headed. American Southern States. 1866.
 — *purpu'rea*. 1. Purple. June. N. America. 1640. B. M. t. 849.
 — *ru'bra*. 1. Reddish-purple. May. N. America. 1786. B. C. t. 1163.
 — — *acumina'ta*. Pitchers with crimson veins. Syn., *S. rubra* of B. M. t. 3515.
 — *Stevensii*. Hybrid between *S. purpurea* and *S. flava*.
 — *Swania'na*. Hybrid between *S. variolaris* and *S. purpurea*.
 — *Tollia'na*. Hybrid between *S. Drummondii*, var. *alba*, and *S. flava*.
 — *undula'ta*. See *S. Drummondii*.
 — *variola'ris*. 1. Yellow. June. N. America. 1803.
 — *vitta'ta macula'ta*. Hybrid between *S. purpurea* and *S. chelsoni*.
 — *Willia'msii*. See *S. flava*, var. *Williamsii*.
 — *Wilsonia'na*. Hybrid between *S. flava* and *S. purpurea*. 1884.
 — *Wrigleya'na*. Hybrid between *S. psittacina* and *S. variolaris*.

Sa'ssafras. (From *Sassafras*, the Spanish for Saxifrage. Nat. ord., *Laurineæ*.)

Hardy, deciduous tree, from the Eastern United States. From the young shoots a kind of beer is manufactured, while the fruits yield an oil, used by perfumers. For culture, see LAURUS.

- S. officina'le*. 30. Greenish-yellow. April. Eastern United States. 1638. Bent. and Tr. t. 220. Syn., *Laurus sassafras*.

Sassafras, Californian. *Umbellularia califo'rnica*.

Sassafras, Swamp. *Magno'lia glau'ca*.

Sassafras, Tasmanian. *Antherosperma moschatum*.

Sassafras Tree. *Sassafras officinale*.

Satin Flower. *Sisyrinchium*.

Satin Moth. *Leparis*.

Satin wood Tree. *Chloroxylon Swietenia*.

Satureia. Savory. (From the Arabic *sattar*, applied to labiates. Nat. ord., *Labiatae*; Tribe, *Satureineae*.)

Seeds and divisions in spring; common, sandy loam. See SAVORY.

HARDY HERBACEOUS, ETC.

- S. hortensis*. 1½. Pink. July. Italy. 1562. Annual. Syn., *S. viminea*.
 — *molle*. ½. White. July. Teneriffe. 1829.
 — *montana*. 1½. Purple. June. South Europe. 1562. Sibth. Fl. Gr. t. 543.
 — *viminea*. See *S. hortensis*.

HARDY EVERGREENS.

- S. murtia*. June. Caucasus. 1836.
 — *spinosa*. White. May. Crete. 1827.
 — *thymbra*. 1. Purple. June. Candia. 1640. Sibth. Fl. Gr. t. 541.
 — *virgata*. Purple. June. Naples. 1424.

EXCLUDED SPECIES.

- S. approximata* = *Micromeria approximata*.
 — *capitata* = *Thymus capitatus*.
 — *congesta* = *Micromeria graeca*, var. *densiflora*.
 — *græca* = *Micromeria graeca*.
 — *hirsuta* } = *Micromeria Juliana*.
 — *Juliana* }
 — *nevosa* = *Micromeria nevosa*.
 — *repens*, Jacq. Ic. t. 494, = *Micromeria rupestris*.

Satyrium. (From *satyrus*, a satyr; supposed aphrodisiacal properties. Nat. ord., *Orchideae*; Tribe, *Ophrydeae-Diseae*.)

Terrestrial orchids, from South Africa, except *S. elatatum* and *S. nepalense*, less difficult to cultivate than their allies. We have flowered some of them planted out in a cold frame with *Ixia* and other Cape Irids. Division of the roots as fresh growth is commencing; fibry loam and turfy peat, well drained. Winter temp., 40° to 45°; summer, 55° to 75°.

- S. aureum*. Orange. August. 1842.
 — *caudatum*. White. September. 1836.
 — *caeruleum*. 1½. Pink. June. 1797.
 — *chrysoanthemum*. See *S. coriifolium*.
 — *chilatum*. Pinkish-white. August. Himalaya. 1880.
 — *coriifolium*. 1. Yellow. October. 1820. Syn., *S. cucullatum* of B. C. t. 104.
 — *cucullatum*. ½. Green. June. 1786. B. R. t. 416. Syn., *Orchis bicornis*. Andr. Rep. t. 315. *S. cucullatum* of B. C. t. 104 is a synonym of *S. coriifolium*.
 — *erectum*. 1½. Yellow. February. 1838. Maund Bot. iii., t. 117. Syn., *S. pilosum* and *S. pustulatum*, B. R. 1840, t. 18.
 — *foliosum*. Purple. July. 1828.
 — *marginaatum*. ½. June. 1789. Syn., *S. parviflorum*.
 — *membranaceum*. 1. Bright red. 1889.
 — *nepalense*. 1½. Rose-pink. Himalayas. 1882. B. M. t. 6625.
 — *papillosum*. See *S. erectum*.
 — *parviflorum*. See *S. marginatum*.

S. pustulatum. B. R. 1840, t. 15. See *S. erectum*.

Saucers made of earthenware and glazed inside are useful for standing pots in on tables, which would be damaged by a moist unprotected pot. They are now often replaced by an ornamental china pot, in which the ordinary flower-pot is completely inclosed. In either case care must be taken that the water is not too great in quantity or does not become stagnant.

Saundersia. (After *W. Wilson Saunders, F.L.S.*, an eminent cultivator of rare plants and patron of Botany. Nat. ord., *Orchideae*; Tribe, *Vandeeae-Oncidieae*.)

The sole species of this genus is a stove epiphyte.

S. mirabilis. Greenish-white, yellow, purple. Brazil. Rehb. Xen. t. 177.

Saunders Wood. *Pterocarpus santalinus*.

Saurauja. (Named after *Sauraujo*, a Portuguese botanist. Nat. ord., *Ternstroemiaceae*; Tribe, *Sauraujeae*.)

Stove evergreen, white-flowered trees and shrubs. Cuttings of ripe shoots in sand, under a bell-glass, in heat, in spring; fibry loam and sandy peat. Winter temp., 50° to 55°; summer, 60° to 80°.

- S. excelsum*. 50. Caraccas. 1820.
 — *lanceolata*. 1882.
 — *macrophylla*. Mexico. 1844.
 — *nepalense*. 30. August. Nepal. 1824.
 — *sarapiquense*. Costa Rica. 1866.
 — *spectabilis*. 10. July. Bolivia. 1838. B. M. t. 3982.

Sauroglossum. (From *saura*, a lizard, and *glossa*, a tongue; resemblance to the tongue of that reptile. Nat. ord., *Orchideae*; Tribe, *Neottieae-Spirantheae*.)

See **Spiranthes**.

S. elatum. B. R. t. 1618. See *Spiranthes elata*.

Sauromaatum. (From *saura*, a lizard; alluding to the speckled interior of the spathe. Nat. ord., *Aroideae*; Tribe, *Arineae*.)

Stove tuberous-rooted herbaceous perennials, allied to *ARUM*. Offsets. Light loam and peat in equal proportions.

- S. asperum*. See *Dracontium asperum*.
 — *guttatum*. 1½. Green, purple. May. E. Indies. 1830. Syn., *Arum venosum*, B. R. t. 1017. See also *S. venosum*.
 — *pedatum*. 3. Dark purple, yellowish. March. East Indies. 1815. Gf. t. 495.
 — *punctatum*. 1. Green, purplish. 1858.
 — *venosum*. 1. Green, purple-brown. India. 1840. Syn., *S. guttatum* of B. M. t. 4465.

Sauropus. (From *sauros*, a lizard, and *pous*, a foot; application not apparent. Nat. ord., *Euphorbiaceae*; Tribe, *Phyllantheeae*.)

Stove shrub. For cultivation, see *PHYLLANTHUS*, to which it is allied.

S. albeans Gardneria'nus. Java. 1861. Syn., *S. Gardneri*.

Sauru'rus. (From *sauros*, a lizard, and *oura*, a tail, referring to the appearance of the inflorescence. Nat. ord., *Piperaceæ*.)

Hardy, perennial, aquatic herbs, suitable for growing in a shallow pond. Propagated by seeds or divisions.

S. ce'rnuus. 2. White. Summer. North America. 1759.

— *chine'nsis*. See *S. Loureiri*.

— *Lourei'ri*. 2. White. Summer. Eastern Asia. 1819. Gfl. t. 756. Syn., *S. chinensis*.

Saussu'rea. (Named after *H. B. de Saussure*, a Swiss botanist. Nat. ord., *Compositæ*; Tribe, *Cynaroidæ*. Allied to *Carlina*.)

Hardy herbaceous perennials, and purple-blossomed, except where otherwise mentioned. Seeds and divisions of the plant in spring; common garden-soil.

S. ala'ta. See *S. japonica*.

— *albe'scens*. 2. Purple. July. Nepal. 1837. Syn., *Aplotaxis albescens*.

— *alpi'na*. $\frac{1}{2}$. July. Britain. Eng. Bot. ed. 3, t. 703.

— *ama'ra*. $\frac{1}{4}$. July. Siberia. 1820.

— *angustifo'lia*. 2. July. Siberia. 1816.

— *crassifo'lia*. July. Caucasus. 1824.

— *di'scolor*. 1. July. Switzerland. 1818.

— *lapathifo'lia*. 1. July. Europe. 1816.

— *e'legans*. Rose. July. Caucasus. 1820.

— *elonga'ta*. 2. July. Caucasus. 1820.

— *Gmeli'ni*. A synonym of *Serratula Gmelini*.

— *japo'nica*. 2. Red. July. Siberia. 1818.

Syn., *S. alata*.

— *lacinia'ta*. June. Siberia. 1827.

— *liatroi'des*. See *S. pycnocephala*.

— *lyra'ta*. 2. Red. July. Siberia. 1827.

— *pulche'ra*. 2. July. Siberia. 1835. Syn.,

Serratula pulchella, B. M. t. 2589.

— *pycno'cephala*. 2. July. Siberia. 1827.

Syn., *S. liatroi'des*.

— *pygma'ea*. 1. July. Austria. 1816. Syn.,

Serratula pygmaea.

— *ri'gida*. July. Siberia. 1827.

— *runcina'ta*. 2. Red. July. Siberia. 1819.

— *sabice'fo'lia*. 2. Red. July. Siberia. 1796.

— *sa'lsa*. $\frac{1}{4}$. Red. July. Caucasus. 1816.

— *serra'ta*. July. Europe. 1816.

Sauvage'sia. Iron Shrub; St. Martin's Herb. (Named after *F. B. de Sauvages*, a French botanist. Nat. ord., *Violaceæ*; Tribe, *Sauvagesiæ*.)

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. 1. Pink or purple. May. Mexico. 1820.

— *gemini'flo'ra*. } Synonyms of *S. erecta*.

— *nu'tans*. }

Savannah Flower. *Echi'tes subere'cta*.

Savin Tree. *Juni'perus Sabi'na*.

Savory. *Sature'ia 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 be transplanted. Of the Winter Savory, when the seedlings are about two inches high, it is eligible to plant out a quantity of the strongest in moist weather, in nursery rows, six inches asunder, to remain till September or spring following, then to be transplanted with balls of earth where they are finally to remain, in rows a foot asunder. When it is intended to let 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, five or six inches long; plant them with a dibble in any shady border, in rows six inches asunder, giving occasional waterings, and they will be well rooted by September, when they may be transplanted.

Savoy. *Bras'sica olera'cea bulla'ta major*.

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 two feet apart each way, but the winter-standing crops are better at two feet by eighteen inches. Water abundantly, if the weather be 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. Plant these in open weather, from early in November to the close of February, entirely up to the head, in rows two feet and a half each way, each variety as far from the other as possible. They ripen their seed in July and August.

Sawdust, especially in a decayed

condition can be used as a manure, but is of little value.

Saw-Fly. See *Athalia* and *Hylotonia*.

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 on a handle six feet long, for reaching branches difficult of access, will be found convenient. The face of the wound made by a saw should always be cut smooth with the knife, and painted with tar, otherwise the wet lodging on its rough surface occasions decay. See **Bill**.

Sawwort. *Serra'tula*.

Saxe-Go'thæa. (In honour of his late *R. H. Prince Albert*. Nat. ord., *Coniferæ*; Tribe, *Podocarpeæ*.)

Half-hardy evergreen tree.

S. consp'cua. 30. June. Patagonia. 1845. Journ. Hort. Soc. vi., p. 258.

Saxi'fraga. Saxifrage. (From *saxum*, a stone, and *frango*, to break; supposed power in disease of the bladder. Nat. ord., *Saxifragaceæ*; Tribe, *Saxifrageæ*.)

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 rock-work.

HARDY ANNUALS, ETC.

S. controve'rsa. †. May. South Europe. 1824.
— *flagella'ris*. †. Yellow. June. Greenland. 1851. Evergreen trailer. B. M. t. 4621.
— *hedera'cea*. †. July. Levant. 1752. Sibth. Fl. Gr. t. 379.
— *irri'gua*. 1. June. Tauria. 1817. Biennial.
— *petro'ea*. †. April. Norway. 1732. Jacq. Ic. t. 81.
— *tridactyli'tes*. †. April. Britain.

HARDY HERBACEOUS PERENNIALS.

S. adscen'dens. †. May. Pyrenees. 1752.
— *vestiva'lis*. May. Altai. 1821.
— *affi'nis*. †. May.
— *ai'zo'i'des*. †. Yellow. July. Britain.
— *Atzo'on*. 1. June. Alps. 1731.
— *ajugæfo'lia*. 1. June. Pyrenees. 1770.
— *alti'fida*. 1.
— *Andre'usii*. †. White, with purple dots. 1848. A hybrid between *S. Geum* and *S. Aizoon*.
— *andro'æ'cea*. 1. May. Austria. 1792.
— *aqua'tica*. 1. White. July. Pyrenees. 1884. Gf. t. 1167.
— *aretioid'es*. †. Yellow. June. Switzerland. 1826.
— — *micrope'tala*. See *S. luteo-purpurea*.
— *argu'ta*. †. May. N. America. 1827.
— *as'pera*. †. Cream. August. Switzerland. 1752.
— *bi'flora*. †. Purple. May. Switzerland. 1820.
— *Bo'ydii*. Golden-yellow. March. Hybrid between *S. Burseriana* and *S. aretioides*. 1890.

S. bronchia'lis. †. Cream. May. Siberia. 1819.
— *bryo'id'es*. †. Cream. June. Switzerland. 1752.
— *bulbi'fera*. †. June. South Europe. 1819.
— *Burseria'na*. †. Cream. April. Carniola. 1826.
— — *ma'jor*. Flowers larger. 1880.
— *ce'sia*. †. Pale yellow. May. Switzerland. 1752. B. C. t. 421.
— *cæspit'o'sa*. †. Cream. May. Wales.
— *Campo'sii*. †. White. May. Spain. 1882. B. M. t. 6640. Syn., *S. Wallacei*.
— *ceratophy'lia*. B. M. t. 1651. See *S. trifurcata*.
— *ce'rnua*. †. July. Scotland.
— *cilia'ta*. B. R. 1843. t. 65. See *S. ligulata*, var. *ciliata*.
— *Chi'sti*. White, yellow, red. Pyrenees. 1882.
— *condensa'ta*. †. May. Scotland.
— *corda'ly'lia*. 1. Purple. April. Siberia. 1779.
— *cortusefo'lia*. White. October. Japan. 1883. B. M. t. 6630.
— *Cotyle'don*. †. June. Alps, Europe. 1596. *S. nepalensis* and *S. pyramidalis* are forms of this.
— *crassi'fo'lia*. 1. Purple. April. Siberia. 1765. B. M. t. 196.
— *crusta'ta*. †. June. Switzerland. 1800.
— *cuneifo'lia*. †. May. Switzerland. 1768.
— — *davi'rica*. †. June. Siberia. 1809.
— *cuscutæfo'rmiss*. †. White. June. Japan. 1815. B. M. t. 2631; B. C. t. 186.
— *Cymbala'ria*. Citron - yellow. Summer. Northern India.
— *deci'piens*. †. May. Wales. B. C. t. 1510.
— *de'nsa*. A synonym of *S. bronchialis*.
— *denu'da'ta*. †. May. Scotland. B. C. t. 1517.
— *diapensi'o'des*. †. April. Switzerland. 1825.
— *diversifo'lia*. 1. Yellow. July. India. 1882. B. M. t. 6603.
— *e'legans*. Ireland.
— *elonge'lia*. 1. April. Scotland.
— *Engleri*. Hybrid between *S. aizoon* and *S. cuneifolia*.
— *ero'sa*. 1. White, yellow. May. Carolina. 1812.
— — *hirsu'ta*. 1. White, yellow. June. N. Amer. 1800.
— *exara'ta*. †. May. South Europe. 1800.
— *ferrugi'nea*. †. September. N. Amer. 1827.
— *floru'eta*. 1. Lilac. S. Europe. 1872. B. M. t. 6102.
— *Fortu'nei*. White. Japan. 1868. Half-hardy. B. M. t. 5377.
— *Fride'rici Augu'sti*. A synonym of *S. luteo-purpurea*.
— *geranioid'es*. †. April. Pyrenees. 1770.
— *Ge'um*. 1. June. Ireland. Eng. Bot. ed. 3, t. 543.
— — *crena'ta*. 1. May.
— — *denta'ta*. 1. May. Ireland.
— — *poli'ta*. 1. May. Ireland.
— *granula'ta*. 1. May. Britain. Eng. Bot. ed. 3, t. 555.
— — *ple'na*. 1. May.
— *greenlan'dica*. †. White. Greenland.
— *Guthrie'ana*. White, with purple dots. Garden hybrid.
— *Hawo'rthii*. May. Europe.
— *hieraci'fo'lia*. 1‡. May. Hungary. 1789.
— *h'erculus*. †. Yellow. August. England.
— — *grandifl'o'ra*. Flowers large. Gf. t. 1035, fig. 4.
— *hirsu'ta*. 1. Flesh. May. Ireland. Eng. Bot. ed. 3, t. 546.
— — *sphaeroi'dea*. 1. Flesh. May. Pyrenees.
— *hi'rta*. 1. June. Scotland.
— *Ho'stii*. 1. White, with purple dots. May. South Europe.
— *Hugueno'tii*. 2. White. Eastern Switzerland. Gf. t. 1230.
— *hy'brida*. †. June. Piedmont. 1810.

- S. hypnoides*. $\frac{1}{2}$. May. Britain.
 — *angustifolia*. $\frac{1}{2}$. May. Scotland.
 — *muscosa*. $\frac{1}{2}$. May. Scotland.
 — *pulchella*. $\frac{1}{2}$. May. Scotland.
 — *viscosa*. $\frac{1}{2}$. May. Scotland.
 — *imbricata*. $\frac{1}{2}$. White. June. India. 1843.
 — *incurvifolia*. $\frac{1}{2}$. May. Ireland.
 — *intacta*. 1. June. Tyrol.
 — *minor*. 1. May. Alps.
 — *parviflora*. 1. May. Alps.
 — *intermedia*. 1. July. 1808.
 — *irrigua*. 1. White. June. Tauria. 1817.
 B. M. t. 2207.
 — *juniperifolia*. Yellowish. July. Caucasus.
 — *Kotschyti*. $\frac{1}{2}$. Yellow. Asia Minor. 1873.
 B. M. t. 6065.
 — *latevirens*. $\frac{1}{2}$. May. Scotland.
 — *levis*. $\frac{1}{2}$. August. Caucasus.
 — *lanceolata*. $\frac{1}{2}$. May. Europe. 1800.
 — *obtusata*. $\frac{1}{2}$. May. Europe. 1820.
 — *lanceolata*. Creamy-white. Maritime Alps.
 G. C. 1881, xv. pp. 109 and 540.
 — *Lapeyrousei*. See *S. luteo-purpurea*.
 — *latepetiolata*. 1. White. Spain. B. M. t. 7056.
 — *leptophylla*. $\frac{1}{2}$. May. Wales.
 — *angustifolia*. $\frac{1}{2}$. May. Wales.
 — *leucanthemifolia*. $\frac{1}{2}$. June. N. Amer. 1812.
 B. M. t. 2959.
 — *ligulata*. $\frac{1}{2}$. White, red. May. Nepal. 1821. B. M. t. 3406.
 — *ciliata*. $\frac{1}{2}$. May. Nepal. 1843. Syns., *S. ciliata* and *S. thysanodes*, B. R. 1846, t. 33.
 — *lingulata*. 1 $\frac{1}{2}$. June. Switzerland. 1821.
 — *cochlearis*. White. June. Maritime Alps. 1833. B. M. t. 6688.
 — *media*. 1 $\frac{1}{2}$. June. Carniola. 1800.
 — *longifolia*. White, red-dotted. Summer. Pyrenees. B. M. t. 5889.
 — *luteo-purpurea*. Yellow. Dalmatia. 1877. Syns., *S. aretioides*, var. *micropetala*, *S. Lapeyrousei* and *S. media* var. *Friderici Augusti*.
 — *macroptala*. Deep lilac. Tyrol. 1838.
 — *Mauveana*. $\frac{1}{2}$. White. May. Morocco. 1871. B. M. t. 6384.
 — *marginata*. $\frac{1}{2}$. White. July. Italy and Greece. 1833. B. M. t. 6702.
 — *media*. $\frac{1}{2}$. Purplish. June. Pyrenees. G. C. 1885, xxiii. p. 801.
 — *Friderici Augusti*. See *S. luteo-purpurea*.
 — *Milesti*. White or pale pink. Himalayas. 1832.
 — *montanovensis*. Yellow, red. 1890.
 — *moschata*. $\frac{1}{2}$. Lilac, yellow. May. Pyrenees.
 — *muscoides*. $\frac{1}{2}$. Pale yellow. May. England. 1819.
 — *mutata*. $\frac{1}{2}$. Lilac, yellow. June. Switzerland. 1779. Jacq. Ic. t. 466; B. M. t. 351.
 — *nicaeensis*. $\frac{1}{2}$. June. Britain. Eng. Bot. ed. 3, t. 541.
 — *nudicaulis*. $\frac{1}{2}$. May. N. America.
 — *oppositifolia*. $\frac{1}{2}$. Purple. March. Britain.
 — *albata*. White.
 — *major*. Flowers large.
 — *pauciflora*. A variety with paler flowers. 1833.
 — *pyrenaica superba*. Rosy lilac. 1884.
 — *splenidens*. Wales. 1834.
 — *paniculata*. A synonym of *S. geranoides*.
 — *pectinata*. N. America.
 — *pedatifida*. $\frac{1}{2}$. May. Scotland.
 — *pedemontana*. May. Piedmont. 1824.
 — *peltata*. 1. Rosy. April. California. 1873. B. M. t. 6074.
 — *pennsylvanica*. 1 $\frac{1}{2}$. Green, yellow. May. N. Amer. 1732.
 — *glabra*. 2. Green, yellow. May. N. Amer. 1732.
S. pentadactylis. $\frac{1}{2}$. May. Pyrenees. 1815.
 — *petraea*. A synonym of *S. saxatilis*.
 — *platyptala*. 1. June. Scotland.
 — *propaganea*. White. September. Seedling variety. 1831.
 — *pulchella*. $\frac{1}{2}$. May. Germany. 1819.
 — *purpurascens*. $\frac{1}{2}$. Purple. Sikkim. 1850. B. M. t. 5066. Syn., *Megasea purpurascens*.
 — *pygmaea*. $\frac{1}{2}$. White, yellow. May. Scotland.
 — *pyramida superba*. A form of *S. Cotyledon*.
 — *pyrenaica superba*. G. C. 1884, xxi. p. 419. A variety of *S. oppositifolia*.
 — *pyrolaeifolia*. See *Leptarrhena pyrolaeifolia*.
 — *quinquefolia*. $\frac{1}{2}$. April. Scotland.
 — *retusata*. $\frac{1}{2}$. Purple. May. Piedmont. 1826. Swt. Fl. Gard. ser. 2, t. 49.
 — *rivularis*. $\frac{1}{2}$. June. Scotland. Eng. Bot. ed. 3, t. 553.
 — *Rochelia*. $\frac{1}{2}$. White. Summer. Austria.
 — *coriophylla*. Prostrate.
 — *rotundifolia*. 1. White, red. May. Austria. 1596. B. M. t. 424.
 — *repanda*. 1. May. Caucasus. 1800.
 — *taggetea*. Greece.
 — *sacota*. Yellow. Summer. Mount Athos. 1832.
 — *sarmentosa*. 1. June. China. 1771. B. M. t. 92.
 — *cuscutosiformis*. $\frac{1}{2}$. June. China. 1815.
 — *minor*. A smaller form.
 — *tricolor*. Leaves variegated.
 — *Schmidtii*. $\frac{1}{2}$. Rose. Himalaya. 1878. Gf. t. 946. This seems the same as *S. ligulata*.
 — *Schraderi*. 1. May. 1825.
 — *sedoides*. $\frac{1}{2}$. Yellow. May. Europe. 1820.
 — *semipubescentis*. 1. Green, yellow. May. N. Amer. 1800.
 — *sibirica*. $\frac{1}{2}$. July. Siberia. 1802.
 — *spathulata*. June. Algiers.
 — *spicata*. $\frac{1}{2}$. Spotted. May. N. Amer. 1827.
 — *squarrosa*. White. Early summer. Alps.
 — *stellaris*. $\frac{1}{2}$. June. Britain. Eng. Bot. ed. 3, t. 542.
 — *dissectifolia*. $\frac{1}{2}$. June. Scotland.
 — *Schleicheri*. Switzerland. 1819.
 — *Sternbergii*. 1. May. Germany.
 — *Stracheyi*. $\frac{1}{2}$. Pink. Himalaya. 1851. B. M. t. 5967.
 — *albata*. White. Himalaya. Gf. t. 1228.
 — *albiflora pubescens*. White. 1834.
 — *tenuifolia*. $\frac{1}{2}$. July. Corinthia. 1819.
 — *tenera*. $\frac{1}{2}$. Cream. May. Switzerland. 1819.
 — *thysanoides*. B. R. 1846, t. 33. See *S. ligulata*, var. *ciliata*.
 — *tombeanensis*. White. Tyrol. 1838.
 — *tricuspidata*. May. N. Amer. 1824.
 — *tridentata*. $\frac{1}{2}$. May.
 — *trifurcata*. $\frac{1}{2}$. White. May. Spain. 1804. Syn., *S. ceratophylla*. B. M. t. 1651.
 — *umbrosa*. 1. Flesh. May. Britain. London Pride; St. Patrick's Cabbage.
 — *punctata*. 1. May. Ireland.
 — *serratifolia*. May. Ireland.
 — *valdensis*. White. Alps. 1871.
 — *virginienensis*. $\frac{1}{2}$. May. N. Amer. 1790. B. M. t. 1664.
 — *strobilifera*. Double-flowered. Gf. t. 1092.
 — *viscosa*. $\frac{1}{2}$. May.
 — *Wallacea*. See *S. Campostii*.

Saxo-Fredericia. (In honour of Frederick Augustus, King of Saxony. Nat. ord., *Rapateaceae*.)

Stove plants, natives of the marshes of Guiana and Amazons. Loam and peat. Keep wet.

Seeds, divisions. Summer temp., 85° to 90°; winter, 60° to 65°.

S. subcordata. 1. Brownish. Amazons. 1873. Syn., *Rapatea pandanoides*. III. Hort. tt. 153-4.

Scabiosa. Scabious. (From *scabies*, the itch; said to cure the disorder. Nat. ord., *Dipsacæ*. Syns., *Asterocephalus* and *Pterocephalus*.)

Hardy herbaceous perennials. Seeds and divisions in spring; common garden-soil.

ANNUALS.

- S. atropurpurea*. Brown. July. E. Ind. 1629. Syn., *Asterocephalus atropurpureus*. B. M. t. 247.
 — *alba*. White. July. E. Ind. 1629.
 — *carnea*. 3. Flesh. July. E. Ind. 1629.
 — *prolifera*. 3. Purple. July. E. Ind. 1629.
 — *rosea*. 3. Red. July. E. Ind. 1629.
 — *variegata*. 3. Variegated. July. E. Ind. 1629.
 — *monspeliensis*. 2. White. July. South Europe. 1820. Syn., *Asterocephalus simplex*.
 — *stellata*. 1½. Pink. July. Iberia. 1823. Syn., *Asterocephalus rotatus*.
 — *ucrana*. 1. Pink. July. Sicily. 1783. Syn., *Asterocephalus siculus*.

PERENNIALS.

- S. africana*. 6. White. August. Africa. 1690. Greenhouse evergreen shrub. Syn., *Asterocephalus africanus*.
 — *amœna*. 2. Purple. June. Russia. 1820. Syn., *Asterocephalus amœnus*.
 — *arvensis*. 2. Bluish-lilac. Summer. Britain. Eng. Bot. ed. 3. t. 679.
 — *flor-albo*. 2. White. July. Britain.
 — *australis*. 1½. Purple. June. Styria. 1820.
 — *carpathica*. 1. White. June. Prussia. 1819.
 — *caucasica*. 1. Blue. June. Caucasus. 1803. Syn., *Asterocephalus caucasicus*.
 — *elegans*. Blue. Gf. t. 1212.
 — *heterophylla*. Pale purple. Gf. t. 1084.
 — *ceratophylla*. 2. Red. July. Italy. 1826. Syn., *Asterocephalus ceratophyllus*.
 — *columbiana*. 1. Purple. July. Britain. Eng. Bot. ed. 3. t. 678. Syn., *Asterocephalus columbarius*.
 — *commutata*. 1. Blue. July. Siberia. 1826. Syn., *Asterocephalus commutatus*.
 — *crenata*. 2. Flesh. August. Italy. 1825. Syn., *Asterocephalus crenatus*.
 — *cretica*. 1. Purple. June. Crete. 1596. Greenhouse evergreen shrub. Syn., *Asterocephalus creticus*.
 — *dichotoma*. 1. Pink. July. Sicily. 1804.
 — *diapsacifolia*. 2. White. June. Germany. 1818.
 — *intermedius*. 1½. Blue. July. South Europe. Syn., *Pterocephalus vaillantii*.
 — *iseticus*. 1. White. July. Siberia. 1801. Syns., *S. rupestris*, *Asterocephalus iseticus*, and *A. rupestris*.
 — *lutea*. 2. Yellow. June. Russia. 1820. Syn., *Asterocephalus luteus*.
 — *lyrata*. 1. Purple. July. Turkey. 1799. Greenhouse herbaceous perennial. Syn., *Asterocephalus lyratus*.
 — *micrantha*. 1. Pink. July. Armenia. 1825. Syn., *Asterocephalus micranthus*.
 — *mollis*. 2. Violet. July. 1820. Syn., *Asterocephalus capillatus*.
 — *nitens*. June. Azores. 1779. Syns., *Asterocephalus lucidus* and *A. nitens*.
 — *ochroleuca*. 1. Yellow. July. Germany. 1817. Syns., *Asterocephalus ochroleucus*.
 — *pauciflora*. Straw. July. South of Europe. 1827. Syn., *Asterocephalus pauciflorus*.

S. pteroccephala. ½. Purple. July. Greece.
 — *pube scens*. 2. White. June. Hungary. 1820.

- *pyrenaica*. 1. Purple. July. South of France. 1819. Syns., *Asterocephalus mollissimus* and *A. pyrenaticus*.
 — *rupestris*. See *S. iseticus*.
 — *rutabifolia*. 1. Scarlet. July. Sicily. 1804.
 — *Salcedi*. 1. White. June. Spain. 1823.
 — *Scopoli*. 2. Straw. July. South of Europe. 1819.
 — *setifera*. 2. White. July. France. 1826. Syn., *Asterocephalus setiferus*.
 — *silenifolia*. 1½. Red. July. Hungary. 1826.
 — *stricta*. 2. Red. June. Hungary. 1820.
 — *suaveolens*. 1. Red. July. Europe. 1836. Syn., *Asterocephalus incanus*.
 — *ucrana*. 1. Light yellow. July. Ukraine. 1795. Syn., *Asterocephalus ucranicus*.
 — *urceolata*. 3. Yellow. July. Barbary. 1804. Syn., *Asterocephalus urceolatus*.
 — *Victorica*. Garden hybrid. 1883.
 — *Webbiana*. ½. White. July. Mount Ida. 1818. Syn., *Asterocephalus Webbianus*.

Scæva. Hawk Fly. Of this genus there are several species, the most common of which are *S. ribesii* and *S. Pyrastris*. 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., *Goodeniaceæ*.)

Divisions and cuttings of young shoots; the tender species in heat; the greenhouse in a cold pit, under a bell-glass; sandy loam and turf peat; the usual greenhouse and stove treatment.

STOVE EVERGREENS.

- S. ivogfolia*. White. August. Trinidad. 1820.
 — *Konigii*. 2. Pale red. E. Ind. 1820. B. M. t. 2732.
 — *Plumieri*. 2. White. August. West Indies. 1724.
 — *Taccaida*. 2½. White. August. E. Ind. 1810.

GREENHOUSE HERBACEOUS.

- S. alterata*. Purple. June. Swan River. 1844.
 — *anhusifolia*. Blue. May. Swan River.
 — *attenuata*. 2. Pale blue. June. Swan River. 1844. B. M. t. 4196.
 — *crassifolia*. 3. White. September. Australia. 1806.
 — *cuneiformis*. 1½. Blue. Australia. 1824.
 — *fasciculata*. August. Swan River.
 — *hispidula*. 2. Lilac. July. Australia. 1827.
 — *microcarpa*. 1½. Violet. July. N. S. Wales. 1790. Syn., *Goodenia albida* and *G. levigata*. B. M. t. 287.
 — *multiflora*. Blue. July. Swan River. 1840.
 — *pilosca*. 2. Blue. May.
 — *platyphylla*. 2. White. May. 1841.
 — *suaveolens*. 2. Blue. August. N. S. Wales. 1793. Syn., *Goodenia calendulacea*. Andr. Rep., t. 22.

Scale Insect. See *Coccus*.

Scallion. See *Ciboul*.

Scammony. *Convolvulus Scammonia*.

Scaphosepalum. (From *skaphe*, a boat, and *sepalon*, a sepal; the lateral

sepals are boat-shaped. Nat. ord., *Orchideæ*; Tribe, *Epidendrææ-Pleurothallææ*.)

Greenhouse orchid.

S. antenniferum. Greenish-yellow; brown inside. G. C. 1890, vii., p. 709.

Scaphyglottis. (From *skaphe*, a boat, and *glotta*, a tongue; referring to the shape of the lip. Nat. ord., *Orchideæ*; Tribe, *Epidendrææ-Stenoglosseæ*.)

Stove epiphytal orchids. For culture, see CATTLEYA.

S. Kienastii. Brownish-green. Mexico. 1877.

Syn., *Poneria Kienastii*.

— *stellata*. Violet. Demerara.

— *violacea*. Violet. Demerara. B. M. t. 4071.

Scares are but very inefficient protection 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 multiflorus*.

Scelochilus. (From *skelos*, a leg, and *cheilos*, a lip. Nat. ord., *Orchideæ*; Tribe, *Vandææ-Oncidiææ*. Allied to *Comparettia*.)

Stove epiphytal orchid. See ORCHIDS.

S. Ottonis. Yellow, red. July. Caraccas. 1841.

Schæfferia. False Box. (After James Christian Schæffer, 1718-1790, a German naturalist. Nat. ord., *Celastrineæ*.)

Stove shrub. Compost of loam, sand, and peat. Cuttings in sand, under a bell-glass, in heat.

S. frutescens. 10. White. August. West Indies. 1793. Crabwood-tree.

— *lateriflora*. A synonym of *Drypetes crocea*.

Schaueria. (From Professor John Konrad Schauer, of Greifswald, 1813-1848. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*.)

Stove herb. For culture, see JUSTICIA.

S. calycotricha. 2. Yellow. February. Brazil.

1824. Syns., *S. flavicoma*, *Justicia callitricha*, B. C. t. 1921, *J. calycotricha*, B. M. t. 2816, and *J. flavicoma*, B. R. t. 1027.

— *flavicoma*. See *S. calycotricha*.

Scheelea. (Dedicated to Scheele, a celebrated German chemist. Nat. ord., *Palmææ*; Tribe, *Coccolineæ*.)

Stove palm. Allied to *ATTALEA*, to which refer for cultivation.

S. excelso. 40. Venezuela. 1826.

— *imperialis*. Columbia. 1875.

— *insignis*. 50. Quito. Syn., *Maximiliana insignis*.

— *inguis*. 8.

Scheeria. (In honour of F. Scheer, Esq. Nat. ord., *Gesneraceæ*; Tribe,

Gesnerææ.) Now united with **Achimenes**.

Stove herbaceous perennial, closely allied to *Gloxinia*. For culture, see **ACHIMENES**.

S. lana'ta. 1. Purple. October. Mexico. 1856.

— *mexicana*. 3. Purple. August. Mexico.

1850. B. M. t. 4743. Now known as **ACHIMENES SCHEERII**.

Schelhammera. (Named after C. C. Schelhammer, a professor at Jena. Nat. ord., *Liliaceæ*; Tribe, *Uvulariææ*. Allied to *Uvularia*.)

Greenhouse, purple-flowered, herbaceous perennials, from Eastern Australia. Divisions: sandy loam and fibry peat; a cool greenhouse or a cold pit in winter.

S. multiflora. 1½. June. 1824. *S. multiflora* of B. C. t. 1511 is a synonym of *Kreysigia multiflora*.

— *undulata*. 1. June. 1824. B. M. t. 2712.

Schellolepis. (From *skellos*, distorted, and *lepis*, a scale. Nat. ord., *Filicesæ-Polypodiaceæ*.) Now united with **Polypodium**.

Stove, yellow-spored Indian ferns. (See **FERNS**.) There are two species, *S. amœna*, and *verrucosa* (= *Polypodium verrucosum*).

Schi'ma. (Perhaps from *schisma*, a cleft; valves of capsule cleft half-way down. Nat. ord., *Ternstroëmiaceæ*.)

Stove tree. Loam and sand. Cuttings of ripened shoots cut off at a joint, in sand, under a hand-glass in heat.

S. Noronhæ. 20. White. Hong Kong. 1824.

Syns., *S. superba* and *Gordonia javanica*.

B. M. t. 4539.

— *superba*. See *S. Noronhæ*.

Schi'nus. (The Greek name for *Pistachia lentiscus*. Nat. ord., *Anacardiææ*; Tribe, *Anacardiææ*.)

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. dentatus. Andr. Rep. t. 620. See *Duvalia dentata*.

— *molle*. 20. August. Peru. 1597. B. M. t. 3339.

— *terebinthifolia*. 20. Brazil. 1829.

— *virgata*. 8. June. Lima. 1822.

Schismatoglossis. (From *schisma*, deciduous, and *glotta*, a tongue; because the limb of the spathe falls off very quickly. Nat. ord., *Aroideæ*; Tribe, *Philodendrææ*.)

Stove perennial herbs, of dwarf stature, with variegated leaves. All are natives of the Indian Archipelago. Divisions. Rich sandy loam, fibry peat, and leaf-mould, in equal proportions, well drained; they require a moist atmosphere, and plenty of water with shade. Summer temp., 70° to 85°; winter, 60° to 70°.

S. crispa'ta. Leaves dark green, with a broad central greyish band. Green, creamy white. Borneo. 1881. B. M. t. 6576.

— *de'cora*. See *S. pulchra*.

— *latifolia*. See *S. rupestris*.

— *Lava'llei*. Leaves bright green, blotched with grey above, pale green below. Java. Syn., *Aglaonema Lavalletii*. Ill. Hort. t. 418.

- S. Lavallei immaculata*. Leaves bright green above, not spotted, purple below. Java. 1882. Syn., *S. Lavallei*, var. *Lansbergiana*.
- *Lansbergiana*. Ill. Hort. t. 468. See *S. Lavallei*, var. *immaculata*.
- *purpurea*. Leaves bright and blotched with grey above, deep purple beneath. Sumatra. 1882.
- *longispatha*. Yellowish-green. Leaves light green, feathered with silvery-grey along the midrib. Borneo. 1881.
- *neoguineensis*. Pale green. Leaves bright green, with yellowish-green blotches. New Guinea. 1879. Syn., *Colocasia neoguineensis*. Ill. Hort. t. 380.
- *picta*. $\frac{3}{4}$. Whitish. Leaves with a feathered greyish band down the middle. Borneo. 1864.
- *pulchra*. Leaves glaucous green above. Borneo. 1884. Ill. Hort. t. 520. Syn., *S. decora*.
- *rupesstris*. Yellow. Java. 1882. Syn., *S. latifolia*.
- *siamensis*. Leaves glossy-green, with white spots. Siam. 1884.
- *variegata*. $\frac{3}{4}$. White leaves nearly as in *S. picta*. Borneo. 1862.

Schivereckia. (Named after A. Schiureck, a Russian botanist. Nat. ord., *Cruciferae*; Tribe, *Alyssineae*.) Now united to **Alyssum**.

Hardy herbaceous. Divisions; common garden-sol.

- S. podolica*. $\frac{1}{2}$. Yellow. June. Podolia. 1821. B. C. t. 1720. The correct name of this is **ALYSSUM PODOLICUM**.

Schizæa. (From *schizo*, to cleave, or cut; the appearance of the fan-like fronds. Nat. ord., *Filices-Osmundaceae*.)

Curious ferns, with narrow fronds usually branched in a dichotomous manner. See **FERNS**.

GREENHOUSE FERNS.

- S. bifida*. $\frac{1}{2}$. June. Australia. 1822.
- *pustilla*. $\frac{1}{4}$. June. N. Amer.
- *rupesstris*. $\frac{3}{4}$. June. Australia. 1822.

STOVE FERNS.

- S. dichotoma*. 1. W. Indies.
- *digitata*. 1. Malay Islands.
- *elegans*. $\frac{3}{4}$. June. Trinidad. 1819.
- *latifolia*. 1 $\frac{1}{2}$ to 3. W. Indies. 1861.
- *penicillata*. See *S. pennula*.
- *pennula*. 1. S. America. 1816. Syn., *S. penicillata*.
- *propinqua*. April. Malacca.

Schizandra. (From *schizo*, to cut, and *aner*, the male organ; split stamens. Nat. ord., *Magnoliaceae*; Tribe, *Schizandreae*.)

Cuttings of ripe shoots in sand, under a bell-glass, and kept only a little higher than the temperature of a cold pit or green-house; sandy, fibry loam, and a little leaf-mould. Winter temp., 40° to 45°. *S. coccinea* lived several years against the conservatory wall at Chiswick.

- S. chinensis*. 20. Pale rose. Summer. N. China. 1860.
- *coccinea*. Scarlet. June. N. Amer. 1806. B. M. t. 1413.
- *marmorata*. Borneo. 1860. Syn., *Sphaerostema marmoratum*. Stove climber.
- *propinqua*. 8. Pale yellow. July. Nepal. 1828. Syn., *Sphaerostema propinquum*. B. M. t. 4614. Stove.

Schizanthus. (From *schizo*, to cut, and *anthos*, a flower; the petals cut into fringes. Nat. ord., *Solanaceae*; Tribe, *Salpiglossideae*.)

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, fibry loam; when kept over the winter, the soil should be poor, and the plants near the glass.

- S. caendicus*. 2. White. Coquimbo. 1843. B. R. 1843, t. 45.
- *Evansianus*. Paxt. Mag. viii. p. 171. See *S. pinnatus*.
- *Grahami*. 2. Variegated. August. Chili. 1831. B. M. t. 3044.
- *ilicifolius*. Lilac, golden-yellow, veins brown. Garden variety. Gh. 1887, p. 665, fig. 169.
- *retusus*. 2. Variegated. August. Chili. 1831. Syn., *S. retusus*. B. M. t. 3044.
- *Hookeri*. 2. Rose, lilac. August. Chili. 1828. B. M. t. 3070.
- *incaicus*. 1. White, yellow. 1852. Belg. Hort. ii. t. 6.
- *pinnatifidus*. 2. Various. May. Coquimbo. 1841.
- *pinnatus*. 2. White, purple. August. Chili. 1822. Syn., *S. Evansianus* and *S. Priestii*.
- *humilis*. 1. Crimson. July. Valparaiso. 1831.
- *porrigens*. 2. Crimson. August. Chili. 1822. B. M. t. 2521.
- *Priestii*. Paxt. Mag. i. t. 31. See *S. pinnatus*.
- *retusus*. See *S. Grahami*, var. *retusus*.
- *violaceus*. 3. Purple. August. Chili. 1853.

Schizobaësis. (From *schizo*, to cut, and *basis*, the base; because the withered corolla separates at its base from the receptacle, and is pushed off by the swelling fruit in the form of a calyptra. Nat. ord., *Liliaceae*; Tribe, *Asphodeleae*. Allied to *Bowiea*.)

Greenhouse bulb. Seeds; offsets. Light loam; place in full sunshine. Summer temp., 60° to 80°; winter, 45° to 55°.

- S. intricata*. $\frac{3}{4}$. White, green. S. Africa. 1875.

Schizocæna. (From *schizo*, to cut, and *kainos*, unusual. Nat. ord., *Filices*.) A synonym of **Cyathea**.

Stove fern. See **FERNS**.

- S. Brunonis*. A synonym of *Cyathea Brunonis*.
- *sinuata*. A synonym of *Cyathea sinuata*.

Schizocæsia. (From *schizo*, to split, and *Casia*, a plant with divided leaves, allied to *Colocasia*. Nat. ord., *Aroidae*; Tribe, *Colocasiæ*. Very closely allied to *Alcacia*.)

Stove, herbaceous aroids. For culture, see **ALCASCIA**.

- S. Portei*. Philippine Islands. 1862.
- *Regnierii*. Leaves dark green, with whitish-green midrib and nerves. Siam. 1887. Ill. Hort. xxxiv. t. 6.

Schizolobium. (From *schizo*, to split, and *lobos*, a little pod; probably

in reference to the dehiscence of the pod. Nat. ord., *Leguminosæ*; Tribe, *Eucæsalpinieæ*.)

Stove evergreen tree. For cultivation, see POINCIANA, to which it is allied.
S. excelsum. Yellow. Brazil. 1874.

Schizoloma. (From *schizo*, to cut, and *loma*, an edge; edges of fronds cut. Nat. ord., *Filices*.) A synonym of **Lindsaya**.

Brownish-yellow-spored stove ferns. See FERNS.

S. ensifolia. May. Malacca. A synonym of *Lindsaya ensifolia*.
 — *heterophylla*. May. Isle of Luzon. A synonym of *Lindsaya heterophylla*.

Schizome'ria. (From *schizo*, to cut, and *meros*, a part; cut petals. Nat. ord., *Saxifragaceæ*; Tribe, *Cunoniææ*. 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. ovata. 8. White. Australia. 1825.

Schizopetalon. (From *schizo*, to cut, and *petalon*, a petal. Nat. ord., *Cruciferae*; Tribe, *Sisymbriææ*.)

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. Walkeri. 2. White. June. Chili. 1822.
 B. M. t. 2379.

Schizophragma. (From *schizo*, to cut, and *phragma*, an inclosure or wall; because the portions of the wall between the ribs of the fruit fall away when it is ripe. Nat. ord., *Saxifragaceæ*; Tribe, *Hydrangeææ*. Allied to *Hydrangea*.)

Greenhouse shrub. Seeds; cuttings in sand, under a bell-glass, in a slight bottom heat. Fibry loam and leaf-mould. Ordinary greenhouse treatment.

S. hydrangeoides. White or flesh-coloured. Japan. 1879. Rev. Hort. 1881, p. 313.

Schizostylis. (From *schizo*, to cut, and *stylos*, a column. Nat. ord., *Iridææ*; Tribe, *Ixiææ*.)

For cultivation, see LIBERTIA.

S. coccinea. 3. Crimson. Kaffraria. 1864. B. M. t. 5422. Half-hardy bulb.

Schlimia. (In compliment to M. Schlim, one of M. Linden's plant collectors. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Maxillariææ*.)

Stove epiphytal orchids. See ORCHIDS.

S. jasminodora. White. Central America. 1852.
 — *trifida*. White, purplish, orange. Columbia. 1876.

Schlumbergeria. (Named after F. Schlumberger, a Belgian horticulturist. Nat. ord., *Bromeliæææ*.)

Stove perennials. For cultivation, see TILLANDSIA.

S. Lindenii. Belg. Hort. 1883, p. 121, tt. 10-12.

See *Caraguata Lindenii*.

— *Morreniana*. Belg. Hort. 1883, p. 46, tt. 4-6.

See *Caraguata Schlumbergii*.

— *Roezii*. 3. White and greenish. Andes of Peru. 1879.

— *viridescens*. 2. Pale yellowish-green. March. Columbia. 1857. Syns., *Puya virescens*, *Anoplophytum vittatum*, *A. stramineum*, and *Tillandsia vittata*.

Schmidelia. (Named after C. C. Schmidel, a German botanist. Nat. ord., *Sapindaceææ*; Tribe, *Sapindæææ*; Syn., *Ornitropeææ*.)

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 fibry peat. Winter temp., 50° to 60°; summer, 60° to 85°.

S. comita. 20. Jamaica. 1778.

— *integrifolia*. Bourbon. 1804.

— *occidentalis*. 8. W. Ind. 1828.

— *racemosa*. 15. May. E. Ind. 1820.

— *serrata*. 12. E. Ind. 1804.

Schœnia. (In honour of Dr. Schœn, a botanical artist. Nat. ord., *Compositææ*; Tribe, *Inuloideææ*. 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. oppositifolia. 1. Pink. May. Swan River. 1846. B. M. t. 4560. Syn., *S. Cassiniana*.

Schœffia. (In honour of John Schœff, a German botanist. Nat. ord., *Olacineææ*.)

Stove, or greenhouse shrub. Propagated by cuttings in sand, under a bell-glass, in heat.

S. fragrans. 15. Pale yellow. June. Nepal. 1827.

Schomburgkia. (Named after Sir R. Schomburgk. Nat. ord., *Orchidæææ*; Tribe, *Epidendrææ-Laliæææ*. Allied to *Catleya*.)

Stove orchids, grown on blocks. See ORCHIDS.

S. chionodora. 1. White, with purple spots. Central America. 1886.

— *Kimballiana*. Light purple. 1888.

— *crispa*. 3. Yellow, brown, pink. January. La Guayra. 1844.

— *grandiflora*. See *S. tibicinis*, var. *grandiflora*.

— *Humboldtii*. 1. Pale lilac, purple; lip amethyst purple, yellow. Venezuela.

— *limpidissima*. 3. Purple. G. C. 1889, v. p. 72.

— *Lyonstii*. 3. White, marked with purple; lip white, yellow. August. Jamaica. 1853. B. M. t. 5172.

— *marginata*. 1½. Brick-red; lip white, pink, yellow. August. Surinam. 1838. B. M. t. 3729.

— *immarginata*. Brownish, margin not yellow; lip white. G. C. 1887, i. p. 447.

— *rosea*. Deep red, pale rose. Sierra Nevada.

— *Sanderaiana*. Rosy carmine. February. G. C. 1891, ix. p. 202.

— *Thomsoniana*. Light yellow, mauve, white; 3 L

lip blackish-purple, white, yellow. 1887. Syn., *Bletia Thomsoniana*.

S. tibiciniæ. 8. Pink, white. April. Honduras. 1834.

— *grandiflora*. 5. Brown, rose. May. Honduras. 1844. Syn., *S. grandiflora*. B. M. t. 4476.

— *undulata*. Purple. January. La Guayra. 1843. Syns., *S. violacea* and *Bletia undulata*. B. E. 1845, t. 53.

Scho'tia. (Named after R. V. Schot, who travelled with Jacquin. Nat. ord., *Leguminosæ*; Tribe, *Amherstieæ*. 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 fibry loam; flowers chiefly at the end of stiff young shoots.

S. alata. 5. Crimson. July. 1816.

— *latifolia*. Purple, white. June. 1810.

— *simplicifolia*. Red. June. 1816. Syn., *Bandeiræa simplicifolia*.

— *speciosa*. 5. Scarlet. August. 1759. Jacq. Ic. t. 75; Andr. Rep. t. 348.

— *stipulata*. 5. Crimson. July. 1794.

— *timarinifolia*. 6. Crimson. August. 1795. B. M. t. 1153.

Schousboë'a. (Named after P. K. A. Schousboe, once Danish consul in Morocco. Nat. ord., *Combretaceæ*.) A synonym of **Cacocua**.

S. coccinea. A synonym of *Cacocua coccinea*.

Schouw'ia. (Named after J. F. Schouw, a Danish botanist. Nat. ord., *Cruciferae*; Tribe, *Lepidieæ*.)

Hardy annual. Seeds in light, sandy soil, in April.

S. arabica. 3. Purple. June. Arabia. 1837. Ic. Pl. t. 223.

Schra'dera. (After Henry Adolf Schrader, 1767-1836, a German botanist. Nat. ord., *Rubiaceæ*.)

Stove, sub-epiphytal shrubs. Compost of sandy loam and peat. Cuttings in sand, under a bell-glass, in heat.

S. cephalotes. 4. White. July. Jamaica. 1820.

Schra'nkia. (Named after F. P. Schrank, a German botanist. Nat. ord., *Leguminosæ*; Tribe, *Eumimoseæ*. Allied to *Mimosa*.)

The leaves yield to the touch like those of the sensitive plant—*Mimosa pudica*. 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 fibry peat. Plant-stove and cool greenhouse treatment.

S. aculeata. 2. Red. July. Vera Cruz. 1738. Stove.

— *leptocarpa*. Rose. July. St. Domingo. 1837. Stove.

— *uncinata*. 2. Red. July. N. Amer. 1789. Greenhouse.

Schre'bera albens. A synonym of **Elæodendron pedunculatum**.

Schube'rtia. (Named after M. Schubert, a Polish botanist. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynancheæ*.)

Stove evergreen twiners, from Brazil. Cuttings

of stubby side-shoots in sand, under a bell-glass, in bottom-heat; sandy loam, fibry peat, and a little charcoal and pounded bricks, with pots well drained. Winter temp., 50° to 55°; summer, 60° to 85°.

S. auricoma, *S. Gra'hams*, *S. grandiflora*, and *S. graveolens* (B. R. 1846, t. 21) are all forms of *Araxia graveolens*.

— *capensis*. A synonym of *Widdringtonia juniperoides*.

— *disticha*. See *Taxodium distichum*.

Schwægriche'nia. (After Dr. Schwægrichen, an eminent bryologist. Nat. ord., *Hæmodoraceæ*.) A synonym of **Anigosanthos**.

S. flavida. A synonym of *Anigosanthos flavida*.

Schwa'nnia. (After Theodor Schwann, a physician at Bonn. Nat. ord., *Malpighiaceæ*. Syn., *Fimbriaria*.)

Stove evergreen, climbing shrub. Loam, leaf-mould and sand. Cuttings.

S. elegans. Red. June. Brazil. 1842.

Schweigge'ria. (Named after Professor Schweigger, a German botanist. Nat. ord., *Violaceæ*.)

Stove evergreen. Cuttings of firm side-shoots, two or three 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. pauciflora. White. May. Brazil. 1838. B. R. 1841, t. 40.

Sciado'calyx. (From *scias*, a parasol, and *calyx*; alluding to the shape of this part of the flower. Nat. ord., *Gesneraceæ*.) Now united with **Isoloma**.

This is a very gay stove plant, blooming from July to January. Cultivated like **ACHIMENES**.

S. Warszewiczii. 3. Scarlet, yellow. New Grenada Mountains. 1855. B. M. t. 4843.

A synonym of **ISOLOMA WARSZEWICZII**.

Sciadophyllum. (From *sciades*, shady, and *phyllon*, a leaf; the large leaves afford much shade. Nat. ord., *Araliaceæ*. Allied to the Ivy.)

Stove evergreens. Cuttings of half-ripened shoots in sand, under a bell-glass, in heat, in spring; sandy loam and fibry peat. Winter temp., 50° to 55°; summer, 60° to 80°. The Peruvian species will thrive well in a greenhouse with 10° less.

S. acuminatum. 10. Yellow. Peru. Climber. — *anomalum*. 20. White. Green. Trinidad. 1817.

— *Bromii*. 20. White. Jamaica. 1793.

— *conicum*. 10. Pale red. Peru. Climber.

— *digitatum*. 10. Green. E. Ind. 1820.

— *pedicellatum*. 10. Purple. Peru. Climber.

— *pentanarum*. 8. Pale red. Peru. 1820.

Sciado'pitys. (From *scias*, a parasol, and *pitys*, a fir tree; referring to the spreading whorls of leaves. Nat. ord., *Coniferae*; Tribe, *Araucarieæ*.)

Hardy evergreen. Imported seed. Rich light loam.

S. verticillata. 140. Japan. 1861. Fl. Ser. t. 1483.

— *variegata*. Some of the leaves are pale yellow. Garden variety. 1887.

Sci'ara. S. py'ri. Small Pear Midge. *S. Schmidbe'rgeri*, 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 also are 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 ashy-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 ashy-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 *skyllo*, to injure; the bulbs said to be poisonous. Nat. ord., *Liliaceæ*; Tribe, *Scilleæ*.)

Offsets; light, sandy soil.

GREENHOUSE BULBS.

- S. Adla'mi*. Mauve-purple. Natal. 1891.
 — *Be'llii*. †. Brownish-blue. Spring. Central Persia. 1884.
 — *Berthelo'tii*. Pink. Tropical Africa. 1862. Stove. B. M. t. 5308.
 — *brevifo'lia*. B. M. t. 1468. A synonym of *Hyacinthus brevifolius*.
 — *chine'nsis*. Pale blue. May. China. 1819. B. R. t. 1029. Syn., *Barnardia scilloides*.
 — *conci'nna*. Rosy-purple. S. Africa. 1862. Ref. Bot. t. 235.
 — *co'ncolor*. Purple, green. S. Africa. 1862. Syn., *Drimia Cooperi*.
 — *Coop'e'ri*. Purple. S. Africa. 1886. B. M. t. 5580.
 — *floribu'nda*. 1. Green, purple. S. Africa. 1862. Ref. Bot. t. 188.
 — *humifu'sa*. †. Reddish-green. Spring. Natal. 1881.
 — *hyacinthoi'des*. †. Blue. August. Madeira. 1585. B. M. t. 1140.
 — — *stri'cta*. Flower-stalks erect. Palestine. †.
 — *laxifo'ra*. †. Green; filaments purple. S. Africa. 1891.
 — *Ledi'eni*. Green, purplish. Congo. 1889. Gff. t. 1294. Stove.

- S. linearifo'lia*. Larid purple. S. Africa. 1862. Ref. Bot. t. 184.
 — *W'ida*. †. Green, tinged with dull purple. July. S. Africa. 1883.
 — *lora'ta*. Purple-green. S. Africa. 1862. Syn., *Drimia apertiflora*. Ref. Bot. t. 19.
 — *Mac'o'vani*. †. Greenish. S. Africa. 1875.
 — *mar'i'tima*. See *Urginea maritima*.
 — *maurita'nica*. †. Blue. April. Portugal and Tangiers. 1819.
 — *microscy'pha*. †. Green. Spring. Natal. 1881. Sometimes erroneously called *Drimia microscypha*.
 — *natal'e'nsis*. Blue. Natal. 1863. Greenhouse. B. M. t. 5379.
 — — *so'r'rida*. A small variety. Leaves tinged with brown.
 — *ovati'fo'lia*. Rosy. Natal. 1862.
 — *pallidi'fo'ra*. 1. White. S. Africa. 1870.
 — *paucifo'lia*. Green, whitish. S. Africa. 1862.
 — *pe'ndula*. 1. Green; stamens lilac. Natal. 1878.
 — *phu'mbea*. 1. Dull blue. May. S. Africa. 1812.
 — *polya'ntha*. 1. Purple, green. S. Africa. 1878.
 — *prasi'na*. Green, purple. S. Africa. 1870.
 — *pri'nceps*. Yellowish-green, purple. S. Africa. 1862. Ref. Bot. t. 189.
 — *social'is*. Greenish. S. Africa. 1862. Ref. Bot. t. 180.
 — *spathula'ta*. †. Green, purple. S. Africa. 1862. Ref. Bot. t. 187.
 — *subglau'ca*. Rose-purple. S. Africa. 1862. Ref. Bot. t. 186.
 — *subse'u'nda*. †. Greenish-brown; filaments purple. E. Cape Colony. 1881.
 — *tri'color*. †. Green. Natal. 1880.
 — *versi'color*. Greenish-white. S. Africa. 1872. Ref. Bot. t. 305.
 — *zebri'na*. Yellowish-green, purple. S. Africa. 1862. Ref. Bot. t. 185.

HARDY BULBS.

- S. amo'e'na*. †. Blue. March. Levant. 1596.
 — — *sibi'rica*. B. M. t. 1025. A synonym of *S. sibirica*.
 — *amo'e'nula*. B. M. t. 2408. A form of *S. sibirica*.
 — *antitau'rica*. Blue. February. Anti-Taurus. 1889.
 — *autumna'lis*. †. Pink. August. England. Eng. Bot. ed. 3, t. 1528. *S. autumnalis* of B. M. t. 919 is *S. obtusifolia*.
 — — *a'iba*. †. White. August.
 — — *ma'jor*. †. Pink. August. Britain.
 — *Bertolo'nii*. See *S. italica*.
 — *bifo'lia*. †. Blue. March. England. B. M. t. 746.
 — — *a'iba*. †. White. March. South Europe.
 — — *ru'bra*. †. Red. March. South Europe.
 — *bruma'lis*. Blue. May. N. Amer. 1841.
 — *campanula'ta*. B. M. t. 1102. See *S. hispanica*.
 — *ce'r'mua*. See *S. nutans*.
 — *corymbo'sa*. See *S. nutans*.
 — *Cupa'ni*. 1. Purple. June. Sicily. 1834. Syn., *S. Cupaniana*. B. R. t. 1878.
 — *escule'nta*. B. M. t. 1574. See *Camassia Fraseri*.
 — — *flore a'iba*. B. M. t. 2774. See *Camassia esculenta*, var. *flore albo*.
 — *festi'lis* is the oldest name for the plant known as *S. nonscripta* or *S. nutans*.
 — *hispa'nica*. 1. Dark blue. May. Spain. 1683. Syn. *S. campanulata*.
 — — *a'iba*. 1. White. May. South Europe. 1683.

- S. hispanica carneae*. 1. Pink. May. South Europe. 1683.
 — *Hu'ghii*. Blue. Sicily. 1873.
 — *indica*. 1. East Indies. 1816. Syn., *Ledebouria indica*. B. M. t. 3226.
 — *italica*. $\frac{1}{2}$. Blue. May. Switzerland. 1605. B. M. t. 663.
 — *li'lio-hyacinthus*. 1. Blue. June. Europe. 1597. Red. Lil. t. 205.
 — *lingula'ta*. Blue. Algeria. 1887. Gf. t. 1261.
 — — *a'lba*. White. Algeria. 1887.
 — — *lilaci'na*. Lilac-blue. Algeria. 1887.
 — *lusita'nica*. $\frac{1}{2}$. Blue. May. Portugal. 1777. B. M. t. 1999.
 — *monophylla*. Blue. May. Spain. 1821. Syn., *S. pumila*.
 — *no'n-scripta*. B. M. t. 1461. See *S. nutans*.
 — *nutans*. $\frac{1}{2}$. Blue. April. Britain. Syn., *S. festalis*, *S. non-scripta*, *Agraphis nutans* and *Hyacinthus non-scriptus*. Eng. Bot. ed. 3, t. 1528. Bluebell; Wild Hyacinth.
 — — *a'lba*. White. April. Britain.
 — — *car'nea*. $\frac{1}{2}$. Flesh. April. Britain.
 — — *ro'sea*. Rose.
 — — *ru'bra*. Red.
 — *obtusifo'lia*. $\frac{1}{2}$. Blue. March. South Europe. 1829. Red. Lil. t. 190. Syn., *S. autumnalis* of B. M. t. 919.
 — *odora'ta*. Blue. May. Portugal. 1818.
 — *peruvia'na*. 1. Dark blue. May. Spain. 1607. B. M. t. 749.
 — — *a'lba*. 1. White. May. South Europe. 1607.
 — — *di'scolor*. 1. Buff. May. Portugal. 1843.
 — *pomeridia'na*. Red. Lil. t. 421. A synonym of *Chlorogalum pomeridianum*.
 — *prebractea'ta*. 1. Blue. June. South Europe.
 — *pre'cox*. Swt. Fl. Gard. ser. 2, t. 141. See *S. sibirica*.
 — *prate'nsis*. Blue. May. Hungary. 1827. B. R. 1839, t. 63.
 — *pu'bens*. $\frac{1}{2}$. Blue. May. Lunimar.
 — *pu'mila*. B. M. t. 3023. See *S. monophylla*.
 — *puschkinioides*. Pale blue. Spring. Turkestan. 1881. Gf. t. 1050, fig. 1.
 — *roma'na*. B. M. t. 939. See *Hyacinthus romanus*.
 — *ro'sea*. A form of *S. bifolia*.
 — *sero'tina*. B. M. t. 859. See *Dipcadi serotinum*.
 — — var. B. M. t. 1185. See *Dipcadi serotinum*, var. *fulvum*.
 — *sibi'rica*. $\frac{1}{2}$. Blue. February. Siberia. 1796. Andr. Rep. t. 365.
 — *umbella'ta*. $\frac{1}{2}$. Blue. April. Pyrenees. 1822. Red. Lil. t. 166.
 — *unifo'lia*. A synonym of *Ornithogalum unifolium*.
 — *ve'rna*. $\frac{1}{2}$. Blue. April. Britain. Sea Onion.
 — — *a'lba*. $\frac{1}{2}$. White. May.
 — — *ro'sea*. Rose. May.
 — *villo'sa*. $\frac{1}{2}$. Lilac. Tripoli. 1821. B. M. t. 3211.

Scindapsus. (From *skindapsos*, an ancient name for an Ivy-like climber. Nat. ord., *Aroidæ*; Tribe, *Callicæ*.) Allied to *Raphidophora*.)

Stove evergreen climbers, requiring the same treatment as *MONSTERA*, *RAPHIDOPHORA*, or *PHILODENDRON*.

S. andromeda. Young leaves entire, those produced later divided. Rev. Hort. 1884, p. 536, fig. 114.

- S. argy'rea*. Borneo. 1859. Syn., *Pothos argyrea*.
 — *officina'lis*. 4. Green, dull yellow. May. India. 1820.
 — *peru'sa*. Rev. Hort. 1883, p. 561, fig. 111. The plant here figured is *Monstera deliciosa*.
 — *pi'cta*. Leaves dark green and clouded above, pale green beneath. Java.

Sciadophyllum. See **Sciadophyllum**.

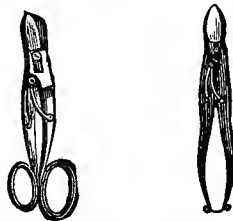
Scion. See **Graff**.

Scirpus. Rush. (A name used by classical writers for the Rush. Nat. ord., *Cyperaceæ*; Tribe, *Scirpeæ*.)

A large genus of marsh plants. The species in cultivation are hardy, or half-hardy perennials.

- S. Holoschoenus variegatus*. 1 $\frac{1}{2}$. Green. Seashores of Europe.
 — *lacu'stris*. 1-8. Reddish-brown. July. Northern Europe.
 — *ripa'rius*. Brownish. Extra-tropical regions. Syn., *Isolepis gracilis*.
 — *seta'ceus*. $\frac{1}{2}$. Green, brown. July. Britain. Eng. Bot. ed. 3, t. 1594. Syn., *Isolepis setaceus*.
 — *Tabernaemontani zebrina*. 2-3. Japan. 1881. Syn., *Juncus zebrinus*. The leaves are terete and banded with green and white, in a similar manner to a porcupine's quill, hence the name—Banded Rush.

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 hybridizing, and for thinning grapes. Stouter pairs are used for removing



flower-stalks when the petals have fallen from roses, etc. Sliding pruning scissors (see fig.) 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.

Shears are only large scissors. *Hedge Shears* for clipping hedges are the most common, and are now made with a notch in one of the blades near the rivet, to act as a fulcrum when cutting the larger branches. *Sliding Pruning Shears*, with a movable centre, so as to make a drawing cut when used as when the pruning knife is employed. See **Averuncator**.

The drawing shows the smaller size,

used with one hand. The large size, which has wooden handles, will, when employed with both hands, cut through a bough full three 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 the Italian *schia'rea*, clear; the flowers of the common species are of a clear blue colour. Nat. ord., *Labiatae*; Tribe, *Monardeæ*.) A synonym of **Salvia**.

Scleria. (From *skleria*, hardness; the character of the nutlet. Nat. ord., *Cyperaceæ*; Tribe, *Scirpeæ*.)

Hardy marsh herbs, requiring the same culture as **SCRIPUS**.

S. ciliata. 2. June. Southern United States.

1823.

— *verticillata*. 1. June. North America.

1825.

Scler'oon. (From *scleros*, hard, and *oon*, an egg; hard seeds. Nat. ord., *Verbenaceæ*; Tribe, *Viticeæ*. Allied to *Cornutia*.) Now united with **Petitia**.

Greenhouse evergreen. Cuttings of young shoots in sand, under a bell-glass, in spring; peat, loam, and leaf-mould, and half a part of silver sand. Winter temp., 38° to 48°; summer, 60° to 75°.

S. oleinum. 2. Green, white. May. Mexico. 1840. The correct name of this is **PETITIA OLEINA**.

Sclerotha'mnus. (From *scleros*, hard, or rigid, and *thamnus*, a shrub. Nat. ord., *Leguminosæ*; Tribe, *Podalyriæ*. Allied to *Pultenæa*.) A synonym of **Eutaxia**.

Greenhouse evergreen. Cuttings of stiff side-shoots in April or May, in sand, under a bell-glass; two parts peat, and one part of sandy, fibry loam, and one of equal parts broken bricks, charcoal, and silver sand. Winter temp., 40° to 48°.

S. microphyllus. 2. Yellow. May. Australia. 1803. A synonym of **EUTAXIA MICROPHYLLA**.

Scolope'ndrium. Hart's Tongue. (From *scolopendra*, a centipede; the appearance of the seed, or spore-cases. Nat. ord., *Filices*.)

Hardy or greenhouse brown-spored ferns. See **FERNs**.

S. Hemionitis. 1. August. Spain. 1779.

— *Krebitii*. A synonym of *Lomaria punctulata*.

— *officinatum*. See *S. vulgare*.

— *palma'tum*. See *S. Hemionitis*.

— *pinna'tum*. 1. May. India. Greenhouse.

— *rhizophyllum*. May. North America. Syn., *Antigramma rhizophylla* and *Campotossurus rhizophyllum*. Greenhouse.

S. vulgare. 1½. Europe. Syn., *S. officinarum*. Hart's tongue. The forms of this are extremely numerous.

— *acrocila'don*. Fronds narrow, branched and crested.

— *angustifolium*. ½. July. Britain.

— *claphamii*. Fronds forked, crested; edges lacinate.

— *columnna're*. ½. Fronds fringed.

— *Coolidgei*. ½. Fronds very much branched, and forming an almost spherical plant.

— *crispum*. 1½. July. Britain.

— *cristatum*. Fronds branched and expanded upwards.

— *densum*. ½. Resembling curled parsley. 1882.

— *Kelewa'yi*. 1880.

— *laceratum*. Much crested and curled at the tips.

— *marginatum*. 1. Margins of frond thickened beneath and often with projecting points.

— *multifidum*. 1½. July. Britain.

— *ramo-marginatum*. Intermediate between the varieties *cristatum* and *marginatum*.

— *ramosum*. 1½. July. Britain.

— *Stansfieldii*. Fronds fringed at the edge and crested at the tips.

— *undulatum*. 1½. July. Britain.

— *Valloisii*. Fronds dilated and crested at their tips. Rev. Hort. 1886, p. 447, fig. 114.

Scoly'mus. Golden Thistle. (From *skolos*, a thorn; plants spiny. Nat. ord., *Compositæ*; Tribe, *Cichoriaceæ*. Allied to *Chichory*.)

Hardy, yellow-flowered plants. Seeds and divisions in spring; common garden-soil.

S. grandiflorus. 3. May. Barbary. 1820.

Herbaceous.

— *hispanicus*. 3. August. South Europe.

1658. Herbaceous. Sibth. Fl. Gr. t. 825.

— *maculatus*. 3. July. South Europe. 1633.

Annual. Sibth. Fl. Gr. t. 824.

Scolytus. 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., *Solanaceæ*; Tribe, *Hyoscyameæ*. 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. aculeata. See *Toddalia aculeata*.

— *carniolica*. 1. Dark purple. April. Car.

nola. 1780. Syn., *S. atropoides* and

Hyoscyamus Scopolia. B. M. t. 1126.

— *lu'rida*. 5. Green, changing to yellowish, then to purple. Nepal. 1824. Syn., *Whitleya stramonifolia*. Swt. Fl. Gard. t. 125.

— *mutica*. 1½. Yellow. May. Egypt. 1829. Syn., *Hyoscyamus datora*. Half-hardy evergreen.

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 *schorodon*, garlic, and *osme*, smell. Nat. ord., *Umbelliferæ*; Tribe, *Peucedaneæ*.) A synonym of **Ferula**.

S. foetidum. Wien. Gart. 1838, p. 74, fig. 13. A synonym of *Ferula asafetida*.

Scorpion Grass. *Myosotis*.

Scorpion Senna. *Coronilla emerus*.

Scorzone'ra. Viper's Grass. (From *scurson*, a viper; supposed remedy for the bite of a viper. Nat. ord., *Compositæ*; Tribe, *Cichoriaceæ*. Syn., *Podospermum*.)

Hardy herbaceous; yellow-flowered, except where otherwise stated. Seeds in April or May; common garden-soil.

S. angustifolia. ½. July. South Europe. 1759.

— *austriaca.* 1. August. Europe. 1597.

Syn., *S. humilis*.

— *calcitrapifolia.* 1. June. Levant. 1820.

Sibth. Fl. Gr. t. 787. Syn., *Podospermum*

calcitrapifolium.

— *caricifolia.* 1½. July. Siberia. 1805.

— *ensiifolia.* ½. May. Caucasus. 1825.

— *eriosperma.* 1. August. Italy. 1816. Syn.,

Lastospermum eriospermum. Half-hardy.

— *glastifolia.* 2. July. Germany. 1816.

— *graminisifolia.* 2. July. Portugal. 1759.

Sibth. Fl. Gr. t. 784.

— *hirsuta.* 1½. June. South Europe. Syn.,

Geropogon calyculatus. Jacq. Vind.

t. 106.

— *hispanica.* 3. July. Spain. 1576.

— *humilis.* See *S. austriaca*.

— *intermedia.* June. Russia. Syn., *Podospermum*

intermedium.

— *Jacquina.* June. Persia. 1838. Syn.,

Podospermum canum.

— *lacinia'ta.* 2. June. South Europe. 1640.

Sibth. Fl. Gr. t. 788. *Podospermum*

laciniatum.

— *landa'ta.* 1. July. Iberia. 1824.

— *latifolia.* June. Persia. 1830.

— *mol'lis.* 1½. July. Caucasus. 1818. B. M.

t. 3027.

— *octangula'ris.* 1. June. South Europe.

1818. Syn., *Podospermum octangulare*.

— *pum'ila.* 1. June. Spain. 1816. Syn.,

Podospermum pumilum.

— *purpu'rea.* 2. Purple. May. Austria. 1759.

B. M. t. 2294.

— *resedace'folia.* 1½. June. South Europe. 1818.

Syn., *Podospermum resedacefolium*.

— *ro'sea.* 1½. Pink. July. Hungary. 1807.

— *taraxacifolia.* 1. June. Bohemia. 1820.

Jacq. Ic. t. 160. Syn., *Podospermum*

taraxacifolium.

— *tubero'sa.* ½. June. Volga. 1825.

— *undula'ta.* 1-2. Purple. July. Algeria.

1874. B. M. t. 6127.

Scorzone'ra in the kitchen-garden is the *S. hispanica*, 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 half-inch deep drills, twelve inches asunder. Thin the plants to ten 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. *Tafel'idia alpi'na.*

Scotch Bonnets. *Mara'smius ore'ades*, a fungus.

Scotch-kale. *Bra'ssica olera'cea sabellica.*

Scotch Laburnum. *Cytisus alpi'nus.*

Scotch Pine. *Pi'nus sylve'stris.*

Scotch Primrose. *Pri'mula sco'tica.*

Scot'tia. (Named after *Dr. Scott*, once professor of botany in Dublin. Nat. ord., *Leguminosæ*; Tribe, *Genisteæ*.) United with **Bossiaea** in the "Genera Plantarum."

Greenhouse evergreen shrubs, from Australia. Cuttings of shoots, when getting a little firm at the base; sandy, fibry loam one part, and two parts of sandy, fibry peat, with a little charcoal. Winter temp., 40° to 48°.

S. angustifolia. 6. Green, yellow. April.

1825. B. R. t. 1268. Sometimes regarded

as a variety of *S. dentata*.

— *denta'ta.* 3. Red, green. July. 1803.

— *la'vis.* 3. Yellow, scarlet. June. 1833.

B. R. t. 1662. Syn., *S. dentata*, var.

hastata.

— *trapezifo'rmis.* January. 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 in widths of three yards, which is enough for most walls, which is sold at about fivepence

per square yard, 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 two-pence-halfpenny, exclusive of a few ordinary poles. We place a pole every six feet, running under the coping at top, and straddling away nearly two feet at bottom. At two feet above the ground level an auger hole is bored in the pole, and an oaken peg driven in, the end left projecting nine 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 conservatory 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 two feet from the stems of the trees. See **Glass Case**.

Screw Pine. *Pa'ndanus*.

Screw-tree. *Heli'ctres*.

Scrophularia. (So called from being a reputed remedy for Scrophula. Nat. ord., *Scrophulariaceæ*; Tribe, *Che-loneæ*.)

Hardy perennial herbs. Seeds, or divisions of the plants. Ordinary garden-soil.

S. chrysantha. $\frac{1}{2}$ -1 $\frac{1}{2}$. Golden-yellow. March. Asia Minor. 1882. B. M. t. 6629.
— *sublyrata*. 3. Green, purple. August. Portugal. 1879.

Scrub Oak. *Que'rcus Catesbaei*.

Scrubby Oak. *Lophi'ra africana*.

Scurvy Grass (*Cochlea'ria officinalis*) flourishes most in a sandy, moist soil. Sow as soon as the seeds are ripe

in June or July, in drills, eight inches apart, and half an inch deep. Thin to eight 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., *Labiatæ*; Tribe, *Stachydeæ*.)

Seeds and divisions in spring, and the evergreen kinds easily by cuttings under a hand-light; some of the tender species are very handsome, such as *cordifolia*; but the red spider must be looked after.

TENDER SPECIES.

S. albo-ro'sea. Lilac. Upper Amazons. 1869.
— *aura'ta*. Yellow. Brazil. 1863.
— *cordifolia*. 1. Scarlet, orange. September. Mexico. 1844. Stove evergreen. B. M. t. 4290.
— *costarica'na*. Scarlet, yellow. June. 1864.
— *Hartwegi*. 2. Bright red, violet. Summer. Quito. 1882. B. M. t. 6615. Stove subshrub.
— *hu'nibis*. $\frac{1}{2}$. Blue. June. N. S. Wales 1823. Greenhouse.
— *incarna'ta*. $\frac{1}{2}$. Rose. August. Quito 1844. Greenhouse evergreen. B. M. t. 4268.
— *Triana'i*. Rosy-scarlet. B. M. t. 5185.
— *Lehma'nni*. 2. Bright scarlet. Summer. Columbia. 1884. Gf. t. 1152. Fig. 1, a-c. Stove perennial.
— *Mocinia'na*. $\frac{1}{2}$. Scarlet, yellow. Mexico. 1868.
— *Ventena'tii*. 2. Scarlet. August. St. Martha. 1844. Greenhouse. B. M. t. 4271.
— *villo'sa*. $\frac{3}{4}$. Scarlet. February. Peru. 1842. B. M. t. 4789.

HARDY HERBACEOUS.

S. alpi'na. $\frac{3}{4}$. Purple. August. Hungary. 1752. B. R. t. 1460.
— *lupuli'na*. Yellow. August. Tartary. 1789. B. R. t. 1493. Syn., *S. lupulina*.
— *sanguinea*. $\frac{1}{2}$. Red. July. 1835.
— *variega'ta*. $\frac{1}{2}$. Pale yellow. August. Switzerland.
— *altissima*. 1. Dark purple. July. Crimea. 1824. B. M. 2548.
— *Cohl'muce*. $\frac{1}{2}$. Blue. July. South Europe. 1806. Swt. Fl. Gard. t. 52.
— *commuta'ta*. Purple. August. Hungary. 1683.
— *galericula'ta*. 1. Blue. July. Britain. Eng. Bot. ed. 3, t. 1060.
— *grandiflora*. $\frac{1}{2}$. Red. July. Siberia. 1804. B. M. t. 635.
— *hastifolia*. $\frac{1}{2}$. Purple. June. Germany. 1798.
— *hirta*. Dark purple. June. Candia. 1835. Sibth. Fl. Gr. t. 583. Syn., *S. decumbens*.
— *integrifolia*. 1. Blue. July. N. America. 1781. Syn., *S. hyssopifolia*.
— *japonica*. $\frac{1}{2}$. Purple, white. August. Japan. 1838. Fl. Ser. t. 16.
— *lateriflora*. 1. Blue. July. N. Amer. 1752.
— *macra'ntha*. $\frac{3}{4}$. Blue. August. Dahuria. 1827. B. C. t. 1865.

- S. mi'nor.* †. Pink. July. Britain. Eng. Bot. ed. 8, t. 1061.
 — *nervosa.* 1. Blue. July. Virginia. 1826.
 — *orientalis.* 1. Yellow. August. Levant. 1729. B. M. t. 1061.
 — *parvula.* †. Blue. July. N. Amer. 1822. Syn., *S. ambigua.*
 — *peregrina.* 2. Violet. August. Tauria. 1823. Sibth. Fl. Gr. t. 582. Syn., *S. rubicunda.*
 — *pilosissima.* 1. Blue. July. N. Amer. 1825. Syn., *S. caroliniana.*
 — *purpurascens.* 2. Blue. June. W. Ind. 1820.
 — *serrata.* †. Blue. August. N. Amer. 1800. Andr. Rep. t. 494.
 — *Tournefortii.* 1‡. Purple. July. Persia. 1837.
 — *verna.* ‡. Blue. June. South Europe. 1821.

Scuticaria. (From *scutica*, a whip; leaves as round as a whipcord. Nat. ord., *Orchideæ*; Tribe, *Vandeeæ*—*Maxillariaceæ*.)

Stove orchid, grown on blocks. See ORCHIDS. *S. Dodsonii*, G. C. 1881, xv. p. 9, is a very doubtful plant.

- *Hadwera.* 1‡. Green, chocolate, white. June. Brazil. 1851. Syn., *Bifrenaria Hadwera.* B. M. t. 4629.
 — *Steelii.* Yellow-spotted. July. Guiana. 1834. Syn., *Macillaria Steelii.* B. M. t. 3573; B. R. t. 1986.

Scyphanthus. (From *scyphos*, a cap, and *anthos*, a flower. Nat. ord., *Loasaceæ*.) A synonym of **Grammatocarpus**.

Hardy, yellow-flowered, twining annuals, from Chili. Seeds in the open air in May, or in a slight hotbed in March, to be afterwards transplanted.

S. elegans, Swt. Fl. Gard. t. 238, and *S. grandiflorus* are synonyms of *Grammatocarpus volubilis*.

Scythe. This mowing implement is confined, in the garden, to cutting the coarser, long grass, for which the mowing machine is not adapted. It is 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 this, have the scythe laid out rather wider, an inch or two beyond heel and toe, especially for short grass; and in mowing keep the point rather out, and do not draw that part too fast forward, 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. *Convolvulus Soldanelia.*

Sea-buckthorn. *Hippophaë rhamnoides.*

Seaforthia. (Named after Lord Seaforth, a botanical patron. Nat. ord., *Palmææ*; Tribe, *Areceæ*.) A synonym of **Ptychosperma**, but most of the plants grown in gardens under this name belong to the genus **Pinanga**.

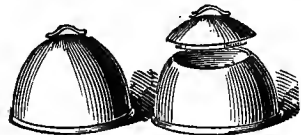
- S. coronata* = *Pinanga coronata*.
 — *costata* = — *costata*.
 — *Dicksonii* = — *Dicksonii*.
 — *elegans* = *Archontophoenix Cunninghamiana*.
 — *Kuhlii* = *Pinanga Kuhlii*.
 — *latifolia* = — *latifolia*.
 — *malayana* = — *malayana*.
 — *sylostris* = — *javamica*.
 — *Veitchii* = — *Veitchii*.

Sea-heath. *Frankenia laevis.*

Sea-holly. *Eryngium maritimum.*

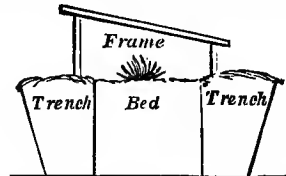
Sea-kale. *Crambe maritima.* See **Crambe**.

In addition to what is there stated of its culture, we have only to give draw-



ings 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 three-foot



bed dig a trench two feet deep, the side of it next the bed being perpendicular, but the outer side sloping, so as to make it eighteen inches wide at the bottom,

but two and a half 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, etc. The accompanying sketch represents a section of the construction.

Sea Lavender. *Statice Limonium*.

Sea Ragwort. *Cineraria maritima*.

Sea-side Grape. *Coccoloba*.

Sea-side Balsam. *Croton eleuteria*.

Sea-side Laurel. *Xylophylla latifolia*.

Sea-weed. See **Green Manure**.

Sebæa. (Named after *A. Seba*, a Dutch botanist. Nat. ord., *Gentianæ*; Tribe, *Exacææ*.)

Greenhouse annuals, all but *ovata* 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. albens. $\frac{1}{2}$. White. August. 1820.

— auræa. $\frac{1}{2}$. Yellow. July. 1824.

— cordata. $\frac{1}{2}$. Yellow. July. 1815.

— ovata. $\frac{1}{2}$. Red. August. New S. Wales. 1820.

Secamone. (Altered from *squamona*, the Arabic name. Nat. ord., *Asclepiadacææ*.)

Stove, white-flowered, evergreen twiners. Cuttings of firm side-shoots when about three inches in length; fibry loam, two parts; fibry 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. ægyptiaca. 6. July. Egypt. 1752.

— elliptica. 6. N. Holland. 1824.

— emetica. 6. India. 1816. Wight Ic. t. 1288.

Sechium. Choko. (From *sekiso*, to fatten; hogs are fed on the fruit in Jamaica. Nat. ord., *Cucurbitacææ*.)

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. edule. 6. June. W. Ind. 1816.

— palmatum. June. Mexico. 1827.

Securidaea. (From *securis*, a hatchet; form of the wing-like process at the end of the pod. Nat. ord., *Polygalacææ*.)

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, fibry peat.

S. erecta. Purple. July. 1824.

— paniculata. Yellow. July. 1820.

— ramiflora. Yellow, red. August. Siberia. 1785. Syns., *Phyllanthus ramiflorus* and *Xylophylla ramiflora*.

S. virgata. 10. White. 1739.

— volubilis. 10. White. 1739.

Se'dum. Stonecrop. (From *sedere*, to sit; they grow as if sitting on stones, rocks, walls, etc. Nat. ord., *Crassulacææ*.)

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 alpine. The greenhouse kinds require similar treatment, only a higher temperature, and to be kept even drier in winter.

HARDY HERBACEOUS.

S. acre. 4. Yellow. June. Britain. Eng. Bot. ed. 3, t. 532. Varieties are:—*aurum*, *elegans*, and *majus*.

— dimidiatum. $\frac{1}{2}$. Yellow. June. England.

— elongatum. $\frac{1}{2}$. Yellow. June. England.

— adenotrichum. Pinkish-white. Himalays. 1872.

— aizoon. 1. Yellow. August. Siberia. 1757.

— Alberti. White. July. Turkestan. 1880.

— albescens. $\frac{1}{2}$. Yellow. June. England.

— albicans. 2. White. August. Europe. 1794.

— albo-roseum. 1 $\frac{1}{2}$. White, rose-tinted. Japan. 1860.

— album. $\frac{1}{2}$. White. June. England. Eng. Bot. ed. 3, t. 529.

— micranthum. $\frac{1}{2}$. White. June. England.

— altatum. 1. Yellow. June. Altaic Mountains. 1831.

— altissimum. 1. Yellow. July. S. Europe. 1769.

— anacamperos. $\frac{1}{2}$. Purple. July. France. 1596. B. M. t. 118. Evergreen Orpine.

— Andegavense. $\frac{1}{2}$. Yellow. July. Andegavenny. 1835.

— Anderssonii. $\frac{1}{2}$. White. June. Hungary. 1816. Biennial.

— anglicum. $\frac{1}{2}$. White. July. Britain.

— hibernicum. $\frac{1}{2}$. White. July. Ireland.

— microphyllum. $\frac{1}{2}$. White. July. Britain.

— anopetalum. $\frac{1}{2}$. Pale yellow. July. South France. 1818.

— aurantiacum. $\frac{1}{2}$. Orange. June. France. 1820.

— atratum. $\frac{1}{2}$. Purple. August. Italy. 1795.

— caespitosum. White. Corsica. 1872.

— calabricum. 1. Whitish. July. Calabria. 1835.

— carneum. Yellow. Japan. The white-leaved variety is pretty, and useful for basket cultivation.

— Cepæa. 1. White. July. France. 1640. B. R. t. 1391.

— cæruleum. $\frac{1}{2}$. Pale blue. July. Africa. 1822.

— cærule scens. $\frac{1}{2}$. Yellow. July. 1820.

— Cooperi. $\frac{1}{2}$. White. 1869.

— cordifolium. 1 $\frac{1}{2}$. White, purplish-tinted. 1860.

— cyanum. $\frac{1}{2}$. Purplish. Siberia. 1879.

— dasyphyllum. $\frac{1}{2}$. White. June. England. Jacq. Vind. t. 153.

— deltoideum. Purple. June. Naples. 1826.

— dentatum. $\frac{1}{2}$. Purple. June. 1810.

— elongatum. Yellow. May. Altai. 1827.

— Ewersii. $\frac{1}{2}$. June. Siberia. 1829.

— fabaria. White. July. Europe. 1836. Biennial.

— Forsterianum. $\frac{1}{2}$. Yellow. July. Wales.

— fruticulosum. $\frac{1}{2}$. Yellow. Portugal. 1829.

- S. glanduliferum*. $\frac{1}{2}$. White, rose. Morocco. 1873. Syn., *S. dasyphyllum*, var. *glanduliferum*.
 — *glandulosum*. 4. Rosy-purple. June. Sardinia. 1871.
 — *glaucum*. $\frac{1}{2}$. Yellow. July. England.
 — *globulifolium*. Yellow. June. 1838.
 — *hispanicum*. $\frac{1}{2}$. Pale yellow. June. Spain. 1732.
 — *hybridum*. $\frac{1}{2}$. Yellow. June. Siberia. 1776.
 — *ibericum*. $\frac{1}{2}$. Pink. July. Spain.
 — *involutum*. $\frac{1}{2}$. Yellow. July.
 — *japonicum*. Yellow. Japan. 1866.
 — *kamtschaticum*. Yellow. June. Songaria. 1844.
 — *latifolium*. Greenish-white. August. Switzerland. 1794.
 — *lividum*. $\frac{1}{2}$. White, green. July. 1816.
 — *lydium*. $\frac{1}{2}$. White. Asia Minor.
 — *magellanicum*. Yellow. July. Magellan. 1816.
 — *maximowiczii*. 1. Yellow. Japan. 1867.
 — *micranthum*. White. June. England.
 — *Middendorffianum*. $\frac{1}{2}$. Yellow. Turkestan. 1880.
 — *multicaule*. Yellow. May. Himalaya Mountains. 1838.
 — *neglectum*. 1. White. August. Naples. 1835.
 — *Notarjanum*. White. July. Naples. 1824.
 — *oblongum*. $\frac{1}{2}$. White. July. Britain.
 — *ochroleucum*. 1. White. July. Greece. 1838.
 — *oppositifolium*. $\frac{1}{2}$. White. August. Caucasus. B. M. t. 1807.
 — *paucens*. $\frac{1}{2}$. White. July. South Europe. 1816. Biennial.
 — *paucidum*. $\frac{1}{2}$. Pale red. July. Caucasus. 1817.
 — *pectinata*. $\frac{1}{2}$. White. July. 1818.
 — *populifolium*. 1. White. August. Siberia. 1780.
 — *pulchellum*. $\frac{1}{2}$. Rosy-purple. July. North America. 1874.
 — *puberulum*. Purple. July. N. America. 1824.
 — *purpureum*. $1\frac{1}{2}$. Purple. August. Siberia. 1852.
 — *quadrifidum*. $\frac{1}{2}$. Yellow. July. New Asia. 1800.
 — *reflexum*. 1. Yellow. June. England.
 — *collium*. 1. Yellow. 1815.
 — *recurvatum*. $\frac{1}{2}$. Yellow. June. Europe. 1818.
 — *repens*. $\frac{1}{2}$. Red. June. Switzerland. 1826.
 — *Rhodola*. Yellow. June. Britain.
 — *roseum*. Rose. July. Caucasus. 1827.
 — *rubens*. $\frac{1}{2}$. Pinkish, white. South Europe. 1870.
 — *rupestre*. $\frac{1}{2}$. Yellow. June. England.
 — *saxatile*. $\frac{1}{2}$. June. South Europe. 1820. Sibth. Fl. Gr. t. 450.
 — *selskianum*. Yellow. Siberia. 1862.
 — *sempervivum*. $\frac{1}{2}$. Deep purple. July. Iberia. 1825.
 — *septangulare*. $\frac{1}{2}$. Yellow. July. 1795.
 — *sextangulare*. $\frac{1}{2}$. Yellow. July. England. Eng. Bot. ed. 3. t. 533.
 — *sexfidum*. $\frac{1}{2}$. White. July. Caucasus. 1816.
 — *Sieboldii variegatum*. Japan. 1860.
 — *spathulatum*. $\frac{1}{2}$. White. July. Hungary. 1815. Biennial.
 — *spectabile*. Purplish. Japan. Syn., *S. Fariatia*.
 — *spurium*. $\frac{1}{2}$. White. August. Caucasus. 1816.
 — *spilodens*. $\frac{1}{2}$. Rosy-purple. Caucasus. 1875.
 — *stenopetalum*. Golden. June. N. America. 1826.
 — *subclavatum*. $\frac{1}{2}$. July. N. America. 1829.

- S. stella*. $\frac{1}{2}$. Pink. July. South Europe. 1840. Sibth. Fl. Gr. t. 446.
 — *telophium*. 2. Purple. August. Britain. Varieties are:—*affine*, *ardrenense*, *Bordei*, *Brunfelsii*, *Jullianum*, *lugdunense*, *occidentale*, *pycnanthum*, *rhodanense*, and *rubellum*.
 — *telophioides*. 1. Purple. August. N. America. 1810.
 — *ternatum*. $\frac{1}{2}$. White. July. N. America. 1789. B. M. t. 1977.
 — *tetraphyllum*. White. July. Levant. Biennial. Sibth. Fl. Gr. t. 448.
 — *verticillatum*. 1. Pink. August. South Europe.
 — *villosum*. $\frac{1}{2}$. Pink. June. Britain.
 — *virens*. $\frac{1}{2}$. Yellow. June. Portugal. 1774.
 — *virescens*. 1. Green, yellow. July. 1815.

HARDY EVERGREENS.

- S. nudum*. $\frac{1}{2}$. White. July. Madeira. 1777.
 — *Sieboldii*. $\frac{1}{2}$. Blue. July. Japan.
 — *teretifolium*. $\frac{1}{2}$. White. England.
 — *viridulum*. $\frac{1}{2}$. Yellow. June. Europe. 1824.

GREENHOUSE.

- S. californicum*. $\frac{1}{2}$. Yellow. California. 1875.
 — *chrætaetum*. 1. Yellowish-white. Mexico. 1865.
 — *formosum*. $\frac{1}{2}$. Bright yellow. Summer. Formosa. 1885. Annual.
 — *Liebmannianum*. $\frac{1}{2}$. White. June. Mexico. 1880.
 — *missurum*. Green. July. Mexico. 1837.
 — *retusum*. White, rosy. June. Mexico. 1880.
 — *spathulifolium*. Yellow. California. 1873.

Seed-Room. All that has been said relative to the *Fruit-room* is applicable to this. Everything liable to cause 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.

Seemannia. (Named after *Bert-hold Seemann*, a botanist and traveller. Nat. ord., *Gesneraceæ*; Tribe, *Gesnerceæ*. Allied to *Achimenes* and *Isoloma*.)

Stove perennial herbs. For cultivation, see *GESNERA*.

- S. Benaryi*. See *S. silvatica*.
 — *silvatica*. 3-4. Bright scarlet. Winter. Peru. 1875. Syn., *S. Benaryi*, Gd. t. 814, and *S. ternifolia*, Gd. t. 126.
 — *ternifolia*. See *S. silvatica*.

Selagine'lla. (A diminutive of *Selago*. Nat. ord., *Lycopodiaceæ*.)

Stove and greenhouse evergreens, some resembling mosses. See *LYCOPodium*, from which some of the following species are taken.

- S. africana*. $1\frac{1}{2}$. W. Africa.
 — *amœna*. Mexico.
 — *apua*. N. America.
 — *atroviride*. 1. E. Indies.
 — *bellula*. See *S. perelegans*.
 — *brasiliensis*. $\frac{1}{2}$. Brazil.
 — *caule scens*. E. Indies.
 — *graecilis*. India. 1880.
 — *cognata*. Pacific Islands.
 — *conferta*. 1. Borneo. 1860.
 — *convoluta*. $\frac{1}{2}$. Brazil.
 — *cuspidata*. $\frac{1}{2}$. Central America.
 — *elongata*. 1. Colombia.
 — *delicatissima*. Andes?

- S. denticula* ta. $\frac{1}{2}$. Europe.
 — *erythropus*. Tropical America.
 — *filičina*. Colombia.
 — *stabella* ta. Indian Archipelago.
 — *flagellifera*. Fiji Islands.
 — *Galleo* thii. Mexico.
 — *gracilis*. South Sea Islands.
 — *gracilis*. Borneo. G. C. 1832, xviii. p. 40, figs. 7, 8.
 — *Griffithii*. Java. 1860.
 — *helvética*. Europe. 1860.
 — *hortensia*. $\frac{1}{2}$. Sicily.
 — *inæqualifolia*. 2. E. Indies. *S. perelegans* is a variety of this.
 — *increscentifolia*. Colombia.
 — *involvens*. Japan. 1868. There is a white variegated variety.
 — *Krassiana au'rea*. Leaves yellow. 1878.
 — *lævigata*. 2. E. Indies.
 — *lepidophylla*. Mexico. 1869.
 — *Lo'bbii*. Borneo.
 — *longissima*. New Grenada. 1881.
 — *ludoviciana*. Louisiana.
 — *Lya* thii. A form of *S. lævigata*.
 — *Marle* nsii. Mexico.
 — *molliceps*. Upper Guinea. Syn., *S. rubricaulis*.
 — *perelegans*. Ceylon. 1879. Syn., *S. bellula* of some gardens. This is a variety of *S. inæqualifolia*.
 — *Pervi* lli. Madagascar.
 — *Pœppigia* na. S. America.
 — *Poulleri*. Azores. 1868.
 — *pubes* cens. E. Indies.
 — *ri'gida*. S. America.
 — *rubella*. Stem and leaves reddish-brown. 1871.
 — *rubricau* lis. See *S. molliceps*.
 — *se* rpens. W. Indies.
 — *spinulo* sa. Europe.
 — *sulca* ta. Brazil.
 — *uncinata*. China. Blue-tinted.
 — *Victo* ria. Polynesia. 1878. Very elegant.
 — *virida* ngula. Polynesia. 1884.
 — *viticulo* sa. Columbia and Central America.
 — *Voge* lli. West Africa. Syn., *S. africana*.
 — *Walki* chii. Penang. 1860.
 — *Wüdeno* vii. Cochín China.

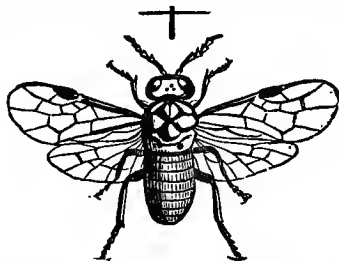
Se'lago. (From the Celtic *sel*, sight, and *jach*, salutary; supposed effects on the eyes. Nat. ord., *Selaginaceæ*.)

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. angustifolia*. August. 1819.
 — *bractea* ta. $1\frac{1}{2}$. Purple. June. 1812. Now known as MICRODON LUCIDA.
 — *canes* cens. $1\frac{1}{2}$. Pale purple. September. 1812.
 — *orymbos* sa. 2. White. July. 1899.
 — *dentata*. $1\frac{1}{2}$. White. July. 1823.
 — *diffu* sa. $1\frac{1}{2}$. Purple. July. 1807.
 — *distans*. 2. White. April. 1845.
 — *fasciula* ta. $1\frac{1}{2}$. Blue. July. 1774. Jacq. Ic. t. 496; B. R. t. 184.
 — *frutes* sa. Yellow. June. 1822.
 — *Gil* lli. 1. Pale rose. March. 1829. B. M. t. 3028.
 — *heterophy* lla. 1. Purple. July. 1823.
 — *hi* spida. Yellow. June. 1823. Syn., *Dischisma capitatum*.
 — *micra* nthæ. Yellow. May. 1820.
 — *minuti* ssima. Yellow. June. 1816.
 — *ovata*. 1. Dark purple. 1774. B. M. t. 186. Now known as MICRODON OVATA.

- S. polygaloi* des. $\frac{1}{2}$. Purple. August. 1807. Now known as MICRODON CYLINDRICA.
 — *polysta* chya. White. June. 1823.
 — *ramulo* sa. $1\frac{1}{2}$. White. 1824.
 — *ragunculoi* des. 2. Violet. 1824.
 — *rotundifolia*. 1. Purple. June. 1816.
 — *spica* ta. $\frac{1}{2}$. Purple. August. 1824. A synonym of *Microdon ovata*.
 — *spi* nea. 3. Purple. 1824.
 — *spu* ria. 1. Violet. August. 1779. B. C. t. 391.

Sela'ndria a'tra. Pear Saw-Fly. The upper surface of Pear-tree leaves during the months of July, August, and September, are liable to be destroyed by what is very characteristically named the *slimy grub*. These grubs are nearly half an inch long, cylindrical, but thicker towards the head than at the other extremity. The whole body, except at the time of skin-casting, is covered with a sticky, greenish-black matter, and from this they have been named. Whilst feeding, the fore part of the body is so swollen that the vermin looks somewhat like a small tadpole. If the slimy matter is removed from the body, this is found to be a grub or caterpillar with twenty feet, and of a pitchy-brown colour. At the



last-but-one casting of its skin the sliminess no longer appears, and the grubs become of a clayey colour. They finally form a brown cocoon about October, and remain in the pupa state until the following June or July, when the perfect insect comes forth in the form depicted in the annexed cut, but of the size shown by the cross lines above it. It is known as the *Sela'ndria a'tra*. Linnæus calls it the Cherry Saw-Fly (*Tenthredo cerasi*), from the mistaken opinion that it attacked the leaves of that tree only, whereas its grubs are more frequently found on the leaves of the Pear. This fly is shining black, and the tips of the legs yellowish. The female lays her eggs on the upper surface of the leaves. The slime on the grub is of a peculiar nature, not being dried by exposure to the hottest sunshine.

Sele'nia. (Perhaps from *selene*, the

moon. Nat. ord., *Cruciferae*; Tribe, *Alyssineae*.)

Hardy annual, with showy, sweet-scented flowers.

S. aurea. ♀. Golden-yellow. June. Texas and Arkansas. 1881. B. M. t. 6607.

Selenipe'dium. (From *selenis*, a little crescent, and *pedion*, a slipper; the shape of the labellum. Nat. ord., *Orchideae*; Tribe, *Cypripediceae*.)

This genus only differs from *CYPRIPEDIUM* in having a three-celled ovary, whereas in *CYPRIPEDIUM* the ovary is one-celled. In all other respects the two genera are identical.

S. Ainswo'rthii. Whitish or yellowish-green, purple, sulphur. 1878. Hybrid between *S. Sedeni* and *S. Roezlii*.

— *albo-purpureum*. Pinkish, crimson, ivory-white. Syn., *Cypripedium albo-purpureum*. Hybrid between *S. Dominicanum* and *S. Schlimii*.

— *Boissieria num.* Yellow, bright green, brownish-crimson. 1887.

— *calurum*. Pale green, rose. 1884. Syn., *Cypripedium calurum*. Hybrid between *S. longifolium* and *S. Sedeni*.

— *cardinale*. Whitish, green. December. Hybrid between *S. Sedeni* and *S. Schlimii*, var. *albiflorum*.

— *caricinum*. 1. Pale green, white, brown. Peru. Syns., *S. Pearcei*, Fl. Ser. t. 1648. and *Cypripedium caricinum*, B. M. t. 5466.

— *caudatum*. 2. Green. March. Quito. 1851. Fl. Ser. t. 566. Syn., *Cypripedium caudatum*.

— *Albertia num.* Sepals yellow; lip yellowish, dark purple. Lind. t. 174.

— *roseum*. Green, yellow, rosy-purple. Ill. Hort. t. 596.

— *chlorops*. Garden hybrid. 1888. Syn., *Cypripedium chlorops*.

— *conchiferum*. White, greenish-yellow, brownish-crimson. Hybrid between *S. caricinum* and *S. Roezlii*.

— *Dominia num.* Yellowish-green, reddish-brown, dark purple. Flor. Mag. t. 499. Syn., *Cypripedium Dominicanum*.

— *grande*. Pale yellow, crimson, greenish-yellow. Petals more than a foot long. Hybrid between *S. caudatum* and *S. Roezlii*.

— *Hincksia num.* Pale and dark green. Darien. 1878. Syn., *Cypripedium Hincksianum*.

— *kaieteurum*. See *S. Lindleyanum*.

— *leucorrhodon*. White, purple, sulphur. 1885. Hybrid between *S. Roezlii* and *S. Schlimii*, var. *albiflorum*.

— *Lindeni*. 1. White, green, reddish-purple. May. New Grenada. 1850. Syn., *Uropedium Lindeni*. Belg. Hort. 1854, p. 193.

— *Lindleya num.* Pale green, reddish-brown, crimson. Kaieteur Fall, British Guiana. 1885. Syn., *S. kaieteurum*.

— *longifolium*. Yellowish-green, purple, brownish. Central America. 1869. Syns., *Cypripedium longifolium*, B. M. t. 5970, and *C. Reichenbachianum*.

— *coloratum*. Purplish. Costa Rica. 1873.

— *nitidissimum*. Garden hybrid. Syn., *Cypripedium nitidissimum*.

— *Parishii*. Yellowish, green, maroon; lip bronzy-red. 1885.

— *Pearcei*. See *S. caricinum*.

— *porphyreum*. Purplish. 1878. Hybrid between *S. Roezlii* and *S. Schlimii*.

— *reticulatum*. White with green veins. Ecuador. 1885.

S. Roezlii. 3. Greenish-yellow, purple. Columbia. 1873. Syn., *Cypripedium Roezlii*. B. M. t. 6217.

— *Saundersianum*. White, purple, green; lip bright reddish-mauve. 1888. Hybrid between *S. caudatum* and *S. Schlimii*.

— *Schlimii*. White, crimson-spotted. New Grenada. 1867. Syn., *Cypripedium Schlimii*. B. M. t. 5614.

— *albiflorum*. White. Columbia. 1875.

— *Schroderae*. Reddish-green, purplish, dull crimson. Hybrid between *S. caudatum* and *S. Sedeni*.

— *splendens*. A brightly coloured variety. 1887. Lind. ser. 2, t. 69.

— *Sedeni*. Greenish-white, purplish-crimson, rich crimson. Syn., *Cypripedium Sedeni*. Flor. Mag. ser. 2, tt. 206, 302. Hybrid between *S. longifolium* and *S. Schlimii*.

— *caudatum*. White with rosy margins; lip purple. Hybrid between *S. longifolium* and *S. Schlimii*, var. *albiflorum*.

— *stenophyllum*. Rose, green, purple. 1876. Hybrid between *S. Schlimii* and *S. caricinum*.

— *vittatum*. 1-1½. Pale green, red, brownish. Brazil. 1876.

— *Wallisii*. Pale green, white, yellow. Ecuador. Syn., *Cypripedium Wallisii*, Rehb. Xen. t. 181.

— *Weidlichia num.* Hybrid between *S. Hartwegii* and *S. Schlimii*. G. C. 1890, viii. p. 702.

Self. A flower with petals of only one colour.

Self-heal. *Prunella vulgaris*.

Selliguea. (Probably from the Javanese name. Nat. ord., *Filices*.)

Stove, yellow-spored ferns. See *FERNS*.

S. caudifolmis. Malay Archipelago. 1862.

— *flavescens*. May. E. Ind.

— *Hamiltoni*. May. Nepal.

— *heterocarpa*. June. Java.

— *macrophylla*. May. Java.

— *potrifolia*. May. Nepal.

Semecarpus. Marking Nut-tree. (From *semeion*, a mark, and *karpos*, fruit; the black juice used for marking clothes. Nat. ord., *Anacardiaceae*; Tribe, *Anacardiaceae*. 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. Anacardium. 20. India. 1820. Wight Ic. t. 559. Syns., *Anacardium longifolium* and *Cassivium longifolium*.

— *cuneifolium*. 20. India. 1824. Syn., *S. cuneifolium*.

Semeiandra. (From *semeia*, a banner, and *aner*, a male; referring to the petal-like appendage to each stamen. Nat. ord., *Onagraceae*.)

A greenhouse shrub, allied to *Fuchsia*, like which it may be cultivated.

S. grandiflora. 5. Scarlet. March, and throughout the summer. Mexico. 1853. B. M. t. 4727.

Sempervivum. Houseleek. (From *sempervivo*, to live for ever; tenacity of life. Nat. ord., *Crassulaceae*.)

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.

- S. andromalium*. $\frac{1}{2}$. Mauve-purple. June. Syn., *S. pauciflorum*.
 — *arachnoidum*. $\frac{1}{2}$. Purple. July. Italy. 1699. B. M. t. 68.
 — — — *ma'jus*. $\frac{1}{2}$. Red. June. Italy.
 — — — *mi'nus*. $\frac{1}{2}$. Red. June. Italy.
 — *arenarium*. $\frac{1}{2}$. Yellow. Tyrol. 1879. Syn., *S. cornutum*.
 — *arvense*. $\frac{1}{2}$. Pink. France.
 — *ass'mile*. $\frac{1}{2}$. Pale rose. July. Tyrol. 1879.
 — *atlanticum*. $\frac{1}{2}$. Pale red. Greater Atlas. 1873. Syn., *S. tectorum*, var. *atlanticum*.
 — *barbatulum*. $\frac{1}{2}$. Pale red. Tyrol.
 — *Botssieri*. $\frac{1}{2}$. Red. July. 1878.
 — *Boutignyanum*. $\frac{1}{2}$. Pale rose. Pyrenees. 1873.
 — *Braunii*. $\frac{1}{2}$. Yellow. July. Tyrol. 1874.
 — *calceatium*. $\frac{1}{2}$. Reddish-white. 1874.
 — *calceareum*. $\frac{1}{2}$. Pale red. France. Syn., *S. californicum*.
 — *Doelliana*. $\frac{1}{2}$. Red. Alps.
 — *Fauconneti*. $\frac{1}{2}$. Red. Jura. 1879.
 — *fibriaria*. $\frac{1}{2}$. Red. July. France.
 — *flagelliforme*. $\frac{1}{2}$. Reddish. July. Siberia. 1823.
 — *Fu'neckii*. $\frac{1}{2}$. Red-purple. S. Europe.
 — *glau'cum*. $\frac{1}{2}$. Red. Alps.
 — *globiferum*. $\frac{1}{2}$. Yellow. June. Germany. 1733. B. M. t. 507 and t. 2115.
 — *grandiflorum*. $\frac{1}{2}$. Yellow. 1880.
 — *Gree'nii*. $\frac{1}{2}$. Red. Europe. 1877.
 — *hirtum*. $\frac{1}{2}$. Yellow. June. Central Europe. 1804.
 — *Lamo'tetii*. 1. Pale pink. Summer. Central France.
 — *Moggr'dgei*. $\frac{1}{2}$. Red. September. Alps. 1881. B. M. t. 6610.
 — *montanum*. $\frac{1}{2}$. Red. June. Pyrenees. 1752.
 — *oligotrichum*. $\frac{1}{2}$. Red. Tyrol. 1879.
 — *pa'rvulum*. $\frac{1}{2}$. Pale red. France. 1878.
 — *pa'tens*. Yellowish. Europe.
 — — — *Heuffelii*. Yellowish. Europe. 1878.
 — *Pitto'ni*. $\frac{1}{2}$. Yellow. July. Styrian Alps. 1879.
 — *Pome'tii*. $\frac{1}{2}$. Rose-red. July. France.
 — *pu'milum*. $\frac{1}{2}$. Pale red. June. Caucasus. 1824.
 — *Regi'nae Amal'iae*. $\frac{1}{2}$. Pale yellow. Greece.
 — *ruthenicum*. $\frac{1}{2}$ to 1. Yellow. S. E. Europe. 1835.
 — *Scho'ttii*. $\frac{1}{2}$. Purple. Tyrol. 1874.
 — *soboliferum*. $\frac{1}{2}$. Yellow. Austria. 1699. B. M. t. 1457.
 — *tectorum*. 1. Purplish. July. Britain. Eng. Bot. ed. 3, t. 538.
 — *tri'ste*. $\frac{1}{2}$. Red. 1879.
 — *Verlot'ti*. $\frac{1}{2}$. Rose. France.
 — *Wulfe'ni*. $\frac{1}{2}$. Yellow. Alps. 1879.

GREENHOUSE HERBACEOUS.

- S. dichotomum*. Yellow. July. Canaries. 1815. Biennial.
 — *dodrantale*. $\frac{1}{2}$. Flesh. July. Teneriffe. 1815. Annual.
 — *micranthes*. $\frac{1}{2}$. Green, red. September. Canaries.
 — *stellatum*. $\frac{1}{2}$. Yellow. July. Madeira. 1790. Annual.

GREENHOUSE EVERGREENS.

- S. aizoides*. Yellow. June. Madeira.
 — *arbo'reum*. 9. Golden. July. Levant. 1640.

- S. arbo'reum variegatum*. 4. Yellow. July. Levant. 1640.
 — *av'reum*. 1. Yellow. July. Canaries. 1815.
 — — — *spu'rium*. 1. Yellow. July. Canaries. 1820.
 — *barbatum*. 1. Yellow. July. Canaries. 1815.
 — *bifidum*. 2. Madeira.
 — *caespitosum*. $\frac{1}{2}$. Yellow. August. Madeira. 1815.
 — *canariense*. $1\frac{1}{2}$. White. June. Canaries. 1699.
 — *ciliatum*. $1\frac{1}{2}$. Pale yellow. Teneriffe. 1815.
 — *crue'ntum*. 2. Yellow. May. Canaries. 1834.
 — *frutescens*. 3. Yellow. Teneriffe. 1804.
 — *glandulosum*. 1. Yellow. April. Madeira. 1777.
 — *glutinosum*. $1\frac{1}{2}$. Yellow. July. Madeira. 1777.
 — *holochrysum*. Golden-yellow. Winter. Teneriffe. 1816.
 — *Pa'ivae*. Green. Canaries. 1866. B. M. t. 5593.
 — *polyphyllum*. $\frac{1}{2}$. Red. August. Canaries. 1777.
 — *retu'sum*. 2. Yellow. July. Teneriffe. 1824.
 — *rupi'fraga*. Yellow. May. Canaries. 1830.
 — *Smit'thii*. 1. Pale yellow. July. Teneriffe. 1815. B. M. t. 1980.
 — *tabuleformis*. $1\frac{1}{2}$. Yellow. July. Madeira. 1817.
 — *tortuosum*. $\frac{1}{2}$. Yellow. July. Canaries. 1779. B. M. t. 296.
 — *ur'bicum*. 2. Yellow. July. Teneriffe. 1816. B. R. t. 741.
 — *uviferum*. Yellow. Teneriffe. 1829. Uva de Guanches.
 — *villo'sum*. $\frac{1}{2}$. Yellow. June. Canaries. 1777. B. R. t. 1553.
 — *Youngiana*. 3. Yellow. June. Canaries. 1842. Syn., *Aeonium Youngianum*. B. R. 1844, t. 35.

Sena'cia glau'ca. A synonym of *Elæodendron pedunculatum*.

Seneci'llus. (A diminutive of *senecio*. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*.) A synonym of **Senecio**.

S. purpurata is a synonym of *Cineraria purpurata*.

Senec'io. Groundsel. (From *senex*, an old man; naked receptacle compared to a bald head. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*.)

So difficult are the species to determine, that they have often been classed under numerous other genera. 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 *el'egans* 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.

HARDY ANNUALS, ETC.

- S. acornitifolia*. Pinkish-red. Amur. 1877. Syn., *Syneilesis acornitifolia*. Gfl. t. 987.
 — *ampullacea*. 2. Texas. 1834. B. M. t. 3487.

- S. argentea*. Pyrenees. 1873.
 — *crassifolius*. 1½. Purple. July. South Europe. 1815. Sibth. Fl. Gr. t. 868.
 — *divaricatus*. 1½. Purple. July. China. 1801. Greenhouse biennial.
 — *Dorria*. Yellow. S. Europe.
 — *Doronicum*. 1. Yellow. S. Europe.
 — — *hosmarieensis*. ½. Yellow. May. Morocco. 1874. B. M. t. 6101.
 — *erubescens*. 2. Purple. July. Cape of Good Hope. 1774. Greenhouse biennial.
 — *gallicus*. June. France.
 — *Hedgeoni*. Yellow. Japan. 1846.
 — *japonicus*. 3. Yellow. Japan. 1866. Syns., *Erythrochaete palmatifida*.
 — *Kœmpferi*. Yellow. Japan. Syns., *S. Farfugium* and *Ligularia Kœmpferi*.
 — — *auréo-maculata*. Leaves spotted with yellow. Syn., *Farfugium grande*.
 — — *cristata*. Leaves crisped and covered with curly hairs. Japan. 1861.
 — *lanuginosus*. 5. November. 1826.
 — *telephifolius*. 1. July. Cape of Good Hope. 1820.
 — *valerianæfolius*. 4. July. Europe. 1800.

HARDY EVERGREEN.

- S. gibbosus*. June. Sicily. 1827.

GREENHOUSE EVERGREENS.

- S. Adenotrichia*. 2. Yellow. May. Chili. 1826. Syn., *Adenotrichia amplexicaulis*. B. R. t. 1190.
 — *antexophorbium*. Yellowish. Cape July, West Africa. 1870. B. M. t. 6099. Syn., *Kleinia antexophorbium*.
 — *argutus*. 3. July. Mexico. 1827.
 — *asper*. 3. July. Cape of Good Hope. 1774.
 — *chordifolia*. 1. Yellow. S. Africa. 1862. B. M. t. 6216.
 — *cinerarioides*. July. Mexico. 1826.
 — *concolor*, of gardens, is *S. speciosus*.
 — *elegans*. 2. Purple. July. Cape of Good Hope. 1700. B. M. t. 238.
 — — *floræ-æthiops*. 1½. White. July. Cape of Good Hope. 1700.
 — — *plenus-æthiops*. 1½. White. July. Cape of Good Hope. 1700.
 — — *plenus-ruber*. 2. Red. July. Cape of Good Hope. 1700.
 — — *pomponicus cupreus*. Garden variety. 1888.
 — *Farrisi*. 2. Yellow. Peru. 1869.
 — *fulgens*. Scarlet. Natal. 1866. Greenhouse. Syn., *Kleinia fulgens*. B. M. t. 6590.
 — *hæmatophyllus*. 2. April. 1789.
 — *hakimifolius*. 3. July. Cape of Good Hope. 1723.
 — *Heritieri cyanophthalmus*. Whitish-blue. June. Canaries. 1843. Herbaceous. B. M. t. 3827. Syn., *Cineraria aurita*.
 — *ilicifolius*. 3. June. Cape of Good Hope. 1731.
 — *lanceus*. 3. August. Cape of Good Hope. 1731.
 — *lilacinus*. 6. Lilac. June. Cape of Good Hope. 1826. B. R. t. 1342.
 — *longifolius*. 3. September. Cape of Good Hope. 1775.
 — *macrotylosus*. Climber. Yellow. Natal. 1868. B. M. t. 6149.
 — *mikanioides*. Yellow. December. Cape of Good Hope. 1855. Syn., *Mikania senecioides*.
 — *multibractea*. Magenta. S. Africa. 1872. Ref. Bot. t. 251.
 — *Palmeri*. Yellow. Guadeloupe Island, Lower California. Wien. Gart. Zeit. 1890, p. 120, fig. 24.
 — *persicæfolius*. 3. Purple. July. Cape of Good Hope. 1820.

- S. peucedanifolius*. 3. Purple. May. Cape of Good Hope. 1816.
 — *præcox*. 2½. Yellow. B. M. t. 4308.
 — *psuedo-Chi-na*. ½. July. E. Ind. 1732. Herbaceous. Andr. Rep. t. 291.
 — *pteronæura*. 4 to 8. Whitish. Morocco. 1872. B. M. t. 5945. Syn., *Kleinia pteronæura*.
 — *pubigerus*. 2. Red. June. Cape of Good Hope. 1816.
 — *puicher*. 1 to 4. Purple, yellow. Uruguay. 1872. Annual. B. M. t. 5959.
 — *purpureus*. 2. Purple. August. Cape of Good Hope. 1774. Herbaceous.
 — *pyramidalis*. Yellow. S. Africa. 1863. B. M. t. 6396.
 — *reclinatus*. 2. Purple. July. Cape of Good Hope. 1774.
 — *rigescens*. 3. July. Cape of Good Hope. 1815.
 — *rigidus*. 3. July. Cape of Good Hope. 1704.
 — *rosmarinifolius*. 3. July. Cape of Good Hope. Jacq. Ic. t. 587.
 — *scaber*. 4. July. Cape of Good Hope. 1700. Herbaceous.
 — *Skinneri*. 3. Yellow. June. Guatemala. 1840. Syn., *Gynoxys fragrans*. B. M. t. 4611. Climber.
 — *solidagineus*. 2. July. Cape of Good Hope. 1824.
 — *sonchifolia*. 1. Yellow. E. Indies.
 — *speciosus*. ½. Scarlet. July. China. 1789. Herbaceous. B. R. t. 41; B. C. t. 1113.
 — *subscandens*. Yellow. Winter. Tropical Africa. 1878. B. M. t. 6363.
 — *tussilaginifolia*. 1. Purple. April. Teneriffe. 1829. B. R. t. 1550.
 — *venustus*. 1½. Purple. August. Cape of Good Hope. 1774. B. R. t. 901.
 — *volubilis*. 6. Orange, purple. April. South Africa. 1814. Syn., *Cacalia scandens*. Twiner.

HARDY HERBACEOUS.

- S. adonidifolius*. 1. July. Europe. 1800.
 — *alpinus*. 2. July. South Europe. 1683.
 — *arachnoïdes*. July. Italy. 1827.
 — *balsamifera*. June. N. Amer. 1819.
 — *canadensis*. 1½. July. N. Amer. 1820.
 — *cordifolius*. 2. July. Austria. 1749.
 — *coriæus*. 4. July. Levant. 1728.
 — *croaticus*. 4. July. Hungary. 1805.
 — *croceus*. June. Austria. 1822.
 — *crucifolius*. Purple. April. Teneriffe. B. R. 1839, t. 7.
 — *decipiens*. May. Cape of Good Hope. 1821.
 — *delphinifolius*. 1. July. Barbary. 1800.
 — *eudorus*. July. 1815.
 — *frigidus*. May. N. America. 1827.
 — *japonicus*. 1. August. Japan. 1774.
 — *Layopus*. ½. Bright yellow. Summer. New Zealand. 1882.
 — *leucophyllus*. 1. July. South Europe. 1816.
 — *lyratifolius*. 2. July. Austria. 1749.
 — *microphyllus*. 4. July. Caucasus. 1818.
 — *nemorænsis*. 3. July. Austria. 1785.
 — *odora*. 3. S. Australia.
 — *othnæ*. 2. Pink. July. Iberia. 1816.
 — *ovatus*. 3. September. Germany. 1823.
 — *pratensis*. June. Galicia. 1828.
 — *Smithii*. Pink. July. Cape Horn. 1801.
 — *stenocéphala comoësa*. 2. Yellow. Summer. Japan. 1881. G. C. 1881, xvi. p. 300, figs. 55, 56.
 — *taraxacifolius*. June. Caucasus. 1824.
 — *Tournefortii*. 3. July. Pyrenees. 1810.
 — *umbrosus*. 2. July. Hungary. 1816.
 — *uniifolius*. ½. July. Alpine Europe. 1789.

Sensitive Fern. *Oncle'a sensibilis*.

Sensitive Plant. *Mimosa pudica*. There are several other plants which give evidence of being sensitive. The Venus Fly-Trap (*Dionaea muscipula*) 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 these parts than the sides of the leaves spring up, and, locking their rows of prickles together, squeeze the insects to death. *Oxalis sensitiva* and *Smitthia sensitiva* are similarly irritable, as are the filaments of the stamens of the Berberry. One of this sensitive tribe, *Desmodium gyrans*, 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 (*Apocynum androsæmifolium*), they close with a power usually sufficient to detain the intruder until death occurs.

Septas. (From *septem*, seven; the number prevailing in the parts of the flower. Nat. ord., *Crassulaceæ*.) A synonym of **Crassula**.

Greenhouse, white-flowered evergreens, from South Africa. Increased by division of the roots; plants kept dry in winter; sandy loam and brick-rubbish. Winter temp., 38° to 45°.

S. cape'nsis. See *Crassula Septas*.
— *globiflora*. B. M. t. 1472. See *Crassula globiflora*.
— *umbellata*. A synonym of *Crassula umbellata*.

Sequoia. Native name. (Nat. ord., *Coniferæ*; Tribe, *Taxodiæ*. Syns., *Washingtonia* and *Wellingtonia*.)

Hardy evergreen. For cultivation, see **TAXODIUM**, to which it is allied.

S. gigantea. 300. California. 1853. Syn., *Wellingtonia gigantea*. B. M. tt. 4777-8.
— *au'rea*. Young twigs yellowish.
— *pendula*. Branches pendulous. 1871.
— *sempervirens*. 300. Upper California. Syn., *S. pyramidata*. Californian Evergreen Redwood.
— *albo-spica*. Tips of young shoots creamy-white.
— *glauca*. Leaves tinged with glaucous blue.
— *taxifolia*. Leaves broader than in the type and glaucous.
— *variegata*. Leaves glaucous and slightly variegated. 1890.

Seraphyta. (From *ser*, a silk-worm, and *phyton*, a plant; the flowers are said to resemble silkworms. Nat. ord., *Orchidææ*; Tribe, *Epidendraceæ-Læviææ*.)

Stove, epiphytal orchid, requiring the same culture as **EPIDENDRUM**.

S. diffusa. 2. Greenish-white. April. West Indies. 1816. Syn., *Epidendrum diffusum*. B. M. t. 3565.

Serapias. (An ancient Greek name for some *Orchis*. Nat. ord., *Orchidææ*; Tribe, *Ophrydææ-Serapieææ*.)

Hardy terrestrial orchids. For cultivation, see **ORCHIS**, to which it is allied.

S. cordigera. 2. Lilac, purple. Mediterranean region. B. M. t. 5868A.
— *lingua*. 2. Lilac, red. Mediterranean region. B. M. t. 5868B.
— *elongata*. 2. Brown-purple. April. Sicily. 1878.
— *tuteola*. Purplish, yellowish. May. Sicily. 1876.
— *longipetala*. 1½. Purple, greenish. May. Sicily. 1876.
— *pallidiflora*. 1. May. Sicily. 1876.
— *papilionacea-lingua*. 1. Green, purple. S. France. 1876. A natural hybrid between *Orchis papilionacea* and *S. lingua*. B. M. t. 6255.

Serenoa. (In honour of the late *Sereno Watson*, a distinguished North American botanist. Nat. ord., *Palmææ*; Tribe, *Corypheææ*.)

An elegant, dwarf, greenhouse palm.

S. serrulata. 4-8. Greenish. June. Southern United States. 1840. Syn., *Sabal serrulata*.

Sericocarpus. White-topped Aster. (From *serikos*, silken, and *karpus*, fruit; the fruit is crowned by silky hairs. Nat. ord., *Compositææ*; Tribe, *Asteroidææ*.)

Hardy, perennial herbs, requiring the same culture as **ASTER**.

S. comysoides. 2. White. Summer. North America. 1778.
— *solidagineus*. 2. White. Autumn. North America. 1699. Syn., *Aster solidagineus*.

Sericographis. (From *serikos*, silk, and *grapho*, to write. Nat. ord., *Acanthaceææ*; Tribe, *Justicieææ*. Allied to *Aphelandra*.) A synonym of **Jacobinia**.

Stove half-herbaceous perennial. Easily increased by cuttings. For culture, see **JUSTICIA**.

S. Ghiesbreghtiana. Gf. t. 98. See *Jacobinia Ghiesbreghtiana*.
— *Mohrntlii*. Scarlet. Mexico. 1881. A climber.

Seringia. (Named after *M. Seringa*, a Swiss botanist. Nat. ord., *Sterculiaceææ*; Tribe, *Lasiopetaleææ*. Allied to *Lasiopetalum*.)

Greenhouse evergreen. Cuttings of young shoots in sand, under a bell-glass, in April or May; sandy peat one part, sandy, fibry loam two parts. Winter temp., 40° to 48°.

S. ovata. A synonym of *Ptelidium ovatum*. (Nat. ord., *Celastrineææ*.)
— *platyphyllo*. 12. White. June. Australia. 1822.

Seriola. (From *seris*, succory; as the species resemble this plant. Nat. ord., *Compositææ*; Tribe, *Cichoriaceææ*.) This genus is now united to **Hypochæris** under the specific names annexed.

All hardy herbaceous plants, except *rube'scens*, which is annual, and all natives of Sicily. Seed sown in early spring, in any common garden-soil.

S. ætne'nsis, Sibth. Fl. Gr. t. 815, and *S. d'albicans* are synonyms of *Hypochoeris ætne'nsis*.
1. Yellow. July. Sicily. 1763.

— *glau'ca* and *S. rube'scens* are synonyms of *Hypochoeris lævigata*. 1. Yellow. May. Sicily. 1828.

— *u'rens* is a synonym of *Hypochoeris cretensis*.
‡. Yellow. July. South Europe. 1773.

Seri'ssa. (Name of a plant mentioned by Dioscorides. Nat. ord., *Rubiaceæ*; Tribe, *Anthospermeæ*.)

Greenhouse, white-flowered evergreens, from Japan. Cuttings in spring, under a glass; loam, peat, and sand. Probably hardy in the south of England.

S. fœ'tida. 2. May. 1787. Syns., *Lycium fœtidum* and *L. japonicum*, B. M. t. 361.
— *mu'tiptex*. May.

Serra'tula. Saw-wort. (From *serra*, a saw; edges of the leaves. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*.)

Perennials, by seeds and divisions in spring; annuals, by seed; common garden-soil. All purple-flowered, except where otherwise stated.

S. ala'ta. 2. Purple. July.

— *alpi'na*. See *Saussurea alpina*.

— *ama'ra*. See *Saussurea amara*.

— *angustifo'lia*. See *Saussurea angustifolia*.

— *argu'ta*. See *S. tinctoria*.

— *ca'spica*. See *Karelinia caspica*.

— *centauroi'des*. 1. Purple. July. Siberia. 1804.

— *corona'ta*. 5. Purple. July. Siberia. 1739.

— *cyano'i'des*. A synonym of *Jurinea Pollichii*.

— *cyano'ro'i'des*. 3. July. Pyrenees. 1640.

Syn., *Rhaponticum cynaroides*.

— *depre'ssa*. 1. Purple. July. Caucasus.

1818. Linn. Trans. xi. t. 38.

— *di'scolor*. See *Saussurea discolor*.

— *e'legans*. Linn. Trans. xi. t. 37. See *Liatris elegans*.

— *flav'e'scens*. White. July. Spain. 1825.

Syn., *S. leucantha*. Annual.

— *heterophy'lia*. 2. Purple. July. Dauphiny.

1824. Syn., *S. Kitaibelii*.

— *Kitaibe'lii*. See *S. heterophylla*.

— *leuca'ntha*. See *S. flavescens*.

— *liatro'i'des*. See *Saussurea pycnocephala*.

— *linearifo'lia*. A synonym of *Jurinea linearifolia*.

— *multifo'ra*. 2. July. Siberia. 1816. A synonym of *Jurinea linearifolia*.

— *ni'tens*. See *Centaurea nitens*.

— *ni'tida*. 2. Purple. July. Siberia. 1837.

— *panno'nica*. See *Cnicus pannonicus*.

— *pilo'sa*. See *Liatris pilosa*.

— *pulche'ra*. B. M. t. 2589. See *Saussurea pulchella*.

— *pygma'ea*. See *Saussurea pygmaea*.

— *quinquefo'lia*. 3. Deep purple. July. Caucasus. 1804. B. M. t. 1871.

— *radia'ta*. 2‡. Purple. July. Hungary.

1800. Biennial.

— *sa'lsa*. See *Saussurea crassifolia*.

— *si'mplex*. B. M. t. 2482. A synonym of *Jurinea mollis*.

— *spica'ta*. Andr. Rep. t. 401. See *Liatris spicata*.

— *transylva'nica*. A synonym of *Jurinea mollis*.

Serru'ria. (Named after J. Serrurier, a German botanist. Nat. ord., *Proteaceæ*; Tribe, *Protea*. 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, fibry 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. 4. Pink. 1803. Syn., *Protea abrotanifolia*. Andr. Rep. t. 522. This name has been used for other species, which will be found in this list.

— *acroca'rpa*. Lilac. April. 1822.

— *adse'ndens*. 2. 1819.

— *œ'mula*. 3. 1803.

— *arena'ria*. 1. 1803.

— *Burma'nsis*. 2‡. 1786.

— *clia'ta*. 2. 1803.

— *conge'sta*. 2. Pink, white. July. 1800. Syn., *Protea triternata*. Andr. Rep. t. 337.

— *cyano'i'des*. 1‡. 1803.

— *decu'mbens*. 1. 1818.

— *diffu'sa*. 3. 1810.

— *eleva'ta*. Lilac. April. 1821.

— *elonga'ta*. 1‡. 1800.

— *emargina'ta*. 2. Pink. 1800. Syn., *Protea abrotanifolia*, var. *minor*. Andr. Rep. t. 536.

— *flagella'ris*. 2. 1816.

— *flo'rida*. 2. 1824.

— *glabe'rriima*. 1. 1825.

— *glomerata*. 3. 1789.

— *Nive'i'ni*. 1‡. 1800. Syn., *Protea decumbens*. Andr. Rep. t. 349.

— *odora'ta*. 2. Pink. 1803. Syn., *Protea abrotanifolia*, var. *odorata*. Andr. Rep. t. 545.

— *peduncula'ta*. 7. July. 1789. Syn., *Protea glomerata*. Andr. Rep. t. 264.

— *phytico'i'des*. 3. 1789. Syn., *Protea abrotanifolia*. Andr. Rep. t. 507.

— *pinna'ta*. 1. Pink. 1803. Syn., *Protea pinnata*. Andr. Rep. t. 512.

— *Rozbu'rgii*. 3. White. 1806.

— *rubricau'lis*. 2. 1818.

— *scario'sa*. Lilac. 1816.

— *squarro'sa*. 2. 1810.

— *triterna'ta*. 7. July. 1802. Syn., *Protea argentiflora*. Andr. Rep. t. 447.

— *villo'sa*. 2. July. 1829.

Service Berry. *Amela'nchier vulgari's*.

Service. (*Py'rus dome'stica*.) 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.

Sesba'nia. (From *sesban*, the Arabic name of *S. ægyptia'ca*. Nat. ord., *Leguminosæ*; Tribe, *Galegææ*. Alliance near *Clianthus*.)

Yellow-flowered, except *S. coccinea*. 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; fibry loam and sandy peat. Winter temp., 60°; summer, 60° to 90°, with abundance of moisture.

STOVE EVERGREENS.

- S. ægyptiaca*. 4. July. Egypt. 1680. Wight, Ic. t. 32.
 — *coccinea*. 25. Red. August. East Indies. 1768. Syn., *Agati coccinea*.
 — *longifolia*. 3. July. New Spain. 1820. Syn., *Daubentonia longifolia*.
 — *occidentalis*. 4. July. W. Ind. 1816.

STOVE ANNUALS.

- S. aculeata*. 4. July. E. Ind. 1690.
 — *affinis*. 3. July. E. Ind. 1800.
 — *gracilis*. 3. July. 1820.
 — *pectata*. 6. July. W. Ind. 1823. Biennial. B. R. t. 873.
 — *punctata*. 3. July. Guinea. 1825.
 — *sericea*. 3. July. E. Ind. 1818.

GREENHOUSE ANNUAL.

- S. disperma*. 2. July. Florida. 1816. Syn., *Glottidium floridanum*.

Se'seli. Meadow Saxifrage. (A name used by Hippocrates. Nat. ord., *Umbelliferae*.)

Hardy herbaceous plants. Ordinary garden-soil. Propagated by seeds.

- S. dichotomum*. 2. White. July. Tauria. 1818. Perennial. B. M. t. 2073.
 — *gummi ferum*. 4. White. Summer. Tauria. 1804. Biennial. B. M. t. 2259.

Sesle'ria. (In honour of *Leonard Sesler*, an Italian botanist. Nat. ord., *Gramineæ*; Tribe, *Phalarideæ*.)

Hardy, perennial grass.

- S. cœrulea*. $\frac{1}{2}$ -1 $\frac{1}{2}$. Blue-grey. May. Britain.

Sesu'vium. (Derivation doubtful. Nat. ord., *Ficoideæ*.)

Greenhouse, succulent herbs or sub-shrubs. Sandy soil, well drained. Cuttings inserted in sand, under a bell-glass.

- S. Portulacastrum*. Green, reddish. June. 1692. Syn., *Aizoon canariense*. Andr. Rep. t. 201. Sea Purslane; West Indian Samphire.
 — — *sessile*. Flowers sessile.
 — *revolutifolium*. Red, white. July. Cuba. Syn., *S. Portulacastrum*, var. *revolutum*. B. M. t. 1701.

Seta'ria. (From *seta*, a bristle; referring to the bristles on the spikelets. Nat. ord., *Gramineæ*; Tribe, *Panicææ*.)

Hardy, annual grasses, of no horticultural value.

- S. italica*. A garden form of this has been called *Panicum italicum*, var., *japonicum*. Gf., 1887, p. 278, fig. 72.
 — *verticillata* has become naturalized in the south-east of England.
 — *viridis*. 1. Green. July. Britain.

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. *Helleborus foetidus*.

Setting is fertilizing the female blossoms with pollen from the male blossoms. A plant is said to be a *shy setter* when this fertilizing is apt to fail.

Set Wall. *Valeria'na*.

Severi'nia. (After *M. A. Severino*, Lecturer on Anatomy at Naples in the sixteenth century. Nat. ord., *Rutaceæ*; Tribe, *Aurantiaceæ*.)

Greenhouse evergreen shrub. For culture, see CITRUS.

- S. buxifolia*. 3. White. May. China. Syn., *Citrus buxifolia*.

Seville Orange. *Citrus vulgaria*.

Sewerzo'wia. (After a Russian traveller, who discovered this plant. Nat. ord., *Leguminosæ*. Allied to *Astragalus*.)

- Hardy annual. Ordinary garden-soil. Seeds. *S. turkestanica*. $\frac{1}{2}$. Summer. Turkestan. 1883. Gf., 1883, p. 250.

Seyme'ria. (Named after *H. Seymour*, an English naturalist. Nat. ord., *Scrophulariaceæ*; Tribe, *Gerardiæ*.)

Hardy, yellow-flowered annuals, from North America. Seeds in April, in a peat border.

- S. pectinata*. 1. July. 1820.
 — *tenuifolia*. 1. July. 1730. Syn., *Gerardia Afzelii*.

Seymou'ria. (In compliment to the *Hon. Mrs. Seymour*, of Woburn. Nat. ord., *Geraniaceæ*; Tribe, *Geraniææ*.) A synonym of **Pelargonium**.
S. asarifolia. Swt. Geran. t. 206. See *Pelargonium asarifolium*.

Shaddock. *Citrus decumana*.

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**. *Allium ascalonicum*.

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. *Aster Tripo'lium*.

Sharp Cedar. *Aca'cia oxyc'e drus* and *Juni'perus oxyc'e drus*.

Shears are made of various forms, according to the use to which they are to be put. Straight ones are of service in clipping or pruning branches, which are too thick to be cut with a pruning knife. Some are made with long handles, to which the blades are attached nearly at right angles, to enable a man to cut the edge of a lawn without stooping; these are occasionally made with a wheel to run along the ground.

Sheep Laurel. *Ka'lmia angustifolia*.

Sheep's Scabious. *Jasio'ne*.

Shells. See **Animal Matters**.

Shelter. See **Screen**.

She - Oak. *Casuarina quadrivalvis*.

Shepherd's Beard. *Arno'pogon*.

Shepherd's Club. *Verba'scum thap'sus*.

Shepherd's Knot. *Potentilla Tormentilla*.

Shepherd's Purse. *Capse'lla bursa-pastoris*.

Shepherdia. (Named after the late W. Shepherd, curator of the Botanic Garden, Liverpool. Nat. ord., *Elæagnaceæ*. 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. argentea. 10. April. 1820. Syn., *Hippophaë argentea*.

— *canadensis*. 10. April. 1759. Syn., *Hippophaë canadensis*.

Shield Fern. *Aspi'dium*.

Shifting. See **Potting** and **One-shift System**.

Shortia. (After Dr. Short, author of the "Medicina Britannica," published in London, 1747. Nat. ord., *Diapensiaceæ*.)

Hardy perennial.

S. californica of Rev. Hort. 1883, p. 41, fig. 7, appears to be some Composite.

S. galacifolia. White. February to April Alleghany Mountains. 1888. Gard. and For. 1888, i., p. 509, fig. 80. Syn., *Schizodon uniflorus*.

Shreds for fastening trees to walls, etc., 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 twelve or fifteen feet, unless they are climbers, and having, if permitted, branches and foliage clothing the entire length of their stems.

Shrubby Pink. *Dia'nthus fruticosus*.

Shute'ria. (Named after Dr. Shuter, of Madras. Nat. ord., *Convolvulaceæ*.) See **Hewittia**.

S. bicolor. B. R. t. 318. A synonym of *Hewittia bicolor*.

Shutting-up is closing the lights of frames, pits, greenhouses, and stoves, which have been opened for the admission of air.

Siba'ldia. (Named after Dr. Sibbald, of Edinburgh. Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*.) A synonym of **Potentilla**.

Seeds, but chiefly by division of the plant in spring; fibry, sandy loam, and fibry peat. They are best kept as little alpiners, in pots, protected from frost and wet in winter, and shaded from the midday sun in summer.

S. erecta. See *Chamaerhodos erecta*.
— *grandiflora*. See *Chamaerhodos grandiflora*.
— *otopetalata*, *parviflora*, and *procumbens* are synonyms of *Potentilla Sibbaldia*.

Siberian Crab. *Pyrus prunifolia*.

Siberian Pea-tree. *Caragana*.

Sibthorpia. (Named after Dr. Sibthorp, of Oxford. Nat. ord., *Scrophulariaceae*; Tribe, *Digitaleae*.)

Yellow-flowered trailers. Seeds and divisions of the plant in spring; moist, sandy, shady peat-border. *Prostrata* requires the protection of a greenhouse in winter.

S. europaea. $\frac{1}{2}$. July. England.
— *variegata*. Leaves variegated.
— *peregrina*. $\frac{1}{2}$. Yellow. June. Madeira.
1771. Syns., *S. prostrata* and *Disandra prostrata*. B. M. t. 218. Sometimes regarded as a variety of *S. europaea*.

Sicana. (The Peruvian name of one species. Nat. ord., *Cucurbitaceae*.)

Vigorous growing stove climbers.

S. odorifera. Yellow. Brazil. 1889. Fruit like a large cucumber.
— *sphaerica*. Yellowish. Jamaica. 1890. B. M. t. 7109. Fruit globular, about the size of an orange.

Si'cyos. (A name used by Theophrastus for the Cucumber. Nat. ord., *Cucurbitaceae*.)

Greenhouse, or half-hardy annual.

S. edulis. A synonym of *Sechium edule*.

Sida. Indian Mallow. (A name used by Theophrastus for the Water Lily. Nat. ord., *Malvaceae*.)

This genus being widely dispersed through the world, contains stove, greenhouse, and hardy herbs or shrubs. They require a rich soil. Seeds; cuttings.

S. aurora. Yellow. India. B. C. t. 1842.
— *aurita*. Reddish. December. Java. 1821. B. M. t. 2495. Stove.
— *Bedfordiana*. B. M. t. 3892. See *Abutilon Bedfordianum*.
— *cristata*. B. M. t. 330. See *Anoda Dilleniana*.
— *globiflora*. 5. White. November. Mauritius. 1827. B. M. t. 2821.
— *graveolens*. B. M. t. 4134. See *Abutilon graveolens*.
— *hastata*. B. M. t. 1541. See *Anoda hastata*.
— *inequalis*. 7. White. May. Brazil. 1829. Stove shrub. B. M. t. 3436.
— *integerrima*. 16. Yellow, red. New Grenada. B. M. t. 4360. Stove.
— *malvaeflora*. B. R. t. 1036. See *Sidalcea campestris*.
— *molle*. B. M. t. 2759. A synonym of *Abutilon molle*.
— *na'paea*. 4-10. White. Summer. North America. Hardy perennial. B. M. t. 2193.
— *paoniaeflora*. B. M. t. 4170. See *Abutilon paoniiflorum*.
— *patens*. Yellow. Abyssinia. Andr. Rep. t. 571.
— *periptera*. B. M. t. 1644. A synonym of *Anoda punicea*

S. picta. B. M. t. 3840. A synonym of *Abutilon pictum*.

— *pulchella*. B. M. t. 2753. See *Plagianthus pulchellus*.

— *rosea*. See *S. speciosa*.

— *sessiliflora*. 3. Yellow. Autumn. South America. 1827. Stove sub-shrub. B. M. t. 2357.

— *speciosa*. Purplish-red. October. South America. 1820. Syn., *S. rosea*. B. M. t. 3150.

— *venosa*. B. M. t. 4463. See *Abutilon venosum*.

— *vitifolia*. B. M. t. 4227. A synonym of *Abutilon vitifolium*.

Sida'icea. (From *sida*, an ancient Greek name of a plant, and *alcea*, an ancient name of some *Malva*. Nat. ord., *Malvaceae*; Tribe, *Malveae*. Allied to *Callirhoe*.)

Hardy, mostly perennial herbs. For cultivation, see MALVA.

S. campestris. 3. Very pale pink. October. New Albion, Columbia. 1827. Syn., *Sida malvaeflora* of B. R. t. 1036.

— *ca'ndida*. 3. White. Rocky Mountains. 1882. Rev. Hort. 1891, p. 356, fig. 85.

Sideran'thus. (From *sideres*, starry, and *anthos*, flower. Nat. ord., *Compositae*; Tribe, *Asteroideae*.) A synonym of **Haplopappus**.

S. spinulosus. A synonym of *Haplopappus spinulosus*.

— *villo'sa*. A synonym of *Chrysopsis villosa*.

Sideri'tis. Ironwort. (From *sideros*, iron; supposed power of healing wounds by iron. Nat. ord., *Labiatae*; Tribe, *Stachydeae*. 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. 1. July. Italy. 1740. Annual.

— *serra'ta*. 1. August. Spain. 1818.

— *spino'sa*. 1 $\frac{1}{2}$. August. Spain.

HARDY EVERGREENS.

S. scordio'des. 1. September. France. 1597.

— *alpi'na*. 1. July. Pyrenees. 1827. Kn. and West. t. 31.

— *angustifo'lia*. 1. July. Pyrenees. 1597.

— *elonga'ta*. August. Spain. 1822. Half-hardy.

— *tau'rica*. 1 $\frac{1}{2}$. July. Tauria. 1822.

HALF-HARDY EVERGREENS.

S. angustifo'lia. 1. July. Spain. 1820.

— *chamaedri'fo'lia*. 1. July. Spain. 1816.

— *itico'fo'lia*. 1 $\frac{1}{2}$. July. Levant.

— *inea'na*. 1 $\frac{1}{2}$. July. Spain. 1752.

— *leuca'ntha*. 1. White. July. Spain. 1823.

— *perfolia'ta*. 2. September. Levant. 1731.

— *syri'aca*. 1 $\frac{1}{2}$. July. Levant. 1597.

GREENHOUSE SHRUBS.

S. canarie'nsis. Yellow. Canary Isles. 1869.

Ref. Bot. t. 160.

— *ca'ndicans*. 3. Yellowish. Teneriffe. 1714.

EXCLUDED SPECIES.

S. decu'mbens. See *Stachys Lamarckii*.

— *hyssopifo'lia*. See *Stachys recta*.

— *linearifo'lia*. See *Stachys stenophylla*.

Siderode'ndron. Iron-tree. (From *sideros*, iron, and *dendron*, a tree; in hardness of wood. Nat. ord., *Rubia-*

ceæ; Tribe, *Ixoreæ*.) A synonym of **Ixora**.

Stove evergreen tree. Cuttings of ripe shoots in sand, under a bell-glass, and in a moist heat; sandy, fibry loam, fibry peat, and leaf-mould. Winter temp. 50° to 60°; summer, 60° to 80°.

S. triflorum. 20. Pink. W. Indies. 1793. Now known as *IXORA FERREA*.

Sideroxylon. (From *sideros*, iron, and *xylon*, wood; the wood of certain species is very hard. Nat. ord., *Sapotaceæ*.)

S. melanophloeos. Jacq. H. Vind. t. 71. See *Myrsine melanophloeos*.

— *mitis*. B. M. t. 1858. White. June. South Africa. 1816. Greenhouse evergreen. This is probably a species of *ILEX*.

— *spinulosum*. See *Argania Sideroxylon*.

Side-saddle Flower. *Sarracenia*.

Siebera. (In honour of F. W. Sieber, a botanical traveller, 1785-1844. Nat. ord., *Umbelliferae*; Tribe, *Hydrocotyleæ*.)

Greenhouse, perennial herb. For culture, see *TRACHYMENE*.

S. Billardieri lanceolata. 3. White. Australia. 1829. Syn., *Trachymene lanceolata*. B. M. t. 3534.

Siegesbeckia. (Named after J. G. Siegesbeck, a German botanist. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*. Alliance near *Eclipta*.)

Hardy, yellow-flowered annuals. 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. cordifolia*, *S. ibérica*, and *S. triangulāris* are sometimes regarded as varieties of *S. orientālis*. *S. cordifolia*. 20. August. Mexico. 1826.

— *droseroides*. See *S. orientālis*.

— *ibérica*. White. August. Iberia. 1818.

— *orientālis*. 2. September. India. 1730. Syn., *S. droseroides*. B. R. t. 1061; Swt. Fl. Gard. t. 203.

— *triangulāris*. 2. August. Mexico. 1825.

Sieve'sia. (Named after M. Sievers, a Russian botanist. Nat. ord., *Rosaceæ*; Tribe, *Potentillææ*.) Now united to **Geum**, under the specific names annexed.

Hardy, yellow-flowered, herbaceous perennials. Seeds, and division of the plant in spring; light, sandy soil.

S. anemonoides. ½. July. Kamtschatka. 1820.

GEUM ANEMONOIDES.

— *atlantica*. See *Geum allanticum*.

— *glacialis*. ½. July. Siberia. 1819. GEUM

GLACIALE.

— *montana*. ½. July. Austria. 1597. GEUM

MONTANUM.

— *paradoxa*. See *Falugia paradoxa*.

— *peckei*. B. M. t. 2863. See *Geum Peckei*.

— *reptans*. ½. July. Switzerland. 1597.

GEUM REPTANS.

— *rosea* and *triflora*. ½. July. Louisiana. 1826.

GEUM TRIFLORUM.

Sieves are made with various meshes,

according to the use for which they are

intended, such as cleaning seeds, sifting

soils, gravel, etc.

Sigmatostalex. (From *sigma*, S-shaped, and *stalex*, a stake. Nat. ord., *Orchideæ*; Tribe, *Vandææ-Oncidiææ*.)

Stove orchids. For culture, see *ONCIDIUM*.

S. malleifera. Yellow, with brown spots. New Grenada. 1883.

— *radicans*. Yellow, greenish, violet-purple. Brazil.

Silene. Catchfly. (From *sialon*, saliva; from the gummy secretion on the leaves of some, which entraps small flies. Nat. ord., *Caryophyllaceæ*; Tribe, *Sileneæ*.)

All propagated 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. crassifolia. 1. Brown. July. Cape of Good Hope. 1774.

— *gigantea*. 3. White. June. N. Africa. 1738. Sibth. Fl. Gr. t. 432.

— *ornata*. 2. Purple. July. Cape of Good Hope. 1775. B. M. t. 382.

— *undulata*. 1½. Red. August. Cape of Good Hope. 1775.

HALF-HARDY HERBACEOUS.

S. acutis. ½. Rose. July. Britain. Eng. Bot. ed. 3, t. 205.

— *alba*. ½. White. July. Britain.

— *excopta*. ½. Red. July. Switzerland. 1819.

— *foemina*. Red. July. Scotland.

— *ma's*. Rose. July. Scotland.

— *fabaria*. ½. White. July. Sicily. 1731. Sibth. Fl. Gr. t. 415.

— *fruticosā*. 1½. Pink. June. Sicily. 1629. Evergreen. Sibth. Fl. Gr. t. 428.

— *Mocimiana*. 1. Purple. June. Mexico. 1827.

— *speciosa*. 1. Scarlet. June. 1343. Paxt. Mag. x. p. 219.

HARDY ANNUALS, ETC.

S. ægyptiaca. 1. Pink. July. Egypt. 1800.

— *Armeria*. 1½. Pink. August. England. Eng. Bot. ed. 3, t. 204. Sweet William.

— *alba*. White.

— *ascendens*. ½. Red. June. Spain. 1822.

— *atotonilco*. ½. Pink. June. Levant. 1781. Jacq. Vind. iii. t. 32.

— *bicolor*. 1. Striped. June. France. 1820.

— *canariensis*. ½. Red. June. Madeira. 1822.

— *cerastoides*. ½. White. July. South Europe. 1732. Sibth. Fl. Gr. t. 412.

— *cheiranthifolia*. 1. Red. July. Swan River. 1821.

— *colorata*. 1. Purple. June. Morocco. 1819.

— *compacta*. 1½. Pink. August. Caucasus. 1823. Biennial. B. C. t. 1638.

— *congesta*. 1. Pink. June. Greece. 1818.

— *cretica*. ½. Green, white. July. Crete. 1732. Biennial. Sibth. Fl. Gr. t. 422.

— *Cserei*. 3. White. June. 1821.

— *cylandriflora*. 1. Red. June. Levant. 1824. Biennial.

— *diescol*. ½. Red. April. Greece. 1817. Sibth. Fl. Gr. t. 410.

— *diversifolia*. 1. Purple. June. 1820.

— *elegans*. 1½. White. June. Portugal. 1819.

— *gemmiflora*. 1. Purple. June. 1816.

— *gracilis*. 1. White. July. 1823.

— *hispidā*. 1. Cream. June. Barbary. 1817.

— *ibérica*. 1. White. June. Iberia. 1823.

- S. imbricat*a. 1½. White. June. N. Africa. 1818.
- *ita*'lica. 1½. White. May. Italy. 1759. Biennial. Sibth. Fl. Gr. t. 429.
- *juvena*'tis. 2. White. June. 1835.
- *la*'cera. 1½. White. July. Caucasus. 1818. Biennial. B. M. t. 2255.
- *lazifo*'ra. 1. White. June. Spain. 1820.
- *linifo*'lia. 1. Green, yellow. July. Portugal. 1817. Sibth. Fl. Gr. t. 433.
- *longica*'tis. 1. Red. June. Spain. 1818.
- *lusita*'nica. 1. Pink. June. Portugal. 1732.
- *multifo*'ra. 1. White. June. Hungary. 1794. Biennial.
- *nemora*'tis. 1. White. June. Hungary. 1816. Biennial.
- *noctifo*'ra. 2. Pink. July. England. Eng. Bot. ed. 3, t. 209.
- *noctu*'ra. 2. Brown. July. South Europe. 1683. Sibth. Fl. Gr. t. 408.
- *nycta*'ntha. 1½. Brown. July. 1815.
- *Oliveria*'na. Red. July. Aleppo. 1818.
- *orchid*'ea. Rose. June. Levant. 1781. Sibth. Fl. Gr. t. 427.
- *pe*'ndula. 1. Red. June. Sicily. 1731. B. M. t.
- *perfolia*'ta. 1½. Red. June. Levant. 1817. Biennial.
- *pi*'cta. 2. Pink. July. France. 1817. Swt. Fl. Gard. t. 92.
- *port*'ensis. 1. Pink. July. Portugal. 1759.
- *Psamma*'tis. 1½. Cream. June. 1818. Biennial.
- *pumi*'lio. ½. Pink. June. Germany. 1823.
- *quinque-vu*'lnera. 1. Blood. July. England.
- *ramo*'sa. 1. White. July. Barbary. 1820.
- *rumosi*'ssima. 1½. Rose. June. Candia. Biennial.
- *reticul*'ata. 1. Rose. July. Barbary. 1804.
- *rube*'lla. ½. Flesh. May. Portugal. 1735. Sibth. Fl. Gr. t. 426.
- *sabuleto*'rum. 1. Purple. June. 1818.
- *secundifo*'ra. 1. Purple. June. Spain. 1820.
- *seri*'cea. 1½. Pink. July. South Europe. 1801.
- *spathula*'ta. ½. Purple. June. Caucasus. 1823. Biennial.
- *stri*'cta. 1½. Purple. June. Spain. 1802.
- *tenufo*'lia. 1. Purple. June. Dahuria. 1820.
- *trident*'ata. ¾. Pink. May. Barbary. 1823.
- *undulato*'lia. Red. June. Sardinia. 1829.
- *vespert*'na. 2. Rose. July. Brittany. 1796. B. M. t. 677.
- *visco*'sa. 2. White. June. Levant. 1731. Biennial.
- *viscosi*'ssima. 1. June. Naples. 1824.
- HARDY HERBACEOUS.
- S. alta*'ica. 1. Yellowish. August. Altai. 1831.
- *ama*'na. 1. White. July. Tartary. 1779.
- *angustifo*'lia. 1. White. July. Europe. 1817.
- *apri*'ca. Russia. 1837.
- *caespito*'sa. ¾. Pink. June. Caucasus. 1822. Linn. Trans. xi. t. 35.
- *campanu*'la. ¾. Green, white. July. Piedmont. 1823.
- *ca*'na. 1½. Red. June. 1824.
- *ca*'spica. ¾. Pink. June. Caucasus. 1823.
- *Catesbe*'a. 1. Pink. June. Carolina. 1810.
- *catho*'lica. 1½. Green, white. August. Italy. 1711.
- *chlorofo*'lia. 1. Lilac, yellow. August. Armenia. 1796. B. M. t. 807.
- *chlora*'ntha. 1½. Green, white. July. Germany. 1732.
- *cilia*'ta. ¾. Purple. June. Crete. 1804.
- *cordifo*'lia. ¾. Pink. June. Piedmont. 1819.
- *co*'rsica. 1. Purple. June. Corsica. 1820.
- *depre*'ssa. ½. White. June. Iberia. 1816.
- *effu*'sa. 1. White, yellow. July. Volga. 1823.
- S. ela*'ta. 3. White. June. Tauria. 1819.
- *Elizabeth*'hae. ½. Magenta. Italy. 1863. Hardy perennial.
- *fimbria*'ta. 2½. White. June. Caucasus. 1803.
- *flavo*'scens. 1. Yellow. June. Hungary. 1804.
- *glaucofo*'lia. ½. Red. June. Spain. 1820.
- *graminifo*'lia. 2. White. June. Altai. 1819.
- *gyss*'ophita. ¾. White. June. 1822.
- *hispa*'nica. ¾. Red. June. Spain. 1819.
- *Hooker*'i. Pink, white. California. 1873.
- *infla*'ta. 1. White. July. Britain.
- — *hirsu*'ta. White. Britain.
- *infra*'cta. White. July. Hungary. 1800. Eng. Bot. ed. 3, t. 199.
- *lacinia*'ta. 1½. Scarlet. July. S. America. 1823. B. R. t. 1444.
- *latifo*'lia. 1. White. July. Barbary. 1817.
- *longifo*'ra. 1½. Lilac, purple. August. Hungary. 1793.
- *marit*'ima. ¾. White. August. Britain. Eng. Bot. ed. 3, t. 200.
- — *flor*'e-pleno. 1. White. August. England.
- *mollis*'sima. 1. Pink. August. Italy. 1739.
- *ocymo*'des. 1. April. 1823.
- *ova*'ta. 1. White. June. N. Amer. 1820.
- *parado*'xa. 1. Pink. July. Europe. Jacq. Vind. iii. t. 84.
- *parvifo*'lia. 1½. Pink. June. 1817.
- *pa*'tula. 1. White. July. Barbary. 1823.
- *pennsylv*'nica. 1. Red. June. N. Amer. 1806. B. R. t. 247.
- *petra*'a. ¾. White. July. Hungary. 1822.
- *pilo*'sa. White. August. Europe. 1739.
- *polyphy*'lla. 1. White. June. Austria. 1800.
- *procu*'mbens. ¾. Pink. June. Siberia. 1823.
- *pub*'scens. 1. Purple. July. Corsica. 1818.
- *pusi*'lla. One-twelfth. A very free flowering plant.
- *quadrident*'ata. ¾. White. June. Alps. 1822.
- *quadrif*'ida. ¾. White. June. Verona. 1818.
- *rete*'sa. 1. Purple. June. South Europe. 1796.
- *regia*'a. 1½. Crimson. June. N. Amer. 1811. B. M. t. 1724.
- *re*'pens. 1. Pink. August. Siberia. 1823.
- *Requie*'ni. ¾. White, red. June. Corsica. 1823.
- *Saxi*'fraga. ¾. Flesh. July. France. 1640. B. C. t. 454.
- *Scha*'fta. ¾. Rose. April. Keridach. 1844. B. R. 1846. t. 20.
- *sibi*'rica. 1½. Rose. July. Siberia. 1773.
- *spergulo*'fo'lia. ¾. White. June. Armenia. 1817.
- *stella*'ta. 1. White. July. N. Amer. 1696.
- *styo*'sa. ¾. Yellowish. July. 1831.
- *supe*'na. ¾. Pink. July. Caucasus. 1804. B. M. t. 1997.
- *tata*'rica. 2. White. July. Russia. 1796.
- *te*'nais. ¾. Cream. July. Siberia. 1816.
- *Valle*'sii. ¾. Flesh. July. Switzerland. 1765.
- *virgi*'nica. 1. Purple. July. N. Amer. 1783.
- *viscagino*'des. ¾. Pink. June. Dauria. 1824.
- *wolge*'nsis. Green, yellow. July. Wolga. 1824.

Sileno'psis. See **Lychnis**.

Silk-cotton Tree. *Bo*'mbax and *Eriode*'ndron.

Silken Sissy. *Ascle*'pias.

Silk Tree. *Albi*'zzia *Julibr*'assin.

Silk Vine. *Periplo*'ca *gra*'ca.

Silk-wood Tree. *Muntingia calabura*.

Silky Oak. *Grevillea robusta*.

Silphium. Rosin-plant. (From *Silphion*, a name used by Hippocrates for a plant producing gum-resin. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)

Hardy, perennial herbs, with a resinous juice. Ordinary garden-soil. Divisions.

S. albidiflorum. 4. Creamy-white. September. Texas. 1887. B. M. t. 6918.

— *laciniatum*. 3-6. Yellow. July. United States. B. M. t. 6534. The leaves of this species are said to face north and south, hence the names Compass Plant, Pilot Weed and Polar Plant.

— *perfoliatum*. 3. Yellow. July. North America. B. M. t. 3354.

— *terebinthinaeum*. 4-10. Yellow. Summer and autumn. North America. B. M. t. 3525.

— *trifoliatum*. 4-6. Yellow. August. North America. B. M. t. 3355.

Silver Bell Tree. *Hale'sia*.

Silver Berry. The fruit of *Elæagnus argentea*.

Silver Bracts. *Cotyledon Pachyphytum*.

Silver Bush. *Anthyllis Barbatervis*.

Silver Cedar. *Juniiperus virginiana*, var. *glauca*.

Silver Fir. *Abies pectinata*.

Silver Rod. *Asphodelus ramosus*.

Silver Tree. *Leucadendron argenteum* and *Elæagnus*.

Silver Weed. *Argyrea* and *Potentilla anserina*.

Silybum. (A name used by Dioscorides. Nat. ord., *Compositæ*; Tribe, *Cynaroideæ*.)

Hardy, perennial herb, found as a garden escape in some parts of Britain. Ordinary garden-soil. Seeds.

S. Marianum. 1-4. Rose-purple. Autumn. South Europe. Eng. Bot. ed. 3, t. 681. Blessed, Holy, or Our Lady's Milk Thistle.

Sima'ba. (Native name. Nat. ord., *Simarubaceæ*; Tribe, *Simarubæ*.)

Stove deciduous tree. Seeds from abroad, and cuttings. The seed is a valuable febrifuge. See QUASSIA.

S. Cedron. 20. May. New Grenada. 1846.

Simaru'ba. (The Guiana name. Nat. ord., *Simarubaceæ*; Tribe, *Simarubæ*. Allied to Quassia.)

Stove, yellowish-white-flowered evergreens, from the West Indies. Cuttings of the ripe shoots in sand, under a bell-glass, and in a strong, moist heat; fibry peat, and light, fibry loam. Winter temp., 55° to 65°; summer, 65° to 85°.

S. amara. 10. 1789. Bent. and Tr. t. 56. Syn., *S. officinalis*. Bitter or Mountain Damson; Stavewood.

S. glauca. 1824.

— *officinalis*. See *S. amara*.

— *Turæ*. Carmine. Porto Rico 1889 Gf. t. 1298.

Sime'this. (After the nymph *Sime'this*. Nat. ord., *Liliaceæ*; Tribe, *Asphodeleæ*.)

Hardy perennial. Compost of heath soil and sand. Division.

S. bicolor. 1. White, purplish. June. Northwest Africa; naturalized in a few localities in Britain. Eng. Bot. ed. 3, t. 1541.

Syn., *S. planifolia*.

— *planifolia*. See *S. bicolor*.

Simmondsia. (In memory of T. W. Simmonds, botanist and explorer. Nat. ord., *Euphorbiaceæ*; Tribe, *Buzaceæ*.)

Hardy evergreen shrub. Cuttings. Rich light loam with a little peat.

S. californica. 4. Green. California. Syn., *Buzus chinensis*.

Sinapis. Mustard. (From the Celtic *nap*, applied to the cabbage tribe. Nat. ord., *Crucifereæ*; Tribe, *Brassicæ*.) Now united with **Brassica**.

Hardy, yellow-flowered annuals. See MUSTARD.

S. alba. A synonym of *Brassica alba*.

— *ni gra*. A synonym of *Brassica nigra*.

Singa'na. (From *singa-singa*, the name in Guiana. A genus of doubtful affinity, which should perhaps be placed in the natural order *Leguminosæ*.)

Stove evergreen climber. Cuttings of firm side-shoots in sand, under a bell-glass, and in bottom-heat in May; sandy loam and fibry peat. Winter temp., 55° to 65°; summer, 60° to 85°.

S. guianensis. White. June. Guiana. 1827.

Singling. Thinning seedlings so that two do not touch each other.

Sinningia. (Named after W. Sinning, a German gardener. Nat. ord., *Gesneraceæ*; Tribe, *Gesnerææ*. Syns., *Biglandularia*, *Ligeria*, *Rosanovia*, and *Tapeinotes*.)

Stove evergreens. For culture, see GESNERA. The species of this genus are often erroneously referred to GLOXINIA.

S. barbatata. 1½. White, red. Summer. Brazil. 1867. Syn., *Tapeinotes Carolina*. B. M. t. 5623.

— *major*. A larger plant. III. Hort. n. s. t. 506.

— *concinna*. Purple, yellowish. Summer and autumn. Brazil. Syns., *Stenogaster concinna*, B. M. t. 5253 and *Stenogaster concinna*, Fl. Ser. t. 1533.

— *multiflora*. Bluish-lilac. III. Hort. 1864, t. 390.

— *conspicua*. 1. Yellow, purple. Brazil. 1868. Syn., *Biglandularia conspicua* and *Rosanovia conspicua*, Gf. t. 712. *Rosanovia ornata*, Fl. Ser. t. 2423, is a hybrid derived from this.

— *guttata*. 1½. Yellow, red. June. Brazil. 1827. B. R. t. 1112.

— *Helle'ri*. 1. White, green. June. Rio Janeiro. 1827. Syn., *S. velutina*, B. M. t. 4212.

- S. hirsuta*. 1. Bluish-lilac. July. Brazil. 1824. Syn., *Gloxinia hirsuta*. B. M. t. 2690.
- *Menzie'sii*. Violet, with red dots. August. Brazil. Syn., *Gloxinia speciosa*, var. *Menzie'sii*. B. M. t. 3943.
- *speciosa*. 1. Violet. September. Brazil. 1815. Syns., *Gloxinia Passinghamii*, Paxt. Mag. xii. p. 267, *G. speciosa*, B. M. t. 1987, and *Ligeria speciosa*. The garden forms of this species are extremely numerous.
- — *albiflora*. White. Syn., *Gloxinia speciosa*, var. *albiflora*. B. M. t. 3206.
- — *caulescens*. A taller plant than the type. 1826. Syn., *Gloxinia caulescens*. B. R. t. 1127.
- — *macrophylla*. Leaves large and with white veins. 1844. Syn., *Gloxinia speciosa*, var. *macrophylla variegata*.
- — *rubra*. Red. Syn., *Gloxinia rubra*. Paxt. Mag. vii. p. 271.
- — *velutina*. 1½. Pale greenish. June. Brazil. 1827. B. C. t. 1898. *S. velutina* of B. M. t. 4212 and B. R. t. 997 is *S. Helleri*.
- *villosa*. 1½. Yellow, green. June. Brazil. 1827. B. R. t. 1184.
- *Youngiana*. 1. Purple. June. Brazil. B. M. t. 4954. A hybrid between *S. speciosa* and *S. velutina*.

Siphocampylus. (From *siphon*, a tube, and *kampylos*, a curve; shape of the flower. Nat. ord., *Campanulaceae*; Tribe, *Lobeliae*.)

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; *bicolor* and *betulaefolius* are hardy in sheltered places.

HARDY.

- S. betulaefolius*. 3. Red, yellow. July. Brazil. 1842. Deciduous. B. M. t. 3973.
- *bicolor*. Swt. Fl. Gard. ser. 2 t. 389. A synonym of *Lobelia laxiflora*, var. *angustifolia*.

GREENHOUSE EVERGREENS.

- S. amœnus*. Fl. Ser. t. 619. See *S. villosulus*.
- *coccineus*. 3. Scarlet. July. Brazil. B. M. t. 4178.
- — *leucostomus*. White. 1850. Fl. Ser. t. 648.
- *crenatifolius*. 2. Scarlet, yellow. Brazil. 1870. Ref. Bot. t. 227.
- *dupserratus*. 2. Red. Brazil. 1847.
- *fimbriatus*. Orange-red. Brazil. 1868.
- *fulgens*. See *S. Humboldtianus*.
- *hamatus*. Violet. Brazil. 1850.
- *Humboldtianus*. Scarlet. Peru. 1867. B. M. t. 5631. Syn., *S. fulgens*.
- *lantaniifolius*. Rose. July. Organ Mountains. 1841. B. M. t. 4105.
- — *glabriusculus*. 3. Purplish-red. April. Caraccas. 1847.
- *longepedunculatus*. 3. Red. January. Organ Mountains. 1841. B. M. t. 4105.
- *villosulus*. 3. Orange, red. June. Brazil. 1832. Syn., *S. amœnus*.

STOVE EVERGREENS.

- S. canus*. See *S. macropodus*.
- *ferrugineus*. Red. New Grenada. Syns., *Lobelia asclepiadea* and *L. ferruginea*.
- *giganteus*. Yellow red. New Grenada. Ic. Pl. t. 716.
- *glandulosus*. 3. Red. July. Bogota. 1845. B. M. t. 4331.
- *guianensis*. Guiana. 1847.
- *Lindleyi*. Scarlet. New Grenada. Lem. Jard. Fl. ii. t. 142.

- S. macropodus*. 3. Purplish-red. June. Brazil. Syn., *S. canus*.
- *manettiaeflorus*. 1. Red, yellow. April. New Grenada. 1848. B. M. t. 4403. Syn. *S. nitidus*.
- *microstoma*. 3. Scarlet. September. New Grenada. 1844. B. M. t. 4286.
- *nitidus*. See *S. manettiaeflorus*.
- *Orbigyanus*. Yellow and scarlet. Valparaiso. 1850. B. M. t. 4713.
- — *elegans*. Bright red. New Grenada. 1849.
- — *catinatus*. Dark violet. New Grenada. 1850.
- *penduliflorus*. Pink. Caraccas. 1553. Fl. Ser. t. 763.
- *reticulatus*. Violet. New Grenada. 1850.
- *scaendens*. Scarlet. Peru. 1847.
- *surinamensis*. A synonym of *Centropogon surinamensis*.
- *tovarensis*. 3. Rose. Autumn. Venezuela. Syn., *Centropogon tovarensis*. Fl. Ser. t. 802.

Siphonandra. (From *siphon*, a tube, and *aner*, a male. Nat. ord., *Rubiaceae*; Tribe, *Chiococceae*.) A synonym of **Chiococca**.

Siphonanthus. (From *siphon*, a tube, and *anthos*, a flower. Nat. ord., *Verbenaceae*; Tribe, *Viticeae*.) A synonym of **Clerodendron**.

Stove evergreen.

S. indica. See *Clerodendron Siphonanthus*.

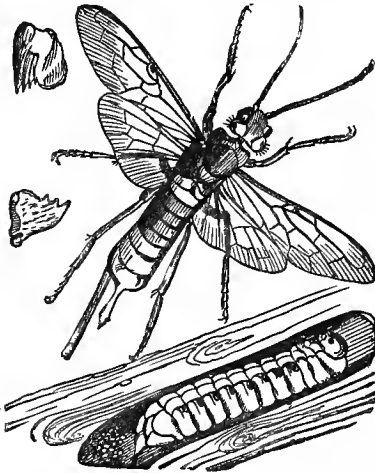
Siphonia. (From *siphon*, a tube, or pipe. Nat. ord., *Euphorbiaceae*; Tribe, *Crotonae*.) A synonym of **Hevea**.

The Brazilian, or Bottle India-rubber is the produce of this shrub. Stove evergreen shrub. Cuttings of ripened shoots, dried at the base, inserted in sand, under a large glass, in bottom-heat; sandy, fibry loam, peat, and leaf-mould. Winter temp., 50° to 60°; summer, 60° to 85°.

S. Cahuchu. 6. Gniانا. 1823. This species and *S. elastica* are forms of **HEVEA GUIANENSIS**.

Sirex gigas. This insect so much resembles the hornet in general appearance as to be very frequently mistaken for it. In the summer months the *Sirex* may sometimes be seen flying briskly among Fir trees, or sitting on their trunks depositing its eggs. It is rather a formidable-looking insect, measuring an inch to an inch and a half in length. The head is black, with two yellow spots behind the eyes; the thorax is black; the abdomen is yellow, with a dark-brown central belt; the long ovipositor—which is often mistaken for a sting, though in this respect the insect is quite harmless—is reddish-brown; the legs and antennae are yellow, and the wings hyaline, with a yellowish tint. The insect deposits its eggs in either living or felled Fir trees. In doing this it elevates its body, and applies its ovipositor to the wood in a manner so as to form nearly a right angle with its body; it bores with the

sheath of its ovipositor to a considerable depth into the wood, and there deposits its eggs. The larva, when full grown, is rather more than an inch long; the head is furnished with strong jaws, and



the tail ends in a short spine. It burrows deep into the wood, forming long galleries, thereby doing considerable damage to the timber. At the termination of one of these galleries it changes to the pupa state, in which condition it sometimes remains for several years before the perfect insect emerges, which at times has to eat its way through a considerable thickness of wood before it can enjoy a free, winged existence. Another species of this genus, which is not uncommon, is *S. juvenis*; this has similar habits to *S. gigas*, from which it is distinguished by its smaller size, steel-blue body, and black antennæ. For the above engraving of *S. gigas*, we are indebted to the publishers of the *Gardeners' Chronicle*.

Sissoo Wood. *Dalbergia Si'ssoo*.

Sisymbrium. (A classical name for some plant. Nat. ord., *Cruciferae*; Tribe, *Sisymbrieæ*.)

Many species, all but on mere weeds. This 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.

S. millefolium. 1½. Yellow. June. Canaries. 1779. Evergreen.

Sisyri'nchium. (From *sys*, a pig, and *rynchos*, a snout; swine grub out the roots for food. Nat. ord., *Irideæ*; Tribe, *Sisyrinchææ*. Syns., *Eriphilema* and *Hydastylus*.)

Herbaceous perennials. Seeds and offsets in spring; sandy loam and leaf-mould.

HARDY.

- S. a'nceps*. B. C. t. 1220. See *S. angustifolium*.
 — *angustifolium*. 1. Blue. June. Eastern United States. 1693. Syns., *S. a'nceps* and *S. mucronatum*.
 — *bermudianum*. 1. Blue. June. Bermuda. Syns., *S. iridioides*, B. M. t. 94, and *S. Nuttallii*.
 — *Cuman'ngii*. 1. Cream. July. N. Amer. 1832.
 — *Douglassii*. Fl. Ser. t. 146. See *S. grandiflorum*.
 — *glaucophyllum*. ¾. Blue. August. N. Amer. 1830.
 — *grandiflorum*. ¾. White. May. N. Amer. 1826. B. M. t. 3509. Syn., *S. Douglasii*. There is a white-flowered variety.
 — *iridioides*. B. M. t. 94. See *S. bermudianum*.
 — *lutescens*. B. C. t. 1870. See *S. striatum*.
 — *mucronatum*. See *S. angustifolium*.
 — *Nuttallii*. See *S. bermudianum*.
 — *striatum*. 2. Yellow. June. Mexico. 1788. Syn., *S. lutescens*.
 — *tenuifolium*. ½. Yellow. May. Mexico. 1816.

HALF-HARDY.

- S. californicum*. ¾. Yellow. July. California. 1796. Syn., *Marica californica*. B. M. t. 983.
 — *chilense*. ¼-1. Purple, yellow. July. Brazil. 1826. B. M. t. 2786. Syn., *S. graminifolium* of some authors.
 — *convolutum*. ¼. Yellow. May. S. Amer. 1816. Red. Lil. t. 47. Syn., *S. luteum*.
 — *filifolium*. ¼. White, reddish-purple. May. Falkland Islands. 1885. B. M. t. 6829.
 — *formosum*. A synonym of *Libertia formosa*.
 — *graminifolium*. ¾. Yellow. April. Chili. 1825. B. R. t. 1067. Syn., *S. majale*. See also *S. chilense*.
 — *ascendens*. ¼. Yellow. October. Chili. Syn., *S. graminifolium*, var. *pumilum*. B. R. t. 1915.
 — *maculatum*. 1. Yellow, with red spots. June. Chili. 1830. Syn. *S. maculatum*. B. M. t. 3197.
 — *pumilum*. See *S. graminifolium*, var. *ascendens*.
 — *hirtellum*. ¾. White. July. N. America 1830.
 — *iridiifolium*. ¼. Yellow. June. Brazil. 1822. B. C. t. 1979. Syns., *S. lazum*, B. M. t. 2312, and *Marica iridifolia*, B. R. t. 646.
 — *juveum*. ¾. Lilac. June. Chili. 1832. Kn. and West. t. 95.
 — *lazum*. See *S. iridifolium*.
 — *longistylum*. Fl. Ser. t. 255. See *Solenomelus chilensis*.
 — *luteum*. See *S. convolutum*.
 — *macrocephalum*. 1½. Yellowish. July.
 — *maculatum*. See *S. graminifolium*, var. *maculatum*.
 — *majale*. See *S. graminifolium*.
 — *micranthum*. ¾. Yellow. June. Mexico and Brazil. 1815. B. M. t. 2116.
 — *odoratissimum*. B. R. t. 1283. See *Solenomelus biflorus*.
 — *palmifolium*. Red. Lil. t. 352. A synonym of *Eleutherine plicata*.
 — *pedunculatum*. B. M. t. 2965. See *Solenomelus chilensis*.
 — *plicatum*. A synonym of *Eleutherine plicata*.
 — *speciosum*. 1. Blue. June. Chili. 1836. B. M. t. 3544. Now known as CALYDorea speciosa.
 — *versicolor*. See *Libertia tricolor*.

Sitolo'bium. (From *sitos*, wheat, and *lobos*, a lobe; shape of the lobes of the fronds. Nat. ord., *Filices*.) A synonym of **Dicksonia**.

Stove, brown-spored ferns. See FERNS.

- S. adiantoi* des. See *Dicksonia adiantoides*.
 — *cuneatum*. May. Isle of Luzon.
 — *davallioi* des. See *Dicksonia davallioides*.
 — *dissectum*. See *Dicksonia dissecta*.
 — *sta'cidum*. See *Dicksonia faecida*.
 — *glutinolum*. See *Dicksonia glutinosa*.
 — *malucca'num*. Malay Archipelago.
 — *pilosu'sculum*. See *Dicksonia pilosiuscula*.
 — *punctilobum*. See *Dicksonia punctiloba*.
 — *rubiginosum*. See *Dicksonia rubiginosa*.

Sitones. A genus of weevils distinguished principally by their short, flat beak, which does considerable damage to various leguminous plants, especially to peas and clover. *Sitones lineatus* is about one-sixth of an inch long, of an ochraceous colour, with three whitish longitudinal stripes on the back, alternating with dotted stripes; the antennæ are reddish. It feeds greedily upon pea leaves, sometimes devouring almost the entire leaf. The maggots, which are white with brownish heads, are to be found on the roots of seedling peas. It is important to have the soil sufficiently rich to render the seedlings strong, as they are then better able to resist the attacks of these maggots. These insects also attack clover, and some of the weevils are known to hibernate in hollow corn stubble. Little is at present known as to the way of preventing their attack, but well rolling the ground has been found to diminish their numbers.

Sitones crinitus, the Spotted Pea Weevil, is smaller than *S. lineatus*, grey or rosy, and with black spots on the wing cases.

Si'um. (From *sin*, the Celtic for water. Nat. ord., *Umbelliferae*; Tribe, *Ammineæ*.)

All weeds, except the following. See SKIRRET.
S. sissarum. 1. White. August. China. 1548.

Skim'mia. (From *Skimmi*, the Japanese name. Nat. ord., *Rutaceæ*; Tribe, *Toddaliceæ*.)

Hardy evergreen shrubs, with shining leaves. Propagated from cuttings, and cultivated like the hardy evergreen *Daphnes*.

- S. Forema'nni*. Garden hybrid. 1888.
 — *fra'grans*. 3. White. April. Japan? 1880.
 Rev. Hort. 1880, p. 56.
 — *fragrantissima*. See *S. oblata*.
 — *interme'dia*. White, rosy. Spring. 1870.
 — *japo'nica*. 3. White. March. Japan. 1845.
 B. M. t. 4719. Syn., *Ilex Skimmia*.
 — *argenteo-variegata*. Japan. 1875.
 — *laureola*. 4. Pale yellow. Spring. Nepal.
 Syn., *Limonia laureola*.
 — *oblata*. Scarlet berries. Japan. 1864. Syn., *S. fragrantissima*, which is the male form.

- S. oblata Veitchii*. 3. Dirty white. Spring 1880. Rev. Hort. 1880, p. 57.
 — *ovata*. Probably a garden form of *S. japonica*.
 — *rubella*. Greenish-white; buds red. China. 1874. Rev. Hort. 1880, p. 57.

Skinne'ra. (In honour of an Oxford botanist named *Skinner*, who flourished at the end of the eighteenth century. Nat. ord., *Onagraceæ*.) A synonym of **Fuchsia**.

S. excocticata. A synonym of *Fuchsia excocticata*.

Skinne'ria. (Named after *Captain Skinner*, a botanist. Nat. ord., *Convolvulaceæ*.) Now united with **Ipomæa**.

Stove herbaceous. Seeds in a hotbed, in spring; and cuttings of the young shoots in spring, in sandy, light soil, and in a sweet bottom-heat; rich, light fibry loam, and a little peat. Winter temp., 53° to 60°; summer, 60° to 85°.

- S. cæspitosa*. Yellow. May. E. Ind. 1827.
 Now known as *IPOMŒA LINIFOLIA*.

Skirret or Skirwort. (*Sivum sissarum*.) Sow at the end of March, or early in April, in drills a quarter of an inch deep, and twelve inches apart. Thin the plants to twelve 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. *Symplocar'pus foetidus*.

Slevo'gtia. (After *J. Hadrian Slevogt*, 1653-1725, Professor of Anatomy at Jena. Nat. ord., *Gentianeæ*.)

Stove biennials. Sow in a hotbed in spring, or at the end of summer, and keep in a stove during winter to flower early the following year.
S. occidentalis. 1½. White. July. Trinidad 1817. Syn., *Hippion verticillatum*.

- *orientalis*. 1. Yellowish. July. E. Indies. 1825. Syn., *Hippion hyssopifolium*.

Slimy Grub. See **Selandria**.

Slipperwort. See **Calceolaria**.

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, not immediately in contact with the walls or fences.

Sloa'nea. (In honour of *Sir Hans Sloane*, 1660-1753, founder of the British

Museum and the Chelsea Botanic Garden. Nat. ord., *Tiliaceæ*.)

Stove shrubs. Loam and peat. Cuttings of ripened wood, in sand, in heat.

S. dentata. 50. White. Autumn. Tropical America. 1752.

— *sinemariensis*. 50. White. July. Tropical America. 1820.

Sloe-tree. *Pru'nus spinosa*.

Slow-match Tree. *Careya arboresca*.

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.

Smeathmannia. (Named after *Smeathmann*, an African traveller. Nat. ord., *Passifloraceæ*; Tribe, *Passifloree*.)

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, fibry loam, and lumpy peat. Winter temp., 55° to 60°; summer, 60° to 85°.

S. emarginata. 1851.

— *lavigata*. 6. February. 1823. B. M. t. 4194.

— *pudraeana*. 10. February. B. M. t. 4364.

— *rosea*. Red. 1851.

Smelowskia. (After *T. Smelowski*, a Russian botanist at the beginning of this century. Nat. ord., *Cruciferae*; Tribe, *Thlaspidæ*.)

Hardy, herbaceous perennial. Sandy loam, mixed with a little peat or leaf-mould. Seeds, or divisions in spring.

S. calycina. ½. White. April. Siberia. 1823. Syn., *Hutchinsia calycina*.

Smilacina. (Diminutive of *Smilax*,

from *smile*, a scraper; referring to the rough stems. Nat. ord., *Liliaceæ*; Tribe, *Polygonateæ*.)

Hardy herbaceous, white-flowered, and from North America, except where otherwise specified. Divisions in spring; common, light soil.

S. amoëna. See *S. paniculata*.

— *bifolia*. A synonym of *Maianthemum biflorum*.

— *borealis* of B. M. t. 1403, see *Clintonia borealis*; of B. M. t. 1155, see *Clintonia umbellata*.

— *canadensis*. ½. June. 1812. Now known as *Maianthemum Canadaria*.

— *ciliata*. See *S. racemosa*.

— *paniculata*. 4. Green. May. Guatemala. 1850. Syn., *S. amoëna*.

— *racemosa*. 1. Pale yellow. May. 1649. Red. Lil. t. 230. Syn., *S. ciliata* and *Convallaria racemosa*, B. M. t. 899.

— *ramosa*. 2. Pale yellow. May. Siberia. 1820.

— *stellata*. ½. May. 1633. Red. Lil. t. 185. Syn., *Convallaria stellata*, B. M. t. 1043.

— *trifolia*. ½. June. 1812.

— *umbellata*. See *Clintonia umbellata*.

— *uniflora*. See *Clintonia uniflora*.

Smilax. (From *smile*, a scraper; rough, prickly stems. Nat. ord., *Liliaceæ*; Tribe, *Smilaceæ*.)

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 *rubens*, from the red colour of its tendrils. The species from China should have the protection of a cold pit or a wall.

S. aspera. 8. September. S. Europe. 1648.

— *angustifolia*. 1½. September. China. 1820. Syn., *S. sagittifolia*, B. C. t. 1799.

— *auritica*. Greenish-yellow. 1884. Half-hardy.

— *punctata*. Leaves spotted with white. Gf. t. 683.

— *asperifolia*. A doubtful plant.

— *auriculata*. Southern United States. 1834.

— *australis*. 5. Summer. Australia. 1791. Syn., *S. latifolia*.

— *Boëna-nôx*. 5-10. July. North America. 1739. Syn., *S. tamnoides*.

— *hastata*. Leaves narrower, prickly.

— *rubens*. 6. July. North America. 1812. Syn., *S. rubens*. Wats. Dendr. t. 108.

— *China*. 20. August. China. 1759.

— *discolor*. Leaves blotched with purplish-brown when young. Mexico.

— *glauca*. 3. July. North America. 1815. Syn., *S. Sarsaparilla* of Wats. Dendr. t. 111.

— *glycyphylla*. Summer. Australia. Gf. 1888, p. 343, fig. 74. Botany Bay Tea.

— *herbacea*. June. North America. 1699. Carrion Flower.

— *Simsii*. Leaves smaller. Syn., *S. herbacea* of B. M. t. 1920.

— *lanceolata*. 15. June. N. America. 1785.

— *latifolia*. See *S. australis*.

— *longifolia variegata*. See *S. salicifolia*, var. *variegata*.

— *macrophylla maculata*. See *S. ornata*.

— *marmorata*. Probably a synonym of *S. ornata*.

— *officinalis*. Chiriqui. 1866. Bent. and Tr. t. 289.

— *ornata*. Leaves silvery-marked. Mexico. 1863. Greenhouse. Ill. Hort. t. 439. Syn., *S. macrophylla*, var. *maculata*.

- S. pseu-do-Chi'na*. July. North America. 1739.
 — *quadrangula'ris*. See *S. rotundifolia*.
 — *rotundifolia*. June. North America. 1888.
 Syn., *S. quadrangularis*.
 — *rubens*. See *S. Bona-nox*, var. *rubens*.
 — *sagittifolia*. See *S. aspera*, var. *angustifolia*.
 — *salicifolia variegata*. Leaves long, variegated with white. Para. 1867. Greenhouse.
 Syn., *S. longifolia*, var. *variegata*, III. Hort. t. 521.
 — *Sarsaparilla*. Several species have been grown under this name. That of Wats. Dendr. t. 111 is *S. glauca*.
 — *Shuttleworthii*. Leaves green, blotched with grey. Columbia. 1877.
 — *tamnoides*. See *S. Bona-nox*.
 — *Waltherii*. Virginia.
 — *Watsoni*. 4. July. North America. 1811.

Smithia. (In honour of *Sir James Edward Smith*, 1759-1828, founder of the Linnaean Society, and author of many botanical works. Nat. ord., *Leguminosae*; Tribe, *Hedysareae*.)

Stove annual, requiring the same culture as MIMOSA.

S. purpurea. ½-1. Purple, with white spots. Summer. East Indies. 1848. B. M. t. 4283.

Smoke Plant. *Rhus Cotinus*.

Smoke-wood. *Cle'matis Vitalba*.

Smooth Flower. *Leianthus longifolius*.

Smooth-fruited Horse Chestnut. *Pavia*.

Smut. A popular name for the *Ustilagineae*, a group of microscopic fungi which infest many plants, especially cereals. They are developed within the tissues of their hosts, and when ripe burst out in the form of a sooty powder (spores), whence the name.

Snails. See **Slugs**.

Snail Flower. *Phaseolus caracalla*.

Snake Gourd. *Trichosanthes anguina*.

Snake Plant. *Dracunculus vulgaris*.

Snake Root. *Aristolochia serpentaria*.

Snake's Beard. *Ophiopogon*.

Snake's Head. *Fritillaria meleagris* and *Iris tuberosa*.

Snake's Mouth Orchid. *Pogonia ophioglossoides*.

Snake's Tongue. *Ophioglossum*.

Snake-weed. *Polygonum bistorta*.

Snake Wood. *Cecropia* and *Strychnos colubrina*.

Snapdragon. *Antirrhinum*.

Snapweed. *Impatiens*.

Sneezewort. *Achillea Ptarmica*.

Snow is one of the gardener's best shelters, and should never be removed from his out-door 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. *Viburnum opulus*.

Snowberry. *Chiococca* and *Symphoricarpos racemosus*.

Snowdrop. *Galanthus nivalis* and *Anemone sylvestris*.

Snowdrop Tree. *Halesia tetraptera*.

Snowdrop-tree, African. *Royena lucida*.

Snowdrop Windflower. *Anemone sylvestris*.

Snowflake. *Leucjum*.

Snow Flower. *Chionanthus*.

Snow Glory. *Chionodoxa lucifera*.

Snow in Summer. *Cerastium tomentosum*.

Snow Pear. *Pyrus sinensis*.

Snow Tree. *Pyrus nivalis*.

Snowy Fly. *Aleyrodes prolella*.

Soap-boiler's Ashes. See **Ashes**.

Soap-plant. *Chlorogalum pomeridianum*.

Soap Tree. *Gymnocladus chinensis*.

Soapwort. *Sapona'ria*.

Sobra'lia. (Named after *F. M. Sobral*, a Spanish botanist. Nat. ord., *Orchideae*; Tribe, *Neottieae-Vanilleae*.)

Stove orchids, grown in pots. See **ORCHIDS**.

S. Cattleya. Purplish-brown, yellow. Columbia. 1877.

— *chlora'ntha*. B. M. t. 4682. See *S. macrophylla*.

— *deco'ra*. Various. July. Guatemala. 1836.

— *dichotoma*. Rose, purple. March. Peru.

— *fragrans*. 1. Yellow. New Grenada. 1853.

— *leucocoxantha*. 1. White, golden-yellow, orange-red. August. Costa Rica. 1888.

Warn. Orch. Alb. t. 271.

— *lilia'strum*. White. July. Guiana. 1840.

— *rosea*. Rich rose; petals white-veined.

— *Lo'uisi*. 1-1½. Bright purple. New Grenada. 1890.

— *macrantha*. 6. Crimson. September. Guatemala. 1842.

- S. macrantha albida*. Creamy-white, rosy-purple. Guatemala. 1871.
 — — *Keinastia'na*. White, with a blotch of yellow at the base of the lip. 1888.
 — — *na'na*. 1½-2. June. Mexico. 1874.
 — — *pa'vida*. Whitish, purplish, yellow. Guatemala. 1873.
 — — *purpu'rea*. Rich purple.
 — — *spléndens*. 3. Crimson. September. Guatemala. 1846.
 — *macrophylla*. Yellow. June. Brazil. Syn., *S. chlorantha*, B. M. t. 4682.
 — *rosea*. 6. Pink. Peru. Syn., *S. Ruckeri*, Warn. Sel. Orch. iii. t. 19.
 — *Ruckeri*. See *S. rosea*.
 — *Sand'rae*. White. Central America. 1890.
 — *séssilis*. Pink. December. Peru. 1840.
 — *suaveolens*. Yellow, white. Central America. 1878.
 — *violácea*. Violet, white. July. Merida.
 — *Wilsoni*. White, rose, yellow. Central America. 1890.
 — *xantholeuca*. Sulphur-yellow, orange-red. Guatemala. 1882. Gard. 1882, xxii. p. 366; Warn. Orch. Alb. t. 250.
 — — *alba*. Pale primrose-yellow. 1889.

Soil. Every soil is composed of silica, alumina, lime, magnesia, oxide of iron, salts, and animal and vegetable remains, and the different kinds of soil depend upon the varying proportion of these ingredients. 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 bulbs, 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 amount; and sand or chalk, on the contrary, allows it to pass 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 *débris* 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 soluble in 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 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 putrefactive agency of the air, the more stubborn and more slowly decomposing

matters have time to decay and accumulate in the soil. It is now established that plants are not dependent for food on the matter already in a state of solution in the soil, but that some, at least, of them can, by an acid excretion from their rootlets, dissolve substances (e.g. carbonate of lime, magnesia, etc.) not soluble in water, and so utilize them as food.

Soiling-up. See **Basing-up** and **Earthing-up.**

So'ja. (From *sooja*, the name of a sauce made from the seeds in Japan. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Dolichos*.) Now united to **Glycine**.

Climbing annual. Seeds in May, in the open border, or in a slight hotbed in April, and transplanted.

S. hispida. 3. Violet. July. E. Indies. 1790. Syn., *Dolichos Soja*. The correct name of this is **GLYCINE HISPIDA**.

Sola'ndra. (Named after *Dr. Solander*, a Swedish botanist. Nat. ord., *Solanaceæ*; Tribe, *Atropeæ*.)

Stove evergreen shrubs. Cuttings from flowering shoots in open, sandy loam, and in a brisk bottom-heat; sandy loam, a little fibry peat, and dried nodules of old cow-dung. Winter temp., 50° to 60°, and almost dry; summer, 60° to 90°, and plenty of moisture when growing.

S. grandiflora. 15. Pale yellow. May. Jamaica. 1781. Climber.

— *gutta'ta*. 12. Pale yellow. Mexico. 1830.

— *le'vis*. 2. White. October. B. M. t. 4345.

— *ni'tida*. 20. Yellowish-white. E. Indies. 1829.

— *oppositi'folia*. 10. White. Ceylon. 1820.

— *viridi'flora*. B. M. t. 1948. See *Dysochroma viridiflora*.

Sola'num. Nightshade. (From *solor*, to comfort; soothing narcotic effect. Nat. ord., *Solanaceæ*; Tribe, *Solanææ*.)

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. A review of the tuber-bearing species of this genus, by J. G. Baker, F.R.S., is published in the *Journal of the Linnean Society (Botany)*, vol. xx. p. 489, plates 41-46. See **POTATO**.

HARDY ANNUALS.

S. æthi'opicum. 1½. White. August. Ethiopia. 1597. Jacq. H. Vind. t. 12.

— *Fontanesia'num*. Yellow. August. Brazil. 1813. B. R. t. 177.

— *hetera'ndrum*. Yellow. July. Missouri. 1837.

— *hetero'dæum*. Blue. July. Mexico. 1820.

— *ni'grum*. 3. White. July. Britain. Eng. Bot. ed. 3, t. 931.

— *melanocæ'rasum*. 2. White. July. Virginia. 1820.

— *obtusifolium*. August. 1831.

— *rostra'tum*. Yellow. July. Mexico. 1823.

HARDY HERBACEOUS.

S. cardiophyl'litum. 1. Cream. June. Mexico. 1846. Journ. Hort. Soc. iii. p. 71. Tuberous.

— *Commerso'ni*. 2. Pale lilac or white. Brazil. 1822. Syn., *S. Ohron'dii*.

— *cri'spum*. 18. Blue. June. Chili. 1824. Evergreen.

— *demi'ssum*. 1½. June. Mexico. 1846. Journ. Hort. Soc. iii. p. 69. Tuberous.

— *etubero'sum*. 2. Purple. June. Chili. 1833.

— *Jame'sii*. ¾. White. Summer. Mexico and South Western United States. 1884. B. M. t. 6766.

— *Ma'gia*. 1-1½. White. Summer. Chili and Peru. 1862. B. M. t. 6756.

— *Ohro'ndii*. Rev. Hort. 1833, p. 423, figs. 99-100. See *S. Commerso'ni*.

— *tubero'sum*. 2. White. July. Peru. 1597.

GREENHOUSE ANNUALS.

S. fusca'tum. 1½. Scarlet. June. S. America. 1817. Jacq. Ic. t. 42.

— *melonge'na*. Violet. June. E. Indies. 1597. 1815.

— *fru'ctu-a'lbo*. 2. Blue. June. Tropics. 1597.

— *fru'ctu-lu'teo*. 2. Blue. June. Tropics. 1797.

— *fru'ctu-ru'bro*. 2. Blue. June. Tropics. 1597.

— *fru'ctu-viola'ceo*. 2. Blue. June. Tropics. 1597.

— *ovi'gerum*. 2. Blue. June. Africa. 1597.

— *ovi'gerum*. See *S. melongena*, var. *ovigerum*.

— *pu'ngens*. Blue, violet. June. Australia. 1823.

— *racemi'fl'rum*. 2. White, rose. August. S. Amer. 1818. Biennial.

GREENHOUSE OR HALF-HARDY.

S. a'lbidum Poortna'nni. 1. White. Andes. 1886. Rev. Hort. 1886, p. 232, fig. 67.

— *atropurpu'reum*. 4-6. Yellowish; spines very numerous, purple. Brazil. 1869. Ref. Bot. t. 207.

— *campanula'tum*. 1. Blue. June. N. S. Wales. 1836. B. M. t. 3672.

— *capsica'strum*. 2. Brazil. Very ornamental when bearing fruit. Fl. Ser. t. 1242.

There is a variegated form of this.

— *crini'tum*. 6-8. Dark blue. Quito. 1889.

— *cyana'nthum*. 6. Blue. 1880.

— *esculen'tum*. See *Lycopersicum esculentum*.

— *glauco'phyllum*. 3. 1880.

— *jasmino'des*. 6. Purple. August. S. America. 1838. Climber. Paxt. Mag. viii. p. 5.

— *floribu'ndum*. Garden variety with smaller leaves and more numerous flowers. 1886.

— *peruvia'num*. Jacq. Ic. t. 327. See *Lycopersicum peruvianum*.

— *pseu'do-lycoper'sicum*. Jacq. H. Vind. t. 11. See *Lycopersicum cerasiforme*.

— *quercifolium*. Violet. 1880.

— *robu'stum*. 4. Greenish. Minas Geraes. 1868. Ref. Bot. t. 37.

— *texa'num*. Lilac; fruit bright red. Texas. Half-hardy annual. Fl. Ser. t. 1393.

— *To'rreyi*. Purple. Summer. Texas. 1878. B. M. t. 6461.

— *Tweedia'num*. 1½. White, purple. September. Buenos Ayres. 1833.

STOVE HERBACEOUS.

S. acantho'des. 3-6. Purple. Brazil. 1877. B. M. t. 6283.

— *anthophago'rum*. Berries scarlet, lobed. Fiji Islands. B. M. t. 5424. Formerly the berries were eaten by the natives with human flesh.

— *asarifolium*. White. Venezuela. 1870. Ref. Bot. t. 255.

- S. azu'reum*. Blue. Quito. 1879.
 — *calyci'num*. 1. Blue. June. Mexico. 1820.
 — *ciliat'um*. 1½. White; berries very large, scarlet. Porto Rico. 1871. Flor. Mag. t. 521.
 — — *macrocarpum*. Fruit large. Rev. Hort. 1888, p. 78, fig. 16.
 — *corni'gerum*. 8. Violet. Africa? 1868. Syn., *S. corniculatum*.
 — *Dammannia'num*. 9. Dark blue. Berries yellow. 1890.
 — *Ducha'rtrei*. 1½. Purple. West Tropical Africa. 1890.
 — *guinee'nse*. 4-6. Violet. West Tropical Africa. 1889. Annual.
 — *monanthum*. 2. Blue. June. New Spain. 1818.
 — *pe'nsile*. Bright blue; stamens yellow. Brazil. 1889. B. M. t. 7062.
 — *Seaforthia'num*. 8. Blue. November. West Indies. 1804. Climbing. Andr. Rep. t. 504; B. M. t. 1982. Syn., *S. venustum* of some gardens.
 — *venu'stum*. See *S. Seaforthianum*.
 — *Walli'sii*. 2. Purple; fruit plum-like, eatable. Peru. 1877.
 — *Wendia'ndii*. Pale lilac-purple. Costa Rica. 1887. B. M. t. 6914.
- STOVE EVERGREENS.
- S. aggregat'um*. 6. Purple. June. South Africa. 1821. Jacq. Ic. t. 323.
 — *amazo'nium*. Blue. July. Mexico. 1800. B. C. t. 352.
 — *angula'tum*. 4. White. July. Lima. 1825.
 — *arbo'reum*. 40. White. June. Cumaná. 1819.
 — *auricula'tum*. 4. Violet. Madagascar. 1773.
 — *beta'ceum*. 4. Pink. June. S. America. 1803. Andr. Rep. t. 511.
 — *donarie'nse*. 10. White. July. Buenos Ayres. 1727.
 — *brasilia'num*. 2. June. Brazil. 1820.
 — *coria'ceum*. 4. Purple, white. July. Mexico. 1820. B. M. t. 2708.
 — *corymbo'sum*. 2. Violet. July. Peru. 1786. Jacq. Ic. t. 40.
 — *ela'tum*. 6. White. June. 1820.
 — *fra'grans*. B. M. t. 3684. See *Cyphomandra betacea*.
 — *glutin'o'sum*. 4. Blue. June. 1810.
 — *havane'nse*. 5. Blue. July. W. Indies. 1793.
 — *hi'rtum*. 2. White. June. Trinidad. 1821.
 — *hybridum*. 2. Purple blue. June. Guinea. 1815. Jacq. H. Vind. t. 113.
 — *igneum*. 3. White. July. S. America. 1714. Jacq. H. Vind. t. 14.
 — *inca'num*. 2. Purple. July. Ceylon. 1823.
 — *indicum*. 6. Purple. July. India. 1732. Wight, Ic. t. 846.
 — *jamaice'nse*. 4. White. June. Jamaica. 1818.
 — *lancaefo'lium*. 10. White. July. W. Indies. 1816. Jacq. Ic. t. 329.
 — *lanco'la'tum*. 7. Pale blue. June. Mexico. 1800. B. M. t. 2173.
 — *lavri'fo'lium*. 8. June. S. America. 1820.
 — *longifo'rnum*. 3. Violet. July. Cayenne. 1823.
 — *macranthum*. 12. Pale lilac. Brazil. B. M. t. 4188.
 — *melano'syllum*. 3. White. June. 1821.
 — *mexica'num*. 3. Violet. June. Mexico. 1825.
 — *mo'le*. 5. Purple. July. Trinidad. 1817.
 — *murica'tum*. 3. Violet. July. Peru. 1785.
 — *myriaca'nthum*. 3. Purple. July. 1822.
 — *negl'ctum*. 4. Violet. June. W. Indies. 1824.
 — *pyracantha*. 4. Purple. August. Madagascar. 1789. Jacq. H. Schoenb. t. 470; B. M. t. 2647.
- S. pyracantha inermis*. 4. Purple. September. Madagascar. 1780.
 — *subin'erme*. 7. Blue. July. W. Indies. 1752.
 — *te'ctum*. 3. Yellow. June. Mexico. 1823.
 — *tego're*. 2. Blue. Guiana. 1822.
 — *toment'o'sum*. 2. Blue. June. South Africa. 1862.
 — *trique'trum*. 2. White. June. New Spain. 1820.
 — *tri'ste*. 6. Violet. June. W. Indies. 1820.
 — *umbro'sum*. 2. White. June. Trinidad. 1825.
 — *verbascifo'lium*. 7. White. June. W. Indies. 1740. Jacq. H. Vind. t. 13.
 — *vicia'ceum*. 4. Blue. June. E. Indies. 1817.
 — *volu'bile*. 8. Blue. June. W. Indies. 1823.
- GREENHOUSE EVERGREENS.
- S. aculeati'ssimum*. 3. Pale blue. May. S. America. 1816. Jacq. Ic. t. 41.
 — *Balbi'sii*. 4. Blue. July. S. America. 1816. B. M. t. 2568.
 — — *bipinna'tum*. Blue. June. Buenos Ayres. 1840. B. M. t. 3954.
 — — *purpu'reum*. Purple. B. M. 2828.
 — *Bro'wii*. 3. Violet. July. N. S. Wales. 1820.
 — *co'gulans*. 3. Purple. July. Arabia. 1802. Jacq. H. Schoenb. t. 469.
 — *eic'agnifo'lium*. 6. Blue. June. Chili. 1823.
 — *flave'scens*. 3. Blue. June. Trinidad. 1826.
 — *fu'gae*. 5. White. June. Caraccas. 1816. Jacq. Ic. t. 324.
 — *giga'n'teum*. 15. Violet. June. South Africa. 1792. Jacq. Ic. t. 328; B. M. t. 1921.
 — *lacinia'tum*. 3. Violet. July. Australia. 1772. B. M. t. 349.
 — — *herba'ceum*. 3. Violet. July. Van Diemen's Land. 1772.
 — *ligustrinum*. 5. Deep lilac. June. Chili. 1831. B. C. t. 1963.
 — *macra'ntherum*. 3. Purple. August. Mexico. 1838. B. E. 1841, t. 7.
 — *macrocarpum*. 1. Blue. August. Peru. 1759.
 — *marginat'um*. 4. Purple. July. Africa. 1775. Jacq. Ic. t. 45; B. M. t. 1928.
 — *Milleri*. 3. White. July. South Africa. 1762. Jacq. Ic. t. 330.
 — *myrtifo'lium*. Blue. B. C. t. 1431.
 — *pseu'do-ca'pticum*. 4. White. July. Madeira. 1596.
 — *pubi'gerum*. White. June. Mexico. 1818.
 — *radicans*. 3. Purple. Peru. 1771.
 — *rig'e'scens*. 1½. Violet. June. South Africa. 1823. Jacq. H. Schoenb. t. 42.
 — *Ro'ssii*. Pale blue. Mexico.
 — *runcina'tum*. 3. Violet. September. Chili. 1831. Swt. Fl. Gard. ser. 2, t. 177.
 — *sa'nctum*. 3. Purple. June. Egypt. 1818.
 — *sapon'a'ceum*. 4. White. July. Chili. 1825. B. M. t. 2697.
 — *sinuat'um*. 2½. Bluish. July. 1815.
 — *Sodo'neum*. 3. Violet. June. North Africa. 1683. Sibth. Fl. Gr. t. 235.
 — *stella'tum*. 6. Blue. June. 1805. Jacq. Ic. t. 321.
 — *stell'i'gerum*. 3. Pale purple. July. Australia. 1823.
 — *stramonifo'lium*. 6. Purple. July. E. Indies. 1773. Jacq. Ic. t. 44.
 — *vespert'ilio*. Blue. June. Canaries. 1779.
 — *vesti'tum*. 6. White. October. Mexico. Maund. Bot. iv. t. 192.
- Solaria**. (Named in honour of *Francisci de Borja Solar*, an eminent Chilean mathematician. Nat. ord., *Liliaceae*; Tribe, *Allieae*.)
 A remarkable greenhouse bulb. Seeds, offsets.

Sandy loam and leaf-mould; keep the bulbs nearly dry during their period of rest, and gradually diminish the quantity of water given when the leaves begin to die down. Summer temp., 60° to 80°; winter, 40° to 50°.

S. miersioides. †. Green. Chili. 1871. Syn., *Symea gillesioides*. Ref. Bot. t. 260.

Soldana *lla*. (A diminutive of *solidus*, a piece of money; shape of the leaves. Nat. ord., *Primulaceæ*; Tribe, *Primulææ*. Allied to the American Cowslip.)

Half-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. See *S. montana*.
— *alpi'na*. †. Switzerland. 1656. B. M. t. 49. Syn., *S. Clusii* of B. M. t. 2163.
— *Chu'sii*. See *S. alpina* and *S. pusilla*.
— *crena'ta*. †.
— *mi'nima*. †. Blue. Switzerland. 1823.
— *a'la*. †. Bluish. May. Switzerland.
— *monta'na*. †. Bohemia. 1816. Syn., *S. affinis*.
— *pusi'lla*. †. Blue. Switzerland. 1820. Syn., *S. Clusii* of B. C. t. 872.

Soldier-wood. *Inga purpurea*.

Solea. (After *W. Sole*, an apothecary of Bath, who published a monograph of the British Mints in 1798. Nat. ord., *Violaceæ*.) A synonym of **Ionidium**.

S. stri'cta. See *Ionidium Sprengelianum*.
— *verticilla'ta*. See *Ionidium polygalæfolium*.

Sole'na. (From *solen*, a pipe or tube; in allusion to the long tube of the corolla. Nat. ord., *Rubiaceæ*; Tribe, *Gardeniææ*.) A synonym of **Posoqueria**.

S. gra'cilis. See *Posoqueria gracilis*.
— *longifo'ra*. See *Posoqueria longiflora*.

Soleni'dium. (From *solen*, a tube. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidiææ*. Allied to Brassia.)

Stove orchid, grown on a block. See ORCHIDS.
S. racem'o'sum. Yellow, red. November. Pamplona. Paxt. Fl. Gard. t. 102.

Solenomelos. (From *solen*, a tube, and *melos*, a limb; the perianth is tubular. Nat. ord., *Iridææ*; Tribe, *Sisyrinchieæ*.)

Half-hardy bulbs. For culture, see SISYRINCHIUM.

S. bisfo'rus. White. June. South America. 1828. Syn., *Sisyrinchium odoratissimum*.
— *chile'nsis*. 1. Yellow. September. Chili. 1827. Syns., *Sisyrinchium longistylum*, Fl. Ser. t. 255, and *S. pedunculatum*, B. M. t. 2965.

Solenophora. (From *solen*, a tube, and *pherein*, to bear; the corolla is tubular. Nat. ord., *Gesneraceæ*. Syn., *Arctocalyx*.)

Stove, evergreen shrub. For culture, see GLOXINIA.

S. Endlicheria'na. 2. Orange, marked with purple. April. Mexico. 1849. Syn., *Arctocalyx Endlicherianus*, Fl. Ser. t. 546.

Solida'go. Golden Rod. (From *solidare*, to unite; supposed healing properties. Nat. ord., *Compositæ*; Tribe, *Asteroidææ*.)

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. See *S. virgaurea*.
— *alt'i'ssima*. See *S. rugosa*.
— *ambi'gua*. 2. July. 1759.
— *angustifo'lia*. 3. September.
— *anisa'ta*. 3. September. 1815.
— *arena'ria*. See *S. virgaurea*.
— *argen'tea*. See *S. pulverulenta*.
— *argu'ta*. North America.
— *a'spera*. 3. September. 1732.
— *bi'color*. See *Aster bicolor*.
— *cæ'sia*. 2. September. 1732.
— *canad'e'nsis*. 3. August. 1648. Syn., *S. humilis*.
— *cilia'ris*. 3. August. 1811.
— *decu'rrens*. See *S. virgaurea*.
— *Drummo'ndii*. 1-3. Summer. 1835. B. M. t. 6805.

— *ela'ta*. 1. September. 1811.
— *elli'ptica*. 3. August. 1759.
— *axillifo'ra*. Flower-heads short, in the axils of the leaves. Syn., *S. fragrans* of some authors.

— *ere'cta*. 3. September.
— *fra'grans*. 3. August. See also *S. elliptica*, var. *axilliflora* and *S. serotina*.
— *giga'ntea*. 6. August. 1758.
— *glomera'ta*. 3. September. 1820.
— *graminifo'lia*. 3. September. 1758.
— *hu'milis*. See *S. canadensis*.
— *læviga'ta*. 3. September. 1699.
— *lanco'la'ta*. 3. September. 1758. B. M. t. 2546. Syn., *Euthamia graminifolia*.
— *laterifo'ra*. 3. August. 1758.

— *latifo'lia*. See *S. virgaurea*.
— *macrophy'lla*. 3. September.
— *me'cia'na*. 3. September. 1683.
— *minu'ta*. †. July. Pyrenees. 1772.
— *multiradia'ta*. See *S. virgaurea*.
— *nemora'lis*. †. September. 1769.
— *nepale'nsis*. See *S. virgaurea*.
— *noyeborac'e'nsis*. 3. September.
— *nudifo'ra*. See *S. virgaurea*.
— *o'dora*. 3. July. 1699.
— *pa'tula*. 2. September. 1805.
— *paucifloscu'la*. 2. September. 1811.
— *polifo'lia*. 3. September. 1826.
— *pro'cera*. 6. September. 1758.
— *pube'rula*. 2. September.
— *pulveru'nta*. 3. August. Syn., *S. argentea*.
— *pyramida'ta*. 2. September. 1790.
— *recurva'ta*. 2. October.
— *refle'xa*. 3. August. 1758.
— *ri'gida*. 3. September. 1710.
— *rug'o'sa*. 2-7. August. 1686. Syn., *S. altissima*.

— *soa'bra*. 3. August. 1811.
— *sempervi'rens*. 5. September. 1699.
— *sero'tina*. 4. July. 1758.
— *si'mplex*. 1. 1826.
— *specio'sa*. 4. October. 1817.
— *squarro'sa*. 3. September.
— *stri'cta*. 3. September. 1758.
— *tenuifo'lia*. 2. October. 1758.
— *urticæfo'lia*. See *Calea urticæfolia*.

- S. villosa*. 3. August. 1732.
 — *viminea*. 3. September. 1759.
 — *virgata*. 2. September. 1800.
 — *virgurea*. $\frac{1}{2}$ -2. August. N. America and Europe. Eng. Bot. ed. 3, t. 778. Forms of this are: *S. alpestris*, *S. arenaria*, *S. decurrens*, *S. latifolia*, *S. multiradiata*, *S. nepalensis*, and *S. nudiflora*.

So'llya. (Named after *R. H. Solly*, a naturalist. Nat. ord., *Pittosporaceæ*.)

Greenhouse, blue-flowered, evergreen climbers, from Australia. Seeds in a slight hotbed, in April; cuttings at the same time 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 conservatory wall.

- S. angustifolia*. See *Billardiera angustifolia*.
 — *Drummondii*. See *S. parviflora*.
 — *heterophylla*. 5. July. 1830. B. R. t. 1466; B. M. t. 3523. Australian Bluebell Creeper.
 — — *angustifolia*. 5. A narrow-leaved variety. Syn., *S. linearis*, B. R. 1840, t. 3.
 — *linearis*. See *S. heterophylla*, var. *angustifolia*.
 — *parviflora*. Blue. July. 1838 Syn., *S. Drummondii*.
 — *salicifolia*. Marr. Mag. 1839, t. 11, is probably a form of *S. heterophylla*.

Solomon's Seal. *Polygonatum multiflorum*.

Solomon's Seal, False. *Smilacina*.

Sou'chus. Sow-thistle. (The ancient Greek name, *Sogchos*. Nat. ord., *Compositæ*; Tribe, *Cichoriaceæ*.)

Hardy annuals or perennials. Seeds, cuttings or divisions, in the case of perennial species, which are the only ones cultivated. Ordinary garden-soil.

- S. gummi'fer*. Yellow. Canary Islands. 1861. B. M. t. 5219.
 — *Jacquinii*. 1-2. Golden-yellow. March. Canary Islands. 1832. B. M. t. 6142. Pastor's Lettuce.
 — *pinnatus*. 3. Yellow. Summer. Madeira. 1777.
 — *radicata*. Yellow. July. Canary Islands. 1780. B. M. t. 5211.

Soneri'la. (From *Soneri-ula*, the Javanese name. Nat. ord., *Melastomaceæ*; Tribe, *Sonerileæ*. Alliance near *Bertolonia*.)

Stove annuals. Seeds in a gentle hotbed, in March, potted off, and bloomed in greenhouse or stove; sandy peat

- S. Bensonii*. Rose-purple. India. 1873. B. M. t. 6049.
 — *elegans*. 1. Pink. January. E. Indies. B. M. t. 4978.
 — *grandiflora*. Red. Neilgherries. 1863. Sub-shrub. B. M. t. 5354.
 — *Hendersonii*. $\frac{1}{2}$. Lilac-rose; leaves olive green with white spots. 1875. This is sometimes regarded as a variety of *S. margaritacea*. The var. *argentea* has the leaves surfaced with silvery-grey; and in var. *marmorata* they are banded with silvery-grey.
 — *margaritacea*. 1. Purple. E. Indies. 1854. B. M. t. 5104.

S. orbiculata. 1. Pink. November. E. Indies. 1852.

- *orientalis*. Bright rose, or purple; anthers yellow. Arracan Hills. 1890. The varieties *guttulata*, *picta*, and *punctata* differ in the variegation of the leaves.
 — *stricta*. $\frac{1}{2}$. Rose. May. Java. 1848. B. M. t. 4394.

Sonnera'tia. (Named after *M. Sonnerat*, a European traveller. Nat. ord., *Lythrariceæ*; Tribe, *Lythraceæ*.)

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; fibry loam, turfy peat, a little sand, and dried old cow-dung. Winter temp., 45° to 55°; summer, 60° to 85°.

- S. a'ida*. Red. June. 1822. Wight, Ic. t. 340.
 — *alba*. White. May. 1824.
 — *apetala*. 40. White. June. 1826.

Soot is the volatilized 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 table-spoonful of soot to a quart of water, for plants in pots; but for asparagus, peas, etc., 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, *Sophora*, of a leguminous tree. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ*.)

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 *japonica* 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. The variety *pe'ndula* is extremely graceful and fast growing.

HARDY HERBACEOUS.

- S. alopecuroides*. 4. Yellow. July. Levant.
 — *flavescens*. 2. Yellow. June. Siberia. 1785.
 — — *galegeoides*. 2. Yellow. June. Siberia. 1817.

HARDY DECIDUOUS TREES.

- S. chinensis*. 30. White. August. China. 1763.
 — *heptaphylla*. 6. Yellow. October. Neilgherries. 1830. Wight, Ic. t. 1155.
 — *japonica*. 40. White. August. Japan. 1763. Jacq. H. Schoenb. t. 353. Syn., *Styphnolobium japonicum*.
 — — *foliis-variegatis*. 14. White. August. Japan.
 — — *pe'ndula*. 12. White. August. Japan.
 — — *variegata*. Leaves variegated.

OREENHOUSE.

- S. chrysophylla*. 6-10. Yellow. May. Sandwich Islands. Syn., *Edwardia chrysophylla*, B. R. t. 738. Deciduous.

- S. macrocarpa*. 6. Yellow. April. Chili. 1822. B. C. t. 1125. Syn., *Edwardsia chilensis*, B. R. t. 1798. Evergreen.
— *secundiflora*. 6. Violet. June. Mexico. 1820. Rev. Hort. 1864, p. 201.
— *sericea*. 6. Yellow. Bourbon. 1820. Syn., *Edwardsia nitida*.

HALF-HARDY DECIDUOUS.

- S. glauca*. 6. Pale purple. May. Nepal. 1820. Syn., *S. velutina*, B. R. t. 1185. Shrub.
— *tetraptera*. 12. Yellow. May. New Zealand. 1772. G. C. 1878, ix. p. 729. Tree.
— *grandiflora*. 12. Yellow. May. New Zealand. A robust variety. Syn., *S. tetraptera*. B. M. t. 167.
— *microphylla*. 6. Yellow. May. New Zealand and Australia. 1772. Syn., *Edwardsia Maenabiana*, B. M. t. 3735, and *E. microphylla*. B. M. t. 1442.
— *tomentosa*. 6. Yellow. August. North America. 1739. B. M. t. 3390. Shrub.
— *velutina*. See *S. glauca*.

EXCLUDED SPECIES.

- S. alpina*. See *Thermopsis corcogensis*.
— *argentea* and *S. bifolia* are synonyms of *Anmodendron Sieversi*.
— *fabacea*. See *Thermopsis fabacea*.

Soprocra'tleya. (A name given to hybrids between the genera *Sophronitis* and *Cattleya*. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Lælieæ*.)

Stove orchids.

- S. Batemanni*na. A synonym of *Lælia Batemanni*ana.
— *Calypto*. A hybrid between *Sophronitis grandiflora* and *Cattleya Loddigesii*, var. *Harrisonæ*. G. C. 1890, viii. p. 588.

Sophronia of Lindley. (From *sophrona*, modest. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Lælieæ*.) A synonym of **Sophronitis**.

- S. cernua*. See *Sophronitis cernua*.

Sophronitis. (From *sophrona*, modest; referring to the pretty little flowers. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Lælieæ*.)

Stove orchids, grown on blocks. See ORCHIDS.
S. cernua. $\frac{1}{2}$. Red. June. Rio Janeiro. 1827. B. R. t. 1129. Syn., *Sophronia cernua*.

- *coccinea*. See *S. grandiflora*.
— *grandiflora*. $\frac{1}{2}$. Red. Organ Mountains. 1837. Lindl. Ser. t. 5. Syn., *S. coccinea*, Fl. Ser. t. 1716, and *Cattleya coccinea*. *S. grandiflora* of B. M. t. 3709 is *S. militaris*.
— *aurantiaca*. Orange-red. Rev. Hort. 1836, p. 492.
— *purpurea*. Purplish. Brazil. 1873. Syn., *S. purpurea*.
— *rosea*. Rose or rosy-carmine. 1884. Syn., *S. rosea*.
— *militaris*. $\frac{1}{2}$. Bright cinnabar or crimson. November. Brazil. 1837. Syn., *S. grandiflora* of B. M. t. 3709.
— *ptero-carpa*. Red. Guatemala. 1842. Paxt. Fl. Gard. iii. p. 11, fig. 239.
— *violacea*. $\frac{1}{2}$. Violet. February. Mexico. 1838. B. M. t. 6880.

Sopu'bia. (From the East Indian name. Nat. ord., *Scrophulariaceæ*; Tribe, *Gerardieæ*.)

Stove, herbaceous perennial. Soil peaty. Cuttings or seeds.

- S. delphinifolia*. 4. Rose. July. India. Syn., *Gerardia delphinifolia*.

Sor'bus. (The Latin name of the Service Tree. Nat. ord., *Rosaceæ*; Tribe, *Pomeæ*.) A synonym of **Pyrus**.

- S. americana*. See *Pyrus americana*.
— *Aria*. See *Pyrus Aria*.
— *Aucuparia*. See *Pyrus Aucuparia*.
— *domestica*. See *Pyrus Sorbus*.
— *hybrida*. See *Pyrus fennica*.

Sorghum. Millet Grass. (From the Indian name, *Sorgh*i. Nat. ord., *Gramineæ*; Tribe, *Andropogoneæ*.)

Half-hardy, or greenhouse, perennial grass. Seeds or divisions.

- S. halepense*. $\frac{1}{2}$. Purplish. Mediterranean region.

Sorindei'a. (From the Malagasy name. Nat. ord., *Anacardiaceæ*.)

A small stove tree. For culture, see ANACARDIUM.

- S. madagascariensis*. 10. Purple. May. Madagascar. 1828.

Soroce'phalus. (From *soros*, a heap, and *kephale*, a head; clustered head of flowers. Nat. ord., *Proteaceæ*; Tribe, *Protea*.)

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, fibry loam, and a little peat and broken freestone, carefully drained. Winter temp., 38° to 45°.

- S. diversiflorus*. 4. June. 1803.
— *imberbis*. 3. July. 1804.
— *imbricat*us. 3. June. 1794. Syn., *Protea imbricata*. Andr. Rep. t. 517.
— *lanatus*. 2. August. 1790.
— *setaceus*. 2. July. 1823.
— *spatalloides*. 3. July. 1803.
— *tenuiflorus*. 3. July. 1802.

Soroma'nes. (From *soros*, a heap, and *mania*, uncontrollable propensity; alluding to its excessive production of sori. Nat. ord., *Filices—Polypodiaceæ*.) Now united with **Acrostichum**.

Stove ferns. See FERNS.

- S. serratifolium*. 2. Venezuela.

Sorrels. These are *Oxalis acetosella*, Wood Sorrel; *Rumex acetosa*, Garden Sorrel; *R. scutellatus*, French or Roman Sorrel. They thrive best in any light, rich garden-soil.

The species of *Rumex* are propagated by seed, and all of them by parting the roots, both of 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, six or eight inches apart, and a quarter-inch in depth. When two or three inches high, the seedlings should be thinned to three or four 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 twelve inches apart each way, or, if the French, eighteen 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 readily.

Sorrel-tree. *Oxydendron arborescens.*

Sorrowful-tree. *Nyctanthes arbor-tristis.*

Sorus. The name given to the fructification of Ferns. It is generally situated on the under-surface of the frond, and consists of a number of stalked bodies (*sporangia*) containing minute, dust-like spores, which are liberated when ripe and serve to reproduce the plant. These sori are sometimes covered by a scale (*indusium*), the shape of which serves to distinguish the genera; in *Nephrodium* it is reniform, in *Aspidium* circular and attached by its centre, in *Asplenium* elongate, in *Pteris* and *Adiantum* it is formed from the recurved margin of the frond, and in *Polypodium* absent. In *Hymenophyllum* and *Trichomanes* the sorus is cup-shaped and situated at the apex of a segment of the frond.

Suari Nut-tree. *Ca'ryocar nuciferum.*

Soula'ngia. (Named after *Soulanges Bodin*, a French nurseryman. Nat. ord., *Rhamnaceæ*; Tribe, *Rhamneæ*.) A synonym of *Phytica*.

Greenhouse evergreen shrubs, from South Africa. Cuttings of the points of shoots in sand, under a bell-glass, in April or May; sandy, fibry peat, and a few bits of charcoal, to keep it open. Winter temp., 33° to 45°. Should be tried against a wall in the open air, in dry places and mild situations.

S. buxifolia. See *Phytica buxifolia*.
—*cordata.* See *Phytica cordata*.
—*dioica.* See *Phytica dioica*.
—*myrtifolia.* See *Phytica myrtifolia*.
—*rubra.* B. R. t. 1498. See *Phytica purpurea*.
—*thymifolia.* See *Phytica thymifolia*.

Sour is a term applied to wet lands producing acid weeds, such as Sorrel;

but it is also appropriate because such lands contain Gallie and other acid compounds, unfriendly to cultivated plants.

Sour Gourd. *Adansonia digitata.*

Sour Sop or Custard Apple. *Anona muricata.*

South African Yellow Wood. *Podocarpus elongata.*

Southern Wood. *Artemisia Abrotanum.*

South Sea Tea. *Ilex vomitoria.*

Sowbread. *Cyclamen.*

Sowerbæ'a. (Named after *Mr. Sowerby*, an eminent botanical artist. Nat. ord., *Liliaceæ*; Tribe, *Johnsoniæ*.)

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. juncea. 1. May. 1792. Linn. Trans. v. t. 6; B. M. t. 1104.

—*laxiflora.* 1. June. 1839. B. R. 1841, t. 10.

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, etc., 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 struck 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 better 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 evenly with an angular bottom 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 better 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 beds four or five feet wide, 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, half an inch or an 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 **Glyci'ne.**

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 fourteen to sixteen inches long in the plate, and nine or ten broad, narrowing half an inch to the bottom. *The Middle Spade* is about a foot long in the plate, and seven or eight 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 ten or twelve inches long in the plate, and five or six wide is convenient in pointing-up or slight digging, and fresh earthing the surface between closerows of small plants, in beds and borders, etc., 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 a quarter of an inch thick upwards, growing gradually thinner from the middle

downward, the tree or handle being generally of ash, about two feet and a half long and an inch and a half 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 slipping. *Semicircular* or *Scoped 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., *Leguminosæ*; Tribe, *Podalyriæ*.) Now united with **Pultenæa**.

Greenhouse evergreen shrub. For culture, see **PULTENÆA**.

S. Sieber'i. 2. Yellow. May. N. S. Wales. 1824. A synonym of *Pultenæa euhila*.

Spanish Bluebell or **Squill.**

Sci'lla hisp'ánica.

Spanish Broom. *Spar'tium ja'n-ceum.*

Spanish Chestnut. *Cast'a'nea sati'va.*

Spanish Garlic. See **Rocambole.**

Spanish Juice Plant. *Glycyrrhi'za gla'bra.*

Spanish Moss. *Tilla'ndsia usneo'des.*

Spanish Onion. A form of onion largely imported into this country, but not sufficiently hardy for remunerative growing in this climate.

Spanish Oyster Plant. *Sc'lymus hisp'anicus.*

Spanish Viper's Grass. *Scor-zone'ra.*

Spara'xis. (From *sparasso*, to tear; lacerated spathes. Nat. ord., *Iridæ*; Tribe, *Ixiæ*.) Allied to *Ixia*.)

Pretty little bulbs, from South Africa. For culture, see **IXIA**.

S. anemonifl'ora. 3. White. June. 1825. Syn., *Ixia anemoniflora* of Red. Lil. t. 85, but not of Jacq. lc. t. 273.

— *bi'color.* See *Synnotia bicolor*.

— *bl'nda.* See *S. tricolor*, var. *blanda*.

— *bulbifera.* 2. Yellow. May. 1758. Syn.,

Ixia bulbifera. B. M. t. 545.

— *fra'grans.* See *Ixia fragrans*.

— *grandifl'ora.* 1-2. Purple, white. April. 1758. B. M. t. 779. Syns., *Ixia aristata*, Andr. Rep. t. 87, and *I. grandiflora*, B. M. t. 541.

— *Lili'go.* White. April. 1758. Syns., *S. Liliago* and *Ixia Liliago*, Red. Lil. t. 109.

- S. grandiflora lineata*. †. Yellow, pink. April. Syn., *S. lineata*, Swt. Fl. Gard. ser. 2, t. 131.
- *stella'ris*. 1. Purple. June. 1836. Syn., *S. stellaris*, Swt. Fl. Gard. ser. 2, t. 383.
- *stria'ta*. †. Variegated. April. 1758.
- *Lilia'go*. See *S. grandiflora*, var. *Liliago*.
- *linea'ta*. See *S. grandiflora*, var. *lineata*.
- *pendula*. B. R. t. 1360. Now known as *Dierama pendula*.
- *pulche'rri'ma*. B. M. t. 5555. Now known as *Dierama pulcherrima*.
- *stella'ris*. See *S. grandiflora*, var. *stellaris*.
- *tri'color*. 1-2. Orange, yellow, black. May. 1789. B. M. t. 1842. Syn., *Laia tricolor*. B. M. t. 381.
- *blan'da*. Whitish, rose, yellow. May. 1821. Syns., *S. blanda* and *S. tricolor*, var. *subrosea albida*, B. M. t. 1482.
- *Griffi'nii*. Yellow, violet-purple. April. 1811. Syn., *S. tricolor*, var. *violaceo-purpurea*. B. M. t. 1482.
- *sangu'neo-purpu'rea*. 1. Red. April. 1811.
- *subro'sea d'albida*. See *S. tricolor*, var. *blanda*.
- *versicolor*. Bright purple, brownish. September. 1825. Syns., *S. versicolor*, Swt. Fl. Gard. t. 160, and *Synnotia versicolor*.
- *viola'ceo-purpu'rea*. See *S. tricolor*, var. *Griffinii*.
- *versicolor*. See *S. tricolor*, var. *versicolor*.
- *Wa'ttii*. See *Synnotia variegata*.

Sparma'nnia. (Named after A. Sparmann, a Swedish botanist. Nat. ord., *Tiliaceæ*; Tribe, *Tiliceæ*.)

A fine old greenhouse evergreen shrub. Cuttings of young shoots in April; loam and a little peat. Winter temp., 38° to 48°.

S. africa'na. 10. White. May. South Africa. 1790. B. M. t. 516. Syn., *S. acerifolia*.

Spartium. Spanish Broom. (From *sparton*, cordage; alluding to the flexible shoots. Nat. ord., *Leguminosæ*; Tribe, *Genisteæ*. Allied to *Genista*.)

Hardy herbaceous, 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. acutifolium*. B. R. t. 1974. A synonym of *S. junceum*.
- *ju'nceum*. 6. August. South Europe. 1548. B. M. t. 85.
- *flo're-plé'no*. 6. August. South Europe. 1548.
- *odoratissimum*. 4. July. Persia. 1834. Swt. Fl. Gard. ser. 2, t. 390.

EXCLUDED SPECIES.

- S. ætne'nse*. B. M. t. 2674. See *Genista ætensis*.
- *angula'tum*. Sibth. Fl. Gr. t. 672. See *Cytisus angulata*.
- *aphyllum*. See *Eremospartum aphyllum*.
- *decumbens*. Jacq. Ic. t. 355. See *Cytisus decumbens*.
- *ciné'reum*. See *Genista cinerea*.
- *conge'stum*. See *Genista congesta*.
- *ferox*. B. R. t. 368. See *Genista ferax*.
- *linifolium*. See *Genista linifolia*.
- *monosper'mum*. B. M. t. 683. See *Genista monosperma*.
- *multiflorum*. B. C. t. 1052. See *Cytisus albus*.

- S. nubigenum*. See *Cytisus fragrans*.
- *parviflorum*. See *Genista parviflora*.
- *patens*. See *Genista patens*.
- *pur'gans*. B. C. t. 1117. See *Genista purgans*.
- *radiat'm*. B. M. t. 2260. See *Genista radiata*.
- *scopari'um*. See *Genista scoparia*.
- *scorpi'um*. See *Genista scorpius*.
- *sphæroca'rpmum*. See *Genista sphærocarpa*.
- *telone'nstis*. See *Adenocarpus telonenstis*.
- *umbella'tum*. See *Genista umbellata*.
- *virga'tum*. B. M. t. 2265. A synonym of *Eremospartum aphyllum*.

Spartotha'mnus. (From *sparton*, cordage, and *thamnus*, a shrub; its flexible shoots. Nat. ord., *Verbenacæ*; Tribe, *Chloantheæ*.)

Greenhouse evergreen shrub. Cuttings of young shoots under a bell-glass, in sandy soil; sandy, fibry peat, and lumpy loam. Winter temp., 38° to 45°.

S. ju'nceus. 3. White. August. Australia. 1819.

Spatala'nthus. (From *spatalos*, delicate, and *anthos*, a flower. Nat. ord., *Irideæ*; Tribe, *Sisyrinchicæ*.) A synonym of **Romulea**.

A very rare and delicate Cape bulb, requiring one-half sand and one-half good, turfy peat, in a well-drained pot, after the manner of *Lxias*.

S. speciosus. Swt. Fl. Gard. t. 300. See *Romulea speciosa*.

Spatal'la. (From *spatalos*, delicate; the flowers are fragile. Nat. ord., *Proteaceæ*; Tribe, *Proteeæ*.)

Greenhouse, purple-flowered evergreens, from South Africa. Cuttings of ripe young shoots in sand, under a bell-glass, and kept cool; sandy, fibry loam, with pieces of charcoal and freestone; drainage and watering very particularly attended to. Winter temp., 38° to 45°. Pots defenced from sun in summer.

- S. bractea'ta*. 3. June. 1806.
- *brevifolia*. 1½. July. 1823.
- *cauda'ta*. 2. June. 1812.
- *incu'rova*. 2½. May. 1789.
- *mo'ltis*. 2. June. 1826.
- *ni'nea*. 2. June. 1806.
- *peduncula'ta*. April. 1822.
- *proli'fera*. 1½. July. 1800.
- *pyramida'lis*. June. 1821.
- *ramulo'sa*. 3. August. 1787.
- *Thunbe'rgii*. 3. May. 1806.

Spatha'nthem. (From *spathe*, a spathe, and *anthos*, a flower; the flowers are seated on the midrib of the spathe. Nat. ord., *Aroideæ*; Tribe, *Spathicarpææ*. Allied to *Spathicarpa*.)

Greenhouse tuberous-rooted perennial. Offsets and division of the tubers. Rich loam and peat, well-drained; give plenty of water when growing, and place in the warmest part of the house. It requires to rest in winter like *CALADIUM*, *ARISÆMA*, etc. Summer temp., 60° to 85°; winter, 55° to 60°.

S. hetera'ndra. 1½. Spathe and spadix green. Tropical America. 1876. Syn., *Gamochlamys heterandra*. Ref. Bot. t. 346.

Spathe. A large bract, which incloses the whole inflorescence in bud, as in Palms and Aroids.

Spathe'lia. (From *spathe*, a sheath, or *spathe*, as in the Palm; resemblance. Nat. ord., *Simarubææ*; Tribe, *Picramniææ*.)

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. simplex. 40. Red. Jamaica. 1778.

Spathica'rpa. (From *spathe*, a spathe, and *karpos*, fruit; the ovaries are seated along the midrib of the spathe. Nat. ord., *Aroideæ*; Tribe, *Spathicarpeææ*.)

Stove evergreen herbs, with tuberous root-stock. By divisions and seeds. Rich sandy loam. Summer temp., 80° to 90°; winter, 60° to 75°.

S. cornuta. 1. Green. Brazil. 1860.

— hastifolia. 1. White. July. South Brazil. 1831. Hook. Bot. Misc. t. 77.

— longicaulis. 1. Green. Brazil. 1860.

— platyspatha. $\frac{1}{2}$ -1. Green. Brazil. 1860.

— sagittifolia. $\frac{1}{2}$ -1. Green. Brazil. 1860.

Spathiphy'llum. (From *spathe*, a spathe, and *phyllon*, a leaf; spathe leaf-like. Nat. ord., *Aroideæ*; Tribe, *Arontiacææ*.)

Stove evergreen herbaceous perennials. Seeds sown in a hotbed; but chiefly by divisions of the rootstock. Peat and leaf-mould in equal parts, mixed with a little loam and bits of charcoal. They require plenty of water and the atmosphere must be moist. For decorative purposes some of the smaller species, such as *floribundum*, *Patini*, *candidum*, and *cannaefolium*, are very useful, and form a very effective contrast with *ANTHURIUM Scherzerianum* or *A. Andreanum*. Summer temp., 65° to 85°; winter, 60° to 70°.

S. candidum. $\frac{3}{4}$. Spathe and spadix white. Columbia. 1875. Syns. *Anthurium candidum* and *Massowia Gardneri*.

— cannaefolium. 1. Spathe and spadix white. W. Indies and Columbia. Syns., *Anthurium Dechardi* and *Pothos cannaefolia*. B. M. t. 608; B. C. t. 471.

— commutatum. 2 $\frac{1}{2}$. Spathe and spadix white. Philippines. 1870. Syn., *S. Minahasææ*.

— floribundum. 1. White. New Grenada. 1874. Syn., *Anthurium floribundum*. Ill. Hort. 1877, t. 159.

— heliconiaefolium. 4. Spathe green; spadix white. Peru.

— hybridum. A hybrid between *S. cannaefolium* and *S. Patini*. Ill. Hort. t. 450.

— lancefolium. Greenish. Venezuela. Syn., *Dracontium lancefolium*. Jacq. Ic. t. 612.

— Minahasææ. See *S. commutatum*.

— Ortigiesii. 1 $\frac{1}{2}$. Spathe light green; spadix white. July and December. Mexico. 1873.

— Patini. $\frac{3}{4}$. White. Columbia. 1874. Syns., *Anthurium Patini* and *Amomophyllum Patini*.

— pictum. Leaves mottled with golden green. S. America. 1874.

— Wallisii. See *Stenospermatium Wallisii*.

Spatho'dea. (From *spathe*, a sheath; sheath, or spathe-like calyx. Nat. ord., *Bignoniaceææ*; Tribe, *Tecomeææ*.)

Cuttings of side-shoots, three or four 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. bracteosa. 8. White. Guiana. 1823.

— fraxinifolia. 10. Caraccas. 1822. Syn.,

Bignonia fraxinifolia.

— uncata. 10. Yellow. Guiana. 1804. Syn.,

Bignonia uncata.

STOVE EVERGREEN TREES.

S. adenophylla. E. Indies. 1822. A synonym of *Heterophragma adenophyllum*.

— campanulata. 50. Orange, red. Guinea. Paxt. Fl. Gard. t. 104; B. M. t. 5091.

— corymbosa. 6. Yellow. Trinidad. 1824.

A synonym of *Macfadyna corymbosa*.

— lævis. B. M. t. 4537. See *Newbouldia lævis*.

— longiflora. 12. Red. E. Indies. 1816. A

synonym of *Dolichandrone Rheedii*.

— pentandra. B. M. t. 3681. See *Newbouldia*

lævis.

— Rheedii. 16. Cream. E. Indies. 1794. A

synonym of *Dolichandrone Rheedii*.

— Rozburghii. 12. Pink. E. Indies. 1820.

A synonym of *Heterophragma Roz-*

burghii.

— serrulata. E. Indies. 1832.

— speciosa. Pink. May. W. Africa. 1850.

Spathoglo'ttis. (From *spathe*, a sheath, and *glottis*, a tongue. Nat. ord., *Orchideææ*; Tribe, *Epidendreae-Eriacææ*. Allied to *Bletia*.)

Stove orchids, grown in pots. See ORCHIDS.

S. Augustorum. See *S. Viellardi*.

— aurea. 2. Yellow. July. Malacca. 1849.

— Fortunei. $\frac{3}{4}$. Yellow. January. Hongkong.

1844. B. R. 1845, t. 19. Greenhouse.

— Kimballiana. G. C. 1888, iv. p. 93, fig. 9. A

form of *S. aurea*.

— Lobbii. Sulphur, brown. Burmah. 1876.

— pacifica. Lilac, yellow. Pacific Islands.

1883.

— Pe'tri. 2. Lilac, purple. Polynesia. 1877.

B. M. t. 6354.

— plicata. 1 $\frac{1}{2}$. Purple. June. Java. 1844.

— pubescens. 1 $\frac{1}{2}$. Yellowish, violet. June.

Sylhet.

— Regnierii. Light yellow, white, brown. Cochín

China. 1887.

— rosea. 2. Rose. July. Philippines. 1837.

Syn., *Paxtonia rosea*. B. R. 1838, t. 60.

— tomentosa. Crimson. June. Manilla.

— Viellardi. Pale lilac. Sunda Islands. 1886.

B. M. t. 7013. Syn., *S. Augustorum*.

Land. t. 25.

Spawn is the underground vegetative part of the mushroom. It consists of numerous whitish, much-branched threads (*hyphae*), from which, under favourable conditions, the mushrooms arise. It is not seed as is sometimes erroneously supposed, but corresponds more to an underground stem. It originates from the minute dust-like spores formed on the under surface of the mature mushroom. See **Mushroom**.

Specula'ria. (From the ancient name, *Sp'culum Veneris*, or *Venus'* Looking-glass. Nat. ord., *Campanulacææ*; Tribe, *Campanuleææ*.)

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. diffusa. Blue. August. Cape of Good Hope. 1787.
— *fruticosa*. 1. Blue. August. Cape of Good Hope. 1787.

GREENHOUSE HERBACEOUS.

S. interrupta. 1. Blue. June. Cape of Good Hope. 1818. Syn., *Campanula interrupta*.
— *nitida*. 2. White. June. Cape of Good Hope. 1787.

HARDY ANNUALS.

S. biflora. 1. Blue. June. Russia. 1836.
— *falcata*. 1. Rose. July. Mediterranean. 1820. Syn., *Prismatocarpus falcatus*.
— *hybrida*. 1. Rose. July. England. Syns., *Campanula hybrida*, Eng. Bot. ed. 3, t. 874, and *Prismatocarpus hybridus*.
— *pentagonia*. 1. Blue. July. Levant. 1696. Syns., *Campanula pentagonia*, B. R. t. 56, and *Prismatocarpus pentagonius*.
— *perfoliata*. 1. Blue. July. N. Amer. 1680. Syn., *Prismatocarpus perfoliatus*.
— *Spe'culum*. 1. Green, white. July. South Europe. 1596. Syn., *Campanula Speculum*. B. M. t. 102 Venus' Looking-glass.
— — *calycina*. July. Iberia.
— — *libanica*. July.
— — *pubescens*. July. France. Syn., *Prismatocarpus hirsutus*.

Speedwell. *Veronica*.

Speira'ntha. (From *speira*, a coil, and *anthos*, a flower; in allusion to the arrangement of the flowers. Nat. ord., *Liliaceæ*; Tribe, *Convallariaceæ*.)

Greenhouse plant, requiring the same culture as ALBUCA.

S. convallarioides. 2. White or greenish. June. China. 1854. Syn., *Albuca Gardensi*. B. M. t. 4842.

Spenne'ra. (Named after M. Spenner, a German botanist. Nat. ord., *Melastomaceæ*; Tribe, *Osbeckiaceæ*. Allied to Pleroma.) This genus is now united with *Aciotis*.

Stove evergreens. Seeds, and cuttings of the young shoots in sand, under a bell-glass, and in heat; sandy peat and fibry loam. Winter temp., 50° to 60°; summer, 60° to 85°.

S. fragilis. 2. White. June. Trinidad. 1822. A synonym of *Aciotis fragilis*.
— *glandulosa*. See *Pleroma glandulosa*.
— *paludosa*. 2. Rose. June. Brazil. 1825. A synonym of *Aciotis paludosa*.
— *pendulifolia*. 2. Rose. March. Guiana. 1826. A synonym of *Aciotis pendulifolia*.

Spe'rgula. Spurrey. (From *spargo*, to scatter; in allusion to the scattering of the seeds. Nat. ord., *Caryophyllaceæ*; Tribe, *Alsineæ*.)

Hardy annual herbs. To raise from seed, sow in May. To establish an edging in place of grass, from plants, plant patches in September about two inches apart. They require to be frequently beaten flat with the back of the spade. It seems too apt to become patchy to be relied

upon for any extensive surface, like a lawn. *S. arvensis* has proved a satisfactory crop, on light sandy soils, for conversion into ensilage.

S. arvensis. 1-2. White. Summer. Britain.
— *pilifera* and its variety *arvensis* are now referred to *Sagina pilifera*.

Spermaco'ce. Button Weed. (From *sperma*, a seed, and *akoke*, a point; the pointed calyx teeth crown the fruit. Nat. ord., *Rubiaceæ*; Tribe, *Spermatococceæ*.)

A large genus of stove, greenhouse and hardy herbs or shrubs, of which but few species have been introduced into cultivation.

S. Bruno'nis. See *Knozia brachycarpa*.
— *hirta*. Jacq. Ic. t. 308. See *Mitracarpum hirtum*.

— *stricta*. 2. White. July. Porto Rico. Syn., *Borreria stricta*.

— *sumatrensis*. A synonym of *Knozia sumatrensis*.

— *verticillata*. 1-2. White. July. West Indies and Mexico. Syns., *Borreria commutata* and *B. verticillata*.

Spermadi'ctyon. (From *sperma*, a seed, and *dictyon*, a net. Nat. ord., *Rubiaceæ*; Tribe, *Pederialaceæ*.) A synonym of **Hamiltonia**.

Stove evergreen shrubs.

S. azureum. B. R. t. 1235. A synonym of *Hamiltonia scabra*.

— *suaveolens*. B. R. t. 348. A synonym of *Hamiltonia suaveolens*.

Spermaxy'rum. (From *sperma*, a seed, and *xuros*, shaven. Nat. ord., *Olaecineæ*.) A synonym of **Olaex**.

S. strictum. A synonym of *Olaex stricta*.

Spha'cele. (A Greek name for some *Salvia*. Nat. ord., *Labiatae*; Tribe, *Satureineæ*. Allied to *Horminium*.)

A handsome free-flowering herbaceous perennials, requiring the same treatment as the more tender species of *SALVIA*, and the temperature of a warm greenhouse.

S. caerulea. Light blue. Summer. 1866. Flor. Mag. t. 281.

— *campanulata*. 2-3. Pale blue. July. Chili. 1795. B. R. t. 1382.

— *Lindleyi*. 3-4. Purplish-violet. July. Chili. 1825. B. M. t. 2993. Syn., *Stachys Salvia*. B. R. t. 1226.

Spha'ralcea. (From *sphaera*, a globe, and *alcea*, the Marsh Mallow; the seedpods, or carpels, are in globular heads. Nat. ord., *Malvaceæ*; Tribe, *Malvaceæ*. 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. abutiloides. A synonym of *Malva abutiloides*.
— *acerifolia*. Rose. N. W. America. 1863. B. M. t. 5404. Half-hardy.

— *angustifolia*. 2. Pink. August. Mexico. 1780. Syn., *Malva angustifolia*. B. M. t. 2544.

— *caroliniana*. See *Modiola caroliniana*.
— *decumbens*. See *Modiola decumbens*.

— *elegans*. 3. Red. July. Cape of Good Hope. 1791. Syn., *Malva elegans*.

- S. Emo'ryi*. 1-2. Orange-red. Summer California. 1888. Gfl. t. 1266, fig. 1.
 — *minia'ta* 4. Red. June. S. America. 1798. B. M. t. 5936. Syn., *Malva miniata*.
 — *nutans*. Purple. Guatemala. 1852. Fl. Ser. t. 726.
 — *obtusilo'ba*. 4. Purple. July. Chili. 1827. Syn., *Malva obtusiloba*. B. M. t. 2787.
 — *prostra'ta*. See *Modiola prostrata*.
 — *umbello'ta*. See *Malva umbellata*.

Sphæro'gyne. (From *sphaira*, a globe, and *gyne*, a female; shape of female organ. Nat. ord., *Melastomaceæ*; Tribe, *Miconiææ*.) A synonym of **To-coca**.

Stove shrubs. For cultivation, see CENTRADIENIA.

- S. cinnamo'mea*. Costa Rica. 1866.
 — *ferrugi'nea*. A synonym of *Toococa ferruginea*.
 — *imperia'lis*. A synonym of *Toococa imperialis*.

Sphærolo'bium. (From *sphaira*, a globe, and *lobos*, a pod; the pods are globose. Nat. ord., *Leguminosæ*; Tribe, *Podalyriææ*.)

Greenhouse, evergreen shrubs. Soil, a compost of loam and peat. Propagated by cuttings in sand, under a bell-glass.

- S. acumina'tum*. See *S. medium*.
 — *me'dium*. 2. Red or orange. Summer. Australia. 1803. Syn., *S. acuminatum*.
 — *vimi'neum*. 2. Yellow. Summer. Australia. 1802. B. M. t. 969.

Sphærophy'sa. (From *sphaira*, a globe, and *physa*, a bladder; the pods are globose and bladder-like. Nat. ord., *Leguminosæ*; Tribe, *Galegeææ*.)

Hardy, perennial herb or sub-shrub. Sandy loam, with an occasional application of salt. Seeds.

- S. ca'spica*. See *S. salsula*.
 — *sa'lsula*. 1½. Pale purple. July. Russia and Northern Asia. 1818. Syn., *S. caspica*.

Sphæro'pteris. (From *sphaira*, a globe, and *pteris*, a fern; the involucre are globose. Nat. ord., *Filices*.)

Stove fern. For culture, see FERNS.

- S. barba'ta*. 3. Northern India. Syn., *Pernema cyatheoides*.

Sphæroste'ma. (From *sphaira*, a globe, and *stema*, a stamen; stamens collected into close clusters. Nat. ord., *Magnoliaceæ*; Tribe, *Schizandreaæ*.) A synonym of **Schizandra**.

Stove evergreen climbers. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom heat: sandy, fibry peat, fibry loam, with a little charcoal and broken pots, and well drained. Winter temp., 45°; summer, 60° to 80°. A lower temperature even might be tried in winter, if the wood was well ripened.

- S. marmo'ratum*. See *Schizandra marmorata*.
 — *prop'i'ngum*, B. M. t. 4614. See *Schizandra propinqua*.

Sphærosti'gma. (From *sphaira*, a globe, and *stigma*, the female organ. Nat. ord., *Onagraceæ*.) A synonym of **Ænothera**.

Hardy biennials and annuals, by seeds in the open border, in April; *cheiranthifo'lium* by cuttings of young shoots in spring

- S. Chamisso'nis*. 1. Yellow. August. Russia. 1837. Annual. A synonym of *Ænothera dentata*.
 — *cheiranthifo'lium*. See *Ænothera cheiranthifolia*.
 — *hi'rturn*. A synonym of *Ænothera dentata*.
 — *minutifo'lrum*. 1. Yellow. August. Russia. 1837. Annual. A synonym of *Ænothera minutiflora*.

Spha'gnum. This is a genus of pale green-leaved Mosses, becoming white when dry, commonly found on peat-bogs. There are several British species, the commonest of which is *Spha'gnum cymbifo'lrum*. 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 extremely useful for placing on the surface of pots containing plants, which thrive in damp situations, as is the case with certain Orchids.

Sphen'a'ndra. (From *sphen*, a wedge, and *aner*, *andros*, a male or anther; the anthers are wedge-shaped. Nat. ord., *Scrophulariaceæ*; Tribe, *Manuleæ*.)

Greenhouse annual or perennial herb. Loamy soil. Seeds.

- S. visco'sa*. 1. Violet. June. South Africa. 1773. Syn., *Buchnera viscosa*. B. M. t. 217.

Sphenode'sma. (From *sphen*, a wedge, and *desme*, a bundle; referring to the shape of the inflorescence. Nat. ord., *Verbenaceæ*; Tribe, *Symphoremææ*.)

Stove, climbing shrubs. Cuttings in sand, under a bell-glass, in heat.

- S. Jackia'na*. See *S. pentandra*.
 — *penta'ndra*. 6. Purple, white. June. East Indies. 1823. Syn., *S. Jackiana*.

Sphen'o'gyne. (From *sphen*, a wedge, and *gyne*, female organ; the shape of pistil. Nat. ord., *Compositæ*; Tribe, *Arctotideææ*.) See **Ursinia**.

All yellow-flowered, and natives of South Africa. Annuals, by seed, under protection in April, or in the open border in the end of May; shrubs, by cuttings of young shoots in sand, under a bell-glass, in a cool pit, in May; loam and peat, sandy and fibry. Winter temp., 40° to 45°.

- S. abrotanifo'lia*. See *Ursinia abrotanifolia*.
 — *anthemoi'des*. See *Ursinia paradoxa*.
 — *crithmifo'lia*. B. M. t. 3042. See *Ursinia crithmifolia*.
 — *dent'a'ta*. See *Ursinia dentata*.
 — *foenicula'cea*. See *Ursinia foeniculacea*.
 — *leucanthe'moi'des*. See *Ursinia leucanthe-moides*.
 — *odora'ta*. See *Ursinia odorata*.
 — *pili'fera*. B. R. t. 604. See *Ursinia pilifera*.
 — *scario'sa*. See *Ursinia scariosa*.
 — *serra'ta*. See *Ursinia serrata*.
 — *specio'sa*. Kn. and West. t. 77. See *Ursinia speciosa*.

Spheno'toma. (From *sphenoo*, to cleave, and *tome*, a section; limb or border of the flower deeply cut. Nat. ord., *Epacridæ*; Tribe, *Epacreae*.) See **Dracophyllum**.

Greenhouse, white-flowered evergreens, from Australia. Cuttings of young shoots when a couple of inches in length, provided they are getting a little firm at the base, in sand, under a bell-glass, in spring; sandy, fibry peat, with a little charcoal. Winter temp., 38° to 45°; might be tried in a very sheltered rock-work, among peat and broken freestone.

S. capitatum. B. R. t. 1515. See *Dracophyllum capitatum*.

— *gracile*. See *Dracophyllum gracile*.

Sphinctaca'nthus. (Derivation not given. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*.)

Greenhouse herb, requiring a light loamy soil. *S. Griffithii*. White, purple. October. South Africa. 1774. Syn., *Justicia orchoides*, B. C. t. 827.

Spice Bush. *Linde'ra Benzoi'n.*

Spider Flower. *Cle'ome.*

Spider Orchis. *O'phrys arani'fera.*

Spiderwort. *Tradescan'tia.*

Spielma'nnia. (Named after J. R. Spielmann, a German botanist. Nat. ord., *Myoporineæ*.) See **Oftia**.

Greenhouse, evergreen shrub.

S. africa'na. B. M. t. 1899. See *Oftia africana*.

Spige'lia. Worm Grass. (Named after A. Spigelius, a botanist of Padua. Nat. ord., *Loganiaceæ*; Tribe, *Euloganiææ*.)

Annuals, by seed under the usual treatment; hardy herbaceous, by seed and division of the roots; loam and peat.

S. anthel'mia. 1½. Red. July. S. America. 1759. Stove annual. B. M. t. 2359.

— *marita'ndica*. 1. Scarlet. July. N. America. 1694. Hardy herbaceous. B. M. t. 80.

— *splendens*. Scarlet. Central America. Stove perennial. B. M. t. 5268.

Spikenard or Nard. *Nardo'sta'chys.*

Spikenard, Ploughman's. *Ba'ccharis.*

Spila'nthes. (From *spilos*, a spot, and *anthos*, a flower; the species on which the genus was founded has the disk appearing like a brown spot in the centre of the yellow flower. Nat. ord., *Compositæ*; Tribe, *Helianthoidææ*.)

S. crocata. B. M. t. 1627. See *Verbesina crocata*.

— *exaspera'ta*. 2. Yellowish. Venezuela. Jacq. Ic. t. 584.

— *olera'cea*. 1. Yellow. India and S. America. Jacq. H. Vind. t. 135. Sometimes regarded as a variety of *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 far 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 pulverized 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 fertilizing matters, the greater the benefit.

Sow 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 four or five inches apart, and the round-leaved to eight. 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 twelve inches apart. Spinach is diœcious, 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, previous to its being beaten out and stored.

Spinach, Mountain. *Atriplex hortensis*.

Spinach, New Zealand. *Tetragonia expansa*.

Spinach, Wild. *Chenopodium Bo'nus-Henri'cus*.

Spinacia. Spinach. (From *spina*, a prickle; seeds prickly. Nat. ord., *Chenopodiaceae*; Tribe, *Atriplicae*.)

Hardy, green-flowered annual. See SPINACH. *S. oleracea*. 1½. June. South-east Europe. 1568.
— *glabra*. 1½. June. Round-seeded, or Summer Spinach.
— *spinosa*. 1½. June. Prickly-seeded, or Winter Spinach.

Spindle-Tree. *Eucalyptus*.

Spinovitis. (From *spinus*, spiny, and *vitis*, a vine. Nat. ord., *Ampelideae*.)

A climbing plant, resembling the vine, but having its stem covered with spines. Propagated by seeds.

S. Davidii. Green. North China. Rev. Hort. 1885, p. 55, fig. 10.

Spiræa. (From *speira*, anything wreathed; the flowering branches used in garlands. Nat. ord., *Rosaceae*; Tribe, *Spiræeae*.)

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. filipendula. 2. September. Britain. Eng. Bot. ed. 3, t. 416.
— *minor*. 1½. August. Europe.
— *pubescens*. 1½. August. France.

HARDY HERBACEOUS.

S. aruncus. 4. June. Siberia. 1633.
— *america'na*. 4. June. N. America.
— *astilboides*. 1½. White. July. Japan. 1880.
— *barbata*. B. R. t. 2011. See *Astilbe japonica*.
— *denudata*. July. South Europe.
— *digitata*. 2. Red. July. Siberia. 1823.
— *laziflora*. See *S. vacciniifolia*.
— *lobata*. 2. Red. July. N. America. 1765.
— *palmaria*. 2. Red. July. China. 1823. B. M. t. 5726.
— *alba*. White. Leaves light green. 1882.
— *rotundifolia*. June. Cashmere. 1840.
— *alba*. White. 1884.
— *ulmaria*. 2. August. Britain. Eng. Bot. ed. 3, t. 415.
— *multiflex*. 2. August. Britain.
— *phyllantha*. A form with abnormal

flowers, in which the sepals are leafy, and the petals and stamens absent or deformed.

S. ulmaria variegata. 2. July. Britain.
— *ulmifolia*. 3. June. Carniola. 1790.
— *phyllantha*. 3. June.
— *uralensis*. 4. April. Uralia. 1817.
— *vacciniifolia*. July. India. 1820. B. C. t. 1403. Syn., *S. laziflora*.

HARDY DECIDUOUS SHRUBS.

S. acutifolia. See *S. hypericifolia*, var. *acuta*.
— *alpina*. 3. July. Siberia. 1806.
— *amurensis*. Gf. t. 489. See *Neillia amurensis*.
— *argentea*. Nepal.
— *aricefolia*. 8. June. N. America. 1827.
— *bella*. 2. Red. July. Nepal. 1820. B. M. t. 2426.
— *betulifolia*. 2. Pink. June. N. America. 1812. Wats. Dendr. t. 67.
— *Boursierii*. See *S. discolor*, var. *dumosa*.
— *bullata*. 1½. Dark pink. Summer. Japan. 1882. Syn., *S. crispifolia*.
— *Bumalda*, var. *ruberriima*. A hybrid between *S. Bumalda* and *S. bullata*. 1891.
— *ca'na*. 1½. June. Hungary. 1825.
— *canescens*. Nepal. 1879.
— *capitata*. 3. June. Columbia. 1826.
— *ceanothifolia*. 2. June. 1823.
— *chamedrifolia*. 4. June. Siberia. 1789.
— *flexuosa*. 4. June. E. Siberia. 1820. Syn., *S. flexuosa*.
— *inci'sa*. 1½. June. Germany.
— *me'dia*. 1½. June. Germany.
— *oblongifolia*. 3. June. Hungary. 1816.
— *subracemosa*. 1½. June.
— *ulmifolia*. 5. White. June. Siberia. 1790. Syn., *S. chamedrifolia* of B. R. t. 1222.
— *vulgaris*. 1½. July.
— *chine'nsis*. 5. White. March. Chusan. 1843. Syn., *S. pubescens*, B. R. 1847, t. 38.
— *confusa*. See *S. media*.
— *corymbosa*. 1½. July. Virginia. 1819. B. C. t. 671.
— *sororia*. 2. August. N. America. 1829.
— *crataegifolia*. 3. July. Siberia. 1812.
— *crenata*. 2. April. Podolia. 1739. B. C. t. 1252.
— *crispifolia*. See *S. bullata*.
— *cuneifolia*. 3. India.
— *decumbens*. 1½. White. August. Europe.
— *discolor aricefolia*. 8. Dirty white. Summer. N. W. America. 1827. Syn., *S. aricefolia*.
— *dumosa*. Smaller than *S. discolor*. Syn., *S. Boursierii* and *S. dumosa*.
— *dumosa*. See *S. discolor*, var. *dumosa*.
— *expansa*. 3. Pink. June. Kamoon. 1846.
— *flagellata*. See *S. hypericifolia*.
— *flexuosa*. See *S. chamedrifolia*, var. *flexuosa*.
— *gigantea*. See *S. kamtschatica*.
— *grandiflora*. B. M. t. 4795. See *Ezochorda grandiflora*.
— *hypericifolia*. 5. April. N. America. 1640. Syn., *S. flagellata*.
— *acuta*. 4. May. Siberia. 1817. Syn., *S. acutifolia*.
— *Besseria'na*. Corymbs lax. B. C. t. 1252.
— *crenata*. Leaves obovate.
— *Plunkenetia'na*. April. Canada.
— *thalictroides*. 2. June. Dahuria. 1806. Syn., *S. thalictroides*.
— *inci'sa*. White. China. 1875.
— *kamtschatica*. 4-10. June. N. America. 1830. Syn., *S. gigantea*.
— *himale'nsis*. 2. June. N. India. 1838. B. R. 1841, t. 4.
— *laevigata*. 4. Red. May. Siberia. 1774.
— *lancoolata*. Mauritius.
— *me'dia*. 4. White. June. N. Asia. Syn., *S. confusa* and *S. oblongifolia*.

- S. me dia rotundifolia*. Pure white. Japan. 1885.
 — *obovata*. 3. June. Hungary. 1816.
 — *opulifolia*, with its varieties, *heterophylla* (Gf. 1890, p. 9), *hi tea*, and *tomentella*, are now referred to *Neillia opulifolia*.
 — *Pickovien sis*. 4. June. Podolia. 1807.
 — *prunifolia flore-pleno*. 6. March. China. 1844. Fl. Ser. t. 153-4.
 — *pubescens*. White. North China. 1888. Gard. and For. 1888, i. p. 330, fig. 52.
 — *pubescens* of Lindley, B. R. 1847, t. 38. See *S. chinensis*.
 — *salicifolia*. 5. July. Britain.
 — *alpestris*. 5. July. Russia. 1820.
 — *carnea*. 5. Flesh. July. Britain.
 — *grandiflora*. 4. Pink. July. Kamtschatka. 1827.
 — *latifolia*. 5. July. Europe.
 — *paniculata*. July. N. America.
 — *savranica*. 4. April. Podolia. 1819.
 — *sorbifolia*. 4. August. Siberia. 1759.
 — *alpi na*. 3. August. Siberia. 1817.
 — *Palla'sii*. White. 1874.
 — *thalictroides*. See *S. hypericifolia*, var. *thalictroides*.
 — *tobolskia*. 4. June. Russia. 1823.
 — *tomentosa*. 5. August. N. Amer. 1736.
 — *trubovata*. 3. May. Altai. 1801. B. C. t. 1271; Wats. Dendr. t. 68.

HARDY EVERGREEN SHRUBS.

- S. cantoniensis*. 4. White. Summer. China and Japan. 1843. Fl. Ser. t. 1097. Syn., *S. Reevesiana*.
 — *Douglasii*. Rose. August. Columbia. Paxt. Mag. xii. p. 195.
 — *fissa*. 3. November. Mexico. 1841.
 — *Lindleyana*. Himalayas. B. R. 1845, t. 33.
 — *Nobleana*. See *S. Douglasii*.
 — *Reevesiana*. B. R. 1844, t. 10. See *S. cantoniensis*.

GREENHOUSE EVERGREEN SHRUBS.

- S. callosa*. See *S. japonica*.
 — *Fortunei*. See *S. japonica*.
 — *japonica*. 6. Rosy-red. June. China and Japan. 1859. Syns., *S. callosa* and *S. Fortunei*. B. M. t. 5164. See also *Astilbe japonica*.
 — *alba*. 1. White. Syn., *S. callosa*, var. *alba*.
 — *rubra*. Dark red. 1862.
 — *splendens*. Peach-coloured. Syns., *S. callosa*, var. *rosea*, *S. hydrangeifolia* and *S. splendens*.
 — *superba*. Deep rose-red. Syn., *S. callosa*, var. *superba*.

Spiranthe ra. (From *spira*, spiral, and *anthera*, an anther; twisted anthers. Nat. ord., *Rutaceae*; Tribe, *Cuspariacee*.)

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 fibry peat. Winter temp., 50° to 60°; summer, 60° to 80°.

- S. odoratissima*. 6. White, red. Brazil. 1823.

Spiranthes. Lady's Tresses. (From *spira*, spiral, and *anthos*, a flower; flowers arranged spirally. Nat. ord., *Orchideae*; Tribe, *Neottia-Spirantheae*. Allied to *Neottia*.)

Stove terrestrial, greenhouse or hardy orchids, grown in pots. See ORCHIDS.

- S. aestivalis*. 1. White. July. Britain. Eng. Bot. ed. 3, t. 1473. Syn., *Neottia spiralis*. B. C. t. 981. Hardy.
 — *albescens*. Green, brown. Columbia. 1885. Syn., *S. leucosticta*.

- S. argentea*. White. April. Brazil. 1848.
 — *au'rea*. Olive, brown. April. Guatemala. 1842.
 — *australis*. 1. White, pink. June. Australia. Syns., *S. pudica* and *Neottia australis*. Greenhouse.
 — *autumnalis*. 3. White. August. Britain. Eng. Bot. ed. 3, t. 1472. Hardy.
 — *bicolor*. 1. Greenish. January. Trinidad. 1823. Syn., *Neottia bicolor*. B. R. t. 794.
 — *bracteosa*. 1. White, yellow. May. St. Catherine's, Brazil. 1835. B. R. t. 1934.
 — *cernua*. 1-1½. White. September. North America. 1796. Syn., *Neottia cernua*. B. M. t. 1568. Hardy. See also *S. picta*.
 — *cinnabarina*. 2-3. Yellowish. June. Mexico. 1846. Syn., *Stenorrhynchus cinnabarinus*. B. R. 1847, t. 65. Greenhouse.
 — *colorata*. 2. Scarlet. April. West Indies and Central America. 1790. Syns., *S. colorans*, *Neottia speciosa*, B. M. t. 1374, and *Stenorrhynchus speciosus*. Greenhouse.
 — *maculata*. Leaves with bright green spots. 1833.
 — *Ortgiesii*. Rose. Leaves blotched with white.
 — *diuretica*. Green, white. August. Valparaiso. 1838. Syn., *Sarcoglottis diuretica*.
 — *elata*. 2. Greenish. July. West Indies. 1790. Syns., *Neottia elata*, B. M. t. 2026, and *N. minor*, Andr. Rep. t. 376.
 — *Lindleyana*. Leaves dark green, banded with white. S. America. 1861. Syn., *S. Lindleyana*.
 — *Esmeralda*. Whitish; leaves spotted with white. S. Brazil. Ref. Bot. t. 121. Syns., *S. margaritifera* and *Habenaria margaritacea*.
 — *Esseri*. Grey, green. Central America. 1863. Syn., *Sarcoglottis Esseri*.
 — *euphobia*. 1. White, red, brown. November. Brazil. 1882. B. M. t. 6690.
 — *gemmipara*. See *S. Romanzoviana*.
 — *grandiflora*. Greenish. September. Brazil. B. R. t. 1043. Syns., *S. picta*, var. *grandiflora* and *Neottia grandiflora*. B. M. t. 2730.
 — *leucosticta*. See *S. albescens*.
 — *margaritifera*. See *S. Esmeralda*.
 — *orchioides*. 2-3. Purplish. November. Tropical America. 1826. Syn., *Neottia orchioides*. B. M. t. 1036.
 — *picta*. 1-2. Greenish. February. West Indies. 1843. Syn., *S. cernua* of B. R. t. 823.
 — *grandiflora*. See *S. grandiflora*.
 — *variegata*. White. Leaves variegated. Syns., *Neottia acutis* and *N. picta*. B. M. t. 1562.
 — *Romanzoviana*. 3. White. August. Britain. G. C. 1881, xvi. p. 465, fig. 86. Syn., *S. gemmipara*. Eng. Bot. ed. 3, t. 1474. Hardy.
 — *Sauroglossum*. 1½. Green. April. Brazil. 1832. Syn., *Sauroglossum clatum*, B. E. t. 1618.
 — *Smitthii*. Yellow and green, or brownish and green. Costa Rica. 1868.
 — *Weirii*. Reddish. Columbia. 1870.

Spire Lily. *Galtonia candicans*.

Spirone'ma. (From *spira*, spiral, and *nema*, a filament; stamens spiral. Nat. ord., *Commelinaceae*; Tribe, *Tradescantieae*. Allied to *Tradescantia*.)

Greenhouse herbaceous. Seeds, and division of the roots; sandy, fibry peat and loam. Winter temp., 45° to 55°; summer, 60° to 80°.

S. fragrans. 1. White. May. Mexico. 1839.
B. R. 1840, t. 47.

Spleenwort. *Asplenium*.

Sp'ondias. Hog Plum. (The ancient name of a wild Plum; resemblance of fruit. Nat. ord., *Anacardiaceæ*; Tribe, *Spondiææ*.)

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. acuminata. June. Malabar. 1824.

— *axillaris*. See *S. lutea*.

— *borbonica*. 40. Deep purple. Bourbon. 1825.

— *dulcis*. 50. Yellowish-green. June. Society Islands. 1793. Syn., *Poupartia dulcis*. Sweet Otaheite apple.

— *lutea*. 30. Yellowish. Summer. West Indies. 1739. Syns., *S. azillaris*, *S. Mombin*, *S. Myrobalanus* and *S. purpurea*. Golden Apple; Jamaica Plum.

— *mangifera*. 30. White. East Indies. 1820. Syn., *Poupartia mangifera*.

— *Mombin*. See *S. lutea*.

— *myrobalanus*. See *S. lutea*.

— *purpurea* of Miller, not Linnæus, see *S. lutea*.

Sponge Tree. *Acacia farnesiana*.

Spongiole. A term formerly used for the tips of roots, it being supposed that these slightly swollen tips acted in a sponge-like manner in absorbing food for the plant. It is now known that they are organs to protect the growing point of the root and are called root-caps or pileorhizæ, while absorption of food is effected by the root-hairs.

Sporangium or Sporange. The cases in which the spores or ultimate reproductive bodies are inclosed in Cryptogams or flowerless plants. For a description of the sporangia of Ferns, see **Sorus**.

Spore or Sporidium. The bodies by which cryptogamic plants are reproduced. The term is now restricted to such bodies as are produced by sexual agency; nonsexual reproductive organs are variously called *gemmæ*, *conidia*, *gonidia*, etc. Spores are generally minute, but differ much in form and structure.

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 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. (Named after Isaac Sprague, an American botanical draughtsman. Nat. ord., *Portulacææ*.)

Hardy perennial, adapted for rockwork and edge of flower borders. Cuttings in spring.

S. umbellata. White, purple. July. California. 1859. B. M. t. 5143.

Spread Eagle. *Oncidium carthagineum*.

Spreke'lia. (Named after Dr. Sprekel, a German botanist. Nat. ord., *Amaryllidææ*; Tribe, *Amaryllidææ*.)

This is the name for the old *Amaryllis formosissima*, or Jacobæa Lily, not of Dr. Herbert, but of Heister, a German botanist; and Dr. Herbert had some doubts latterly of its correctness. Stove bulbs. For culture, see HIPPEASTRUM.

S. Cybister, B. M. t. 3872, and var. *brevis*, B. R. 1840, t. 33. See *Hippeastrum Cybister*.

— *formosissima*. †. Crimson. June. Guatemala. 1658. Swt. Fl. Gard. ser. 2, t. 144. Syn., *Amaryllis formosissima*, B. M. t. 47.

— *glauca*. 1. White. April. Bolivia. 1839. Syn., *S. glauca*. B. R. 1841, t. 16.

— *ringens*. Crimson, green. Flowers drooping.

— *glauca*. See *S. formosissima*, var. *glauca*.

Spreng'lia. (Named after C. Sprengel, naturalist. Nat. ord., *Epacridææ*; Tribe, *Epacraææ*. Syn., *Poncelétia*.)

Greenhouse evergreens. 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. Andersoni. See *Andersonia sprengelioides incarnata*. 2. Flesh. May. N. S. Wales. 1793. B. M. t. 1719.

— *Poncelétia*. 1. Scarlet. May. Extra-tropical Australia. 1826. Syn., *Poncelétia sprengelioides*.

Spring Beetles. The *Elatridææ*, a group of insects, one phase of whose life is known as the **Wireworm**, which see.

Spring Bell. *Sisyrinchium grandiflorum*.

Spring Grass. *Anthoxanthum*.

Spring Snowflake. *Leucorum vernum*.

Spruce Fir. *Dacrydium cupressinum*, also some species of *Picea*.

Spruce Gall. See *Adeleges abietis*.

Sprue. A market name for the smallest sprouts of asparagus.

Spurge Flax. *Da'phne Meze'reum*.

Spurge Laurel. *Da'phne laure'ola*.

Spurge Nettle. *Ja'tropha u'rens*.

Spurge Olive. *Cneo'rum trico'ccum* and *Da'phne Meze'reum*.

Spurgeworts. The *Euphorbia'cea*.

Spurless Violet. *Vi'ola heder'a'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 *spyris*, a basket; application not apparent. Nat. ord., *Rhamnaceæ*; Tribe, *Rhamnecæ*.)

Tall greenhouse shrub. For cultivation, see POMADERIS, to which it is allied.

S. globulo'sum. West Australia. 1874. Gf. t. 795. Syn., *Pomaderris globulosa*.

Squash. (*Cucu'rbita melope'po*.) See **Cucurbita**.

Squill, Roman. *Hyac'inthus romanus*.

Squill, Scilla.

Squill, Striped. *Puschki'nia scilloides*.

Squinant. *Andro'pogon Schaena'nthus*.

Squirrel-tail Grass. *Ho'rdeum*.

Squirting Cucumber. *Ecba'lium Elate'rium*.

Staa'via. (Named after *M. Staa*, a correspondent of Linnæus. Nat. ord., *Bruniaceæ*.)

Greenhouse, white-flowered evergreens, from South Africa. Cuttings of young shoots in sand, under a bell-glass; sandy, fibry peat. Winter temp., 38° to 45°.

S. cilia'ta. 1½. June. 1812. Syn., *Brunia ciliata*.

— *glutino'sa*. 1½. April. 1793. B. C. t. 852. Syn., *Brunia glutinosa*.

— *radia'ta*. 1. May. 1787. Syn., *Brunia radiata*.

Stachys. Hedge Nettle. (From *stachys*, a spike; their manner of flowering. Nat. ord., *Labiataæ*; Tribe, *Stachydecæ*.)

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*. 1. Purple. July. Caucasus. 1818.
— *palcesi'na*. 1. Purple. July. Syria. 1820.
— *stenophylla*. 1. Yellow. July. Spain. 1823.
Syn., *Sideritis linearifolia*.

GREENHOUSE EVERGREENS.

- S. coccine'a*. 2. Scarlet. Summer. Mexico.
Jacq. H. Schoenb. t. 284.
— *Lama'rckii*. Yellow. July. Cape of Good Hope. 1820. Syn., *Sideritis decumbens*.
— *rugosa*. 2. Pale yellow. July. Cape of Good Hope. 1774. Jacq. Ic. t. 409.

HARDY HERBACEOUS.

- S. albicaulis*. 3. Violet. Summer. Andes of Chili. B. R. t. 1558.
— *alopecurus*. 1½. Red. July. South Europe. 1759.
— *alpi'na*. 2. Reddish-purple. Summer. South Europe.
— — *intermedia*. A large variety. Syn., *S. siberica*. Swt. Fl. Gard. t. 100.
— *angustifolia*. ¾. Purple. July. Tauria. 1823. Swt. Fl. Gard. t. 180.
— *arenaria*. 1. Purple. July. Levant. 1804. B. M. t. 1959. Syn., *S. rubra*.
— *aspera*. 4. Purple or rosy-red. Summer. North America. B. C. t. 1412.
— *Balbisii*. See *S. pubescens*.
— *Betonica*. ½-2. Red-purple. Summer. Britain. Eng. Bot. ed. 3, t. 1067. Syn., *Betonica officinalis*. Wood Betony; Bishop's Weed.
— *densiflora*. 1½. Flesh-colour. June. South Europe. 1759. Syns., *Betonica hirsuta* and *B. incana*. B. M. t. 2125.
— *fensiculum*. A synonym of *Lophanthus anisatus*.
— *germanica*. 1-3. Pale pink, white. Summer Britain. Eng. Bot. ed. 3, t. 1068; B. R. t. 1289. Syn., *S. orientalis*.
— — *pubescens*. 2. Purple. August. Germany. 1826.
— *glutinosa*. 1. Purple. June. Candia. 1729.
— *grandidentata*. 1-3. Violet. Summer. Chili. B. R. t. 1050.
— *grandiflora*. 1½. Purple. May. Siberia. 1800.
— *hirsuta*. } Synonyms of *S. densiflora*.
— *incana*. }
— *inflata*. 1½. Red. July. Persia. 1852. B. R. t. 1697.
— *italica*. 6. Purple. June. Europe. Syn., *S. salvicaefolia*.
— *lana'ta*. 2. Striped. July. Siberia. 1782.
— *macrou'ra*. 1. Pale red. July. Europe. 1820.
— *Mawea'na*. Sulphur-yellow, spotted purple. Morocco. 1878. Hardy herbaceous.
— *menthifolia*. Yellow. July. Dalmatia. 1838.
— *nive'a*. 1. Red. July. Caucasus. 1820.
— *officinalis*. 1. Purple. August. Britain.
— *alba*. 1. White. August. Britain.
— *orientalis*. Sibth. Fl. Gr. t. 560. See *S. germanica*.
— *pubescens*. Yellowish. July. Europe. 1816. Syn., *S. Balbisii*.
— *re'cta*. 2. Yellow. July. South Europe. 1683. Syn., *Sideritis hyssopifolia*.
— *rubra*. See *S. arenaria*.
— *Salvica*. B. R. t. 1226. See *Sphacel Lindleyi*.
— *salvicaefolia*. See *S. italica*.
— *serice'a*. 1. Lilac. August. Nepaul. 1830.
— *serotina*. 1½. Red. August. Austria. 1832.
— *setifera*. 1½. Red, brown. Caucasus. 1837.
— *speciosa*. 4. Scarlet. July. Mexico. 1839. Syn., *Gardaquia elliptica*.
— *stri'cta*. 1½. Purple. June. Denmark. 1592.

S. tuberi'fera. North China. 1887. See G. C. 1888, iii., pp. 13 and 16. This species produces edible tubers.

Stachyta' rpheta. Bastard Vervain. (From *stachys*, a spike, and *tarphaios*, dense; mode of flowering. Nat. ord., *Verbenaceæ*; Tribe, *Verbenacæ*. 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°. *S. mutabilis* is very interesting.

STOVE EVERGREENS.

- S. arista'ta*. 2. Purple. September. S. Amer. 1845. B. M. t. 4211.
 — *bi'color*. Blue, white. Brazil. 1865.
 — *cæru'lea*. 2. Deep blue. July.
 — *cayenne'nsis*. 3. Blue. May. Cayenne. 1822.
 — *crassifo'lia*. Violet. June. Brazil. 1826.
 — *hi'rtta*. Violet. July. New Grenada. 1831.
 — *muta'bilis*. 3. Orange. June. S. Amer. 1801. B. M. t. 976. Syn., *Verbena mutabilis*.

STOVE BIENNIALS.

- S. dichotoma*. 2. Blue. June. South Amer. Syn., *S. urticifolia*. B. M. t. 1848.
 — *elatior*. Violet. October. Brazil. 1821.
 — *jamaic'ensis*. 2. Blue. July. W. Ind. 1714. B. M. t. 1860.
 — *ori'bica*. 3. Violet. July. Panama. 1699. Annual.
 — *prisma'tica*. 2. Blue. May. W. Ind. 1699.
 — *umbro'sa*. Blue. May. Cumana. 1829.
 — *urticifo'lia*. See *S. dichotoma*.
 — *Zucca'gni*. Rose, violet. June. 1824.

Stachy'rus. (From *stachys*, a spike, and *euros*, broad. Nat. ord., *Ternstroemiaceæ*; Tribe, *Saraujæcæ*.)

Half-hardy evergreen shrub. Cuttings of the points of shoots in sand, under a bell-glass, in April; fibry, sandy loam and a little peat. Winter temp., 35° to 45°.

- S. præ'cox*. Pink. April. Japan. Sieb. Fl. Jap. t. 18.

Stackhou'sia. (Named after Mr. Stackhouse, a British botanist. Nat. ord., *Stackhousiæcæ*.)

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. linariæfo'lia*. 2. 1823. Evergreen.
 — *mono'gyna*. 1. Pink. April. 1835. B. R. t. 1917. Hardy herbaceous.
 — *spathula'ta*. White. April. 1825. Evergreen.

Stadma'nnia. (Named after M. Stadmann, a botanical traveller. Nat. ord., *Sapindacææ*; Tribe, *Sapindæcæ*.)

Stove evergreen tree. Allied to *NEPHELIUM*, to which refer for cultivation.

- S. ama'bilis*. Zanzibar. 1873.

Stæheli'na. (Named after B. Stæhelin, a Swiss botanist. Nat. ord., *Compositææ*; Tribe, *Cynaroideæ*. Allied to *Arctium*.)

Half-hardy, purple-flowered, deciduous shrubs. Cuttings in sandy soil, under a hand-light, in

summer; sandy, fibry loam and leaf-mould; require the protection of a cold pit in winter.

- S. arbore'scens*. 4. August. Candia. 1739. Sibth. Fl. Gr. t. 845.
 — *chamæpe'ce*. 2. July. Candia. 1640. Sibth. Fl. Gr. t. 847.
 — *du'bia*. 3. June. South Europe. 1640.
 — *gnaphal'odes*. A synonym of *Helipterum gnaphaloides*.

Staff-Tree. *Cela'strus*.

Stag Beetle. *Luca'nus ce'rurus*.

Standard. A tree unsupported by a wall or trellis.

Full Standards are such trees as are trained with tall, straight stems, six or seven feet high, clear of branches, and are then suffered to branch out.

Half Standards are trees trained with short stems only two or three 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. (Named after Dr. Stanger, of Natal. Nat. ord., *Cycadacææ*; Tribe, *Encephalartecæ*.)

Stove plant. For cultivation, see *ZAMIA*, to which it is allied. It has the leaves of a cycad, and the forked veins of a fern.

- S. parado'aa*. 2. Natal. 1851. B. M. t. 5121.
 — *Ka'tzeri*. S. Africa. 1875. Gf. t. 798. Syn., *S. Katzeri*.
 — *schizodon*. Natal. 1872. Syn., *S. schizodon*.

Stanho'pea. (Named after Earl Stanhope, 1781-1855. Nat. ord., *Orchidææ*; Tribe, *Vandææ*—*Stanhopeicæ*.)

Stove orchids, grown in pots. See *ORCHIDS*.
S. auro'ntia. Orange. June. La Guayra. 1840.

- *au'rea*. See *S. Wardii*, var. *au'rea*.
 — *Bark'e'ri*. Yellow, brown. July. Mexico.
 — *Buce'phalus*. 2. Yellow, crimson. May. Quito. 1843. B. R. 1845, t. 24; B. M. t. 5278.
 — *gutta'ta*. Apricot-colour, blotched with brown.
 — *Roe'zii*. Yellow, brown. Nicaragua. 1874.
 — *cirrho'ta*. 1. White, yellow, violet. Nicaragua. 1840. G. C. 1850, p. 295.
 — *deltoid'ea*. Light yellow, crimson speckled; lip orange and blackish-brown. Peru? 1862.
 — *Devont'e'nsis*. 1½. Yellow, crimson. June. Peru. 1833. Lindl. Ser. t. 1. Syn., *S. maculosa*.
 — *ebu'rnea*. White. Brazil. B. R. t. 1529.
 — *specta'bilis*. Straw-colour, white, crimson. Venezuela. 1868. III. Hort. t. 531.
 — *ecornu'ta*. 1. White, yellow. Central America. 1854. Fl. Ser. t. 181; B. M. t. 4885. Syn., *Stanhopeastrum ecornutum*. Rchb. Ken. i. t. 43.
 — *expa'nsa*. Various. May. Mexico. 1841.
 — *flori'da*. White, purple. 1879.

- S. gibbosa*. Dull yellow, crimson. June. S. America. 1870.
- *grandiflora*. 1. White. June. Trinidad. 1824. Maund. Bot. iv., t. 176. Syn., *Ceratocilius grandiflorus*.
- *alba*. White. June. Demerara. 1841.
- *incarnata*. White, flesh. June. Demerara. 1835.
- *odora*. White. June. Demerara. 1835.
- *graveolens*. Straw. May. Peru. 1843. Fl. Ser. tt. 69-70.
- *aurea*. Deep apricot-colour.
- *Lietzei*. Yellowish, red, white, with purple dots. Brazil. 1891. Gf. t. 1345.
- *guttulata*. See *S. oculata*.
- *Harrisiana*. June. Brazil. 1836.
- *incandora*. Yellow, white. May. Mexico. 1844. B. R. 1845, t. 65.
- *amaena*. Deep yellow, brownish-red, rose.
- *insignis*. 1. White, purple. September. Quito. 1826. B. M. t. 2948-9.
- *atro-purpurea*. White, purple. September. Brazil. 1830.
- *flava*. Yellow, purple. September. Brazil. 1837.
- *fulva*. White, red. September. Brazil. 1838.
- *lutea*. Yellow, purple. September. Brazil. 1834.
- *major*. Yellow, purple. September. Brazil. 1836.
- *obscura*. White, purple. September. Brazil. 1830.
- *pellida*. White, red. September. Brazil. 1830.
- *Lindleyi*. 1. Brown, red. August. Mexico. 1833.
- *lyncea*. Various. June. Mexico.
- *macrochila*. White, crimson. Mexico. 1859. Ill. Hort. 1859, p. 71.
- *maculosa*. Kn. and West. t. 121. See *S. Devonensis*.
- *Martiana*. 1. White. May. Mexico. 1843. Bate. Orch. t. 27. Syn., *S. velata*.
- *bicolor*. 1. White, purple. June. Mexico. 1843. B. R. 1843, t. 44.
- *oculata*. 2. White, purple. June. Brazil. 1829. B. R. t. 1800. Syn., *S. guttulata* and *Ceratocilius oculatus*.
- *Barkera* na. 2. White, purple. June. Mexico.
- *crocea*. Gf. t. 139. See *S. ornatisissima*.
- *major*. White, purple. June. Mexico. 1835.
- *pellida*. White, red. June. Mexico. 1836.
- *ornatisissima*. Deep orange, red-brown. Peru? 1862. Syn., *S. oculata*, var. *crocea*.
- *platyceras*. Yellowish, purple, brown-purple. Columbia. 1868. Ref. Bot. t. 108.
- *puila*. Yellow, white, brownish-purple. Costa Rica. 1877. Rhcb. Xen. t. 205.
- *quadricornis*. 2. Yellow, red. June. Central America. B. R. 1838, t. 5.
- *radicosa*. See *S. saccata*.
- *Reichenbachiana*. White, ochre, rosy. Columbia. 1879.
- *Ruckeri*. Yellow, brown. May. Guatemala. 1843. Lem. Jard. Fl. iv. p. 375. Syn., *S. Ruckeri*, var. *speciosa*.
- *Russelliana*. Various. May. Brazil. 1843.
- *saccata*. Yellow, green. May. Guatemala. 1836. Bate. Orch. t. 15. Syn., *S. radiosa*.
- *pellida*. Yellow. May. Guatemala. 1840.
- *Shuttleworthii*. Apricot colour, purple. Columbia. 1876.
- *Spindleriana*. A garden hybrid between *S. oculata* and *S. tigrina*. Gf. t. 1335.
- S. tigrina*, 2. Red, chocolate. July. Xalapa. Bate. Orch. t. 7; B. M. t. 4197. Syn., *S. tigrina*, var. *superba*.
- *atrata*. Orange, black. July. Guatemala. 1843.
- *lutea scens*. Bright yellow, orange, chocolate. Guatemala.
- *ni-gro-viola-cea*. Deep brownish-purple. 1845.
- *purpurea*. Orange, purple. July. Guatemala. 1836.
- *superba*. Fl. Ser. tt. 713-5. See *S. tigrina*.
- *tricornis*. Pink, white. Peru. Fl. Mag. n. s. t. 469.
- *velata*. See *S. Martiana*.
- *venusta*. See *S. Wardii*.
- *Wardii*. 1. Yellow, brown. August. Mexico. 1836. Lindl. Ser. t. 20. Syn., *S. graveolens* of some authors and *S. venusta*.
- *aurea*. Deep orange yellow. May. Guatemala. 1835. Syn., *S. aurea*.
- *Warszewicziana*. White, yellow. Central America.
- *xytriphora*. Straw, purple. Peru. 1868.

Stanhopeastrum. (From *Stanhopea*, and *astron*, a star. Nat. ord., *Orchidææ*; Tribe, *Vandææ*—*Stanhopeææ*.) See **Stanhopea**.

S. ecornutum. Rhcb. Xen. i. t. 43. See *Stanhopea ecornuta*.

Stanleya. (Named after the Earl of Derby. Nat. ord., *Cruciferae*; Tribe, *Sisymbriææ*.)

Hardy herbaceous perennial. Seeds and division of the plant in spring; sandy loam and vegetable mould.

S. pinnatifida. 1. Yellow. June. Louisiana. 1816.

Stapelia. (Named after J. B. Stapel, a Dutch botanist. Nat. ord., *Asclepiadaceæ*; Tribe, *Stapelieæ*.)

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. acuminata. 3. Purple-striped. August. 1795. Mass. Stap. t. 17.

— *ambigua*. 2. Purple, brown. June. 1795. Mass. Stap. t. 12.

— *angulinea*. 3. Yellow, brownish-red. June. 1812. B. C. t. 828.

— *angulata*. 3. Purple, yellowish. September. S. Africa. 1877.

— *aperta*. 2. Yellow, purple. July. 1795. Mass. Stap. t. 37.

— *Asterias*. 3. Violet. May. 1795. Mass. Stap. t. 14; B. M. t. 536.

— *atrata*. 3. Dark purple-brown, yellowish. September. S. Africa. 1877.

— *barbata*. B. M. t. 2401. See *Huernia barbata*.

— *Bayfie Idii*. 3. Purplish-brown, yellow. S. Africa. Before 1877. G. C. 1877, vii., p. 430.

— *Befonia* na. See *S. bufonia*.

— *bisulca*. 1. Yellow-striped. July. 1805.

— *buxifolia*. 1. Yellow-striped. July. 1806. Jacq. Stap. tt. 35-36; B. M. t. 1676. Syn., *S. Befoniana*.

— *cactiformis*. 3. Yellow-striped. August. 1844. B. M. t. 4127.

- S. cæspitosa*. Mass. Stap. t. 29. See *Duvalia cæspitosa*.
 — *campanulata*. B. M. t. 1861. See *Huernia clavigera*.
 — *cane'scens*. $\frac{1}{2}$. Brown. July. 1795.
 — *ciliata*. Mass. Stap. t. 1. See *Diplocyatha ciliata*.
 — *comata*. 1. Pale yellow. September. 1819. Jacq. Stap. t. 49.
 — *compacta*. $\frac{1}{2}$. Brown. August. 1800.
 — *concinna*. $\frac{1}{2}$. Green. July. 1798. Mass. Stap. t. 18.
 — *Corderoyi*. See *Duvalia Corderoyi*.
 — *crispata*. See *Huernia crispata*.
 — *deco'ra*. $\frac{1}{2}$. Yellow-striped. March. 1795. Mass. Stap. t. 26.
 — *deflexa*. B. M. t. 1890. See *S. reflexa*.
 — *depressa*. $\frac{1}{2}$. Brown, purple. July. Jacq. Stap. t. 55.
 — *Desmetiana*. $\frac{1}{2}$. Purplish-red, with pale yellow lines. December. About 1874. G. C. 1889, vi, p. 684.
 — *discolor*. $\frac{1}{2}$. Purple-brown, yellowish. Autumn. S. Africa. 1176.
 — *divaricata*. $\frac{1}{2}$. Flesh-coloured. August. 1793. Mass. Stap. t. 22.
 — *elegans*. B. M. t. 1184. See *Duvalia elegans*.
 — *erectiflora*. $\frac{1}{2}$. Greyish-purple. Karoo. G. C. 1889, vi, p. 650.
 — *europæa*. See *Boucerosia europæa*.
 — *fastigiatris*. $\frac{2}{3}$. Yellow, green. 1823. Jacq. Stap. t. 23.
 — *flavicomata*. $\frac{1}{2}$. Yellow. 1810.
 — *fusca*. $\frac{1}{2}$. Brown, purple. July. 1814. Jacq. Stap. t. 46.
 — *geminata*. $\frac{1}{2}$. Purple. March. 1795. B. M. t. 1326.
 — *gemmiflora*. $\frac{1}{2}$. Dark purple. October. 1795. B. M. t. 1839.
 — *gigantea*. $\frac{1}{2}$. Yellowish, brownish-red. Zululand. 1862. Remarkable for its enormous flowers, which are twelve to fourteen inches in diameter. G. C. 1877, vii, p. 693.
 — *glabriflora*. $\frac{1}{2}$. Purple-red. Yellowish. S. Africa. 1862. Syn., *S. grandiflora*, var. minor.
 — *glandulifera*. $\frac{1}{2}$. Yellowish. August.
 — *glanduliflora*. $\frac{1}{2}$. Brown. August. 1795. Mass. Stap. t. 19.
 — *glauca*. 2. Red, purple. July. 1799.
 — *glomerata*. See *Duvalia glomerata*.
 — *Gordoni*. 1. Yellow, brown. 1796.
 — *grandiflora*. 1. Dark purple. October. 1795. Mass. Stap. t. 11. *S. grandiflora* of B. M. t. 585 is *S. spectabilis*.
 — *lineata*. $\frac{1}{2}$. Purple-brown, yellow. S. Africa. 1873.
 — *minor*. See *S. glabriflora*.
 — *Gussoneana*. B. R. t. 1731. See *Boucerosia europæa*.
 — *hamata*. $\frac{1}{2}$. Blood-red. July. 1820. B. C. t. 242.
 — *hirsuta*. $\frac{1}{2}$. Purple. July. 1710.
 — *atra*. $\frac{1}{2}$. Dark purple. July. 1710.
 — *hirtella*. Jacq. Stap. t. 10. See *Duvalia hirtella*.
 — *hispidula*. $\frac{1}{2}$. Green. July. 1824.
 — *humilis*. Mass. Stap. t. 5. See *Huernia humilis*.
 — *hystrix*. See *Huernia hystrix*.
 — *Jacquiniana*. See *Duvalia Jacquiniana*.
 — *juve'neula*. 1. Brown. Purple. July. Jacq. Stap. t. 28.
 — *levigata*. See *Duvalia levigata*.
 — *lanigera*. $\frac{1}{2}$. Brown. August. 1800.
 — *lentiginosa*. B. M. t. 506. A synonym of *Huernia guttata*.
 — *livida*. 1. Purple. July. 1812.
 — *maculosa*. 1. Brown-striped. August. 1804. B. M. t. 1833.
 — *marginata*. $\frac{1}{2}$. Yellow-striped. July. 1805.
 — *marmorata*. 1. Yellow-striped. July. 1820. Jacq. Stap. t. 38.
 — *Masso'ni*. 2.
 — *mixta*. 1. Yellow-striped. July. 1800.
 — *moschata*. $\frac{1}{2}$. Brown, purple. July. B. C. t. 1051.
 — *multiflora*. 1. Violet, red. September. 1817.
 — *mutabilis*. $\frac{1}{2}$. Yellow-striped. June. 1823. Jacq. Stap. t. 29-30.
 — *neglecta*. Yellowish, purple-brown. September. Africa. 1876.
 — *namaquensis*. Namaqualand. 1882.
 — *norman'lis*. $\frac{1}{2}$. Yellow-striped. July. 1821. B. R. t. 755.
 — *ocellata*. Jacq. Stap. t. 6. See *Huernia ocellata*.
 — *olivacea*. $\frac{1}{2}$. Dark olive-green. Summer. S. Africa. 1872. Syn., *S. eruciformis*.
 — *ophiu'neula*. $\frac{1}{2}$. Brown. July. 1805.
 — *orbicularis*. $\frac{1}{2}$. Purple. July.
 — *pa'llida*. $\frac{1}{2}$. Pale blue. 1818.
 — *paniculata*. $\frac{1}{2}$. Green, brown purple. July. 1805. Jacq. Stap. t. 26.
 — *patentiro'stris*. $\frac{1}{2}$. Purple-brown, yellow. S. Africa. 1870.
 — *pa'tula*. 1. Orange. July. 1797. Jacq. Stap. t. 56.
 — *pi'cta*. $\frac{1}{2}$. Yellow-striped. August. 1799. B. M. t. 1169.
 — *pili'fera*. See *Trichocaulon piliferum*.
 — *planiflora*. $\frac{1}{2}$. Pale yellow. August. 1805.
 — *Plat'ni*. $\frac{1}{2}$. Purple-brown, yellow. September. Natal. 1806. B. M. t. 5692.
 — *pulche'lla*. $\frac{1}{2}$. Yellow-striped. May. 1795. Mass. Stap. t. 36.
 — *pu'lehra*. $\frac{1}{2}$. Yellow-striped. August. 1800.
 — *pu'lla*. B. M. t. 1648. A synonym of *Boucerosia mammillaris*.
 — *pulvinata*. $\frac{1}{2}$. Dark violet. August. 1795. B. M. t. 1240.
 — *quinque'ris*. 1. Yellow-striped. May. 1800.
 — *radiata*. B. M. t. 619. See *Duvalia radiata*.
 — *ramosa*. $\frac{1}{2}$. Dark purple. June. 1795. Mass. Stap. t. 32.
 — *reclinata*. B. M. t. 1397. See *Duvalia reclinata*.
 — *reflexa*. $\frac{1}{2}$. Green, purple. July.
 — *reticulata*. B. M. t. 1662. See *Huernia reticulata*.
 — *retusa*. $\frac{1}{2}$. Yellow-striped. July. 1800.
 — *revoluta*. 1. Purple. July. 1790. B. M. t. 724.
 — *ru'fa*. $\frac{1}{2}$. Brown. September. 1795. B. C. t. 239.
 — *rufescens*. $\frac{1}{2}$. Reddish-brown. September.
 — *rugosa*. Purple, green. June. Jacq. Stap. t. 41.
 — *scutellata*. $\frac{1}{2}$. Yellowish, purple-brown. August. S. Africa. 1877.
 — *serrulata*. $\frac{1}{2}$. Purple. July. 1805. Jacq. Stap. t. 17.
 — *Simsi*. $\frac{1}{2}$. Dark purple. July. 1800.
 — *sororia*. 1. Dark purple. July. 1797. Mass. Stap. t. 39.
 — *spectabilis*. 1. Dark purple. December. 1802.
 — *stellaris*. $\frac{1}{2}$. B. C. t. 1312.
 — *stri'cta*. $\frac{1}{2}$. Pale blue. August. 1814. B. M. t. 2037.
 — *Sty'gia*. $\frac{1}{2}$. Dark purple. August. 1810.
 — *trifida*. $\frac{1}{2}$. Purple-brown, yellowish. September. S. Africa. 1876.
 — *tsome'nsis*. $\frac{1}{2}$. Dull purple. Summer. 1882.
 — *tubata*. Jacq. Stap. t. 3. See *Huernia tubata*.
 — *ungu'pe'tata*. $\frac{1}{2}$. Purple-brown, yellow. S. Africa. 1877. G. C. 1877, vii, p. 335.
 — *varia'bilis*. Yellow, red. June. 1823.
 — *variegata*. 1. Yellow-striped. August. 1727. B. M. t. 26.
 — *venusta*. Mass. Stap. t. 3. See *Huernia venusta*.

- S. verrucosa*. Yellow, spotted with dark purple.
B. M. t. 786.
— *vetula*. $\frac{1}{2}$. Dark purple. August. 1793.
B. M. t. 1234.
— *Wendlandiana*. 1. Yellow-striped. August.
1818.

Staphyle'a. Bladder-Nut. (From *staphyle*, a bunch; flowers in clusters. Nat. ord., *Sapindaceæ*; Tribe, *Staphyleæ*.)

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. *occidentalis* requires a hothouse, but it scarcely deserves one; *pinnata* is singular for its large bladder-capsules.

- S. Bolanderi*. California. 1883.
— *Bumalda*. 6. Summer. Japan. 1812. Sieb. Fl. Jap. t. 95.
— *colchica*. White. N. Europe. G. C. 1879, xi., p. 117.
— *Coulombieri*. A garden variety. 1887.
— *occidentalis*. 30. Jamaica. 1824.
— *pinnata*. 6. June. England. Eng. Bot. ed. 3, t. 322. St. Anthony's Nut.
— *trifolia*. 6. May. N. Amer. 1640.

Star Apple. *Chrysophyllum*.

Star-fish Flower. *Stapelia Asterias*.

Star Flower. *Aster*, *Sternbergia*, *Tricentris* and *Triteleia*.

Star Grass. *Aletris farinosa*.

Star Head. *Scabiosa*.

Star Hyacinth. *Scilla amœna*.

Star of Bethlehem. *Ornithogalum umbellatum*.

Star, Sea. *Aster tripolium*.

Star Thistle. *Centaurea calcitrapa*.

Starwort. *Aster* and *Stellaria*.

Starting. A term used to designate hastening the commencement of growth, either in seed or plant, by submitting it to artificial heat.

Sta'tice. Sea Lavender. (From *stazio*, to stop; the powerful medical astringency of some of the species. Nat. ord., *Plumbaginæ*; Tribe, *Staticeæ*.)

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, fibry loam and a little peat, also good and fibry.

GREENHOUSE EVERGREENS.

- S. arborescens*. 2. Blue. July. Teneriffe. 1829. B. M. t. 3776.
— *Bonduellii*. 1. Yellow. June. N. Africa. 1859. B. M. t. 5158.
— *Bourgieri*. 1. Purple, white. August. Canary Islands. 1859. B. M. t. 5153.
— *brassicifolia*. $\frac{1}{2}$. Purple. August. Canary Islands. 1859. B. M. t. 5162.
— *Dicksonii*. Purple. May. 1840. Marn. Mag. 1841, p. 8.
— *echinoides*. 1. Pale blue. July. South Europe. 1752. Biennial. Sibth. Fl. Gr. t. 299.
— *grandiflora*. 1836.

- S. macroptera*. Purple. Canary Islands.
— *suffruticosa*. $\frac{1}{2}$. Blue. July. Siberia. 1799.

HALF-HARDY HERBACEOUS.

- S. cægyptiaca*. $\frac{1}{2}$. Pale pink. May. Ararat. 1829. B. M. t. 2363.
— *ala'ta*. 1. Purple, yellow. July. 1806.
— *auriculata*. $\frac{1}{2}$. Blue. July. Galicia. 1817.
— *auriculæfolia*. $\frac{1}{2}$. Red. July. Barbary. 1781.
— *australis*. 1. Australia. 1823.
— *cine'ra*. 1. Blue. July. Cape of Good Hope. 1810.
— *congesta*. Red. July. Altai. 1837.
— *conspicua*. 1. Pink. July. Russia. 1804. B. M. t. 1629.
— *cordata*. $\frac{1}{2}$. Blue. June. South Europe. 1752.
— *emarginata*. $\frac{1}{2}$. Purple. May. Gibraltar.
— *foliosa*. 1. Purple, white. July. Graciosa. 1830.
— *frutescens*. 1. Blue. Canaries. 1847. Fl. Ser. t. 325.
— *Halfordii*. A form of *S. macrophylla*.
— *imbricata*. Teneriffe. 1829. Fl. Ser. t. 320-21.
— *incana*. 1. Pink. July. Egypt. 1823.
— *Limonium*. 1. Blue. July. England.
— *macrophylla*. 2. White. May. Canaries. 1824. B. M. t. 4125.
— *monopetala*. B. R. 1841, t. 54. See *Limonium monopetala*.
— *denudata*. B. R. 1842, t. 59. See *Limonium monopetala*, var. *denudata*.
— *muconata*. 1. Red. July. Barbary. 1784.
— *ovatifolia*. 1. White. July. Canaries. 1816.
— *pectinata*. $\frac{1}{2}$. Blue. September. Canaries. 1780. B. R. 1840, t. 65.
— *profusa*. 2. White, bluish-purple. August. A hybrid between *S. puberula* and *S. Halfordii*.
— *pseudarmeria*. Paxt. Mag. xi., t. 79. A synonym of *Armeria cæspitosa*.
— *puberula*. $\frac{1}{2}$. Violet. May. Graciosa. 1830. B. R. t. 1450.
— *pubescens*. $\frac{1}{2}$. Red. July. South Europe. 1824.
— *purpurata*. 6. Purple. July. Cape of Good Hope. 1809. Jacq. H. Schoenb. t. 340.
— *scabra*. 1. Blue. June. Cape of Good Hope. 1788.
— *sinuata*. 1. Purple, yellow. August. Levant. 1629. B. M. t. 71.
— *speciosa*. 1. White. July. Russia. 1776. B. M. t. 656.
— *tetragona*. 2. Red. July. Cape of Good Hope. 1820.

HARDY HERBACEOUS.

- S. acerosa*. See *Acantholimon acerosum*.
— *altaica*. 1. Blue. July. Siberia. 1820.
— *ararati*. See *Acantholimon glutaceum*.
— *armeria*. A synonym of *Armeria vulgaris*.
— *articulata*. $\frac{1}{2}$. Blue. July. South France. 1826.
— *au'ra*. Golden. Siberia. 1832.
— *bellidifolia*. $\frac{1}{2}$. Pale blue. June. Greece. 1810. Sibth. Fl. Gr. t. 295.
— *bicolor*. Purple, white. May. 1837.
— *binervosa*. 1. Blue. July. England.
— *caroliniana*. 1. Blue. June. Carolina. 1820.
— *ca'spia*. 1. Pale blue. July. Caspian Sea.
— *cori'ria*. $\frac{1}{2}$. Lilac. July. Caucasus.
— *cuneata*. $\frac{1}{2}$. Blue. July. Siberia. 1820.
— *dichotoma*. $\frac{1}{2}$. Blue. July. South Europe. 1810.
— *echinus*. Sibth. Fl. Gr. t. 300. A synonym of *Acantholimon androsaceum*.
— *elata*. 1. Blue. August. Siberia. 1820.
— *eximia*. 1. Lilac, rose. August. Songaria. 1844. B. R. 1847, t. 2.
— *turkestanica*. 2. Lilac. Turkestan. 1858. Fl. t. 1270, figs. d-m.

- S. serufa'cea*. 1. Yellow. July. Siberia. 1796.
 — *seaxu'sa*. 1. Purple. July. Siberia. 1791.
 — *Fortu'nei*. 1. Yellow. April. China. 1845.
 — *globulariaefolia*. 1. White. August. Mexico. 1821. Sibth. Fl. Gr. t. 296.
 — *Gmeli'ni*. 1. Blue. July. Siberia. 1796.
 — *græ'ca*. $\frac{1}{2}$. White. June. Greece. 1810.
 — *graminifolia*. 1. Red. June. Siberia. 1780.
 — *Kaufmannia'na*. 1. Pink. Turkestan. 1880. Gf. t. 996.
 — *latifolia*. 1. Blue. June. Siberia. 1791.
 — *leptobola*. Yellow, purple. Summer. Turkestan. 1881. Gf. t. 1045.
 — *minu'ta*. $\frac{1}{2}$. Red. June. Mediterranean region. 1658.
 — *na'na*. $\frac{1}{2}$. Blue. July. Britain.
 — *oleifolia*. 1. Red. July. Italy. 1688.
 — *pru'no'sa*. 1. White. July. South Europe. 1823.
 — *rariiflora*. Blue. July. Britain.
 — *reticulata*. $\frac{1}{2}$. Blue. July. England.
 — *rytidophylla*. 3. Blue. May. Port Natal. 1840. B. M. t. 4055.
 — *scopa'ria*. 1. Blue. July. Siberia. 1796.
 — *spathulata*. 1. Purple. July. Barbary. 1804. B. M. t. 1617.
 — *spica'ta*. $\frac{1}{2}$. White. July. Caucasus. 1819. Annual.
 — *superba*. Lilac. 1887. Gf. 1887, p. 666, fig. 170.
 — *Suworo'vi*. Lilac. Summer. Turkestan. 1883. Gf. t. 1095, figs. 1-2.
 — *tatarica*. $1\frac{1}{2}$. Pink. June. Russia. 1731.
 — *Thou'sini*. 1. Blue. August. North Africa. 1700.
 — *vimi'nea*. $\frac{1}{2}$. Blue. July. 1818.
 — *virga'ta*. $1\frac{1}{2}$. Blue. July. Spain.
 — *Willdenovia'na*. $\frac{1}{2}$. 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 rise 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 three feet on each side of the position for the tree, thus producing an excavation of six feet square. Two feet in depth is amply sufficient for any fruit-tree, especially for a dwarfing plan. The soil should then be thrown entirely out, and four or five 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 vegetable refuse 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 durable. 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 a position for improvement. We now come to the hard materials for the bottom of the hole; four or five inches in depth, as before stated. It matters not what this is composed of: broken stones from quarries, brickbats, chalk, cinders, or clinkers, etc., are all eligible. These being rammed hard, throw a coating of fine-riddled cinders, or very fine gravel over the whole: this secures drainage, and prevents the roots entering to any injurious extent.

Staunto'nia. (Named after *George Staunton*, a traveller in China. Nat. ord., *Berberidaceæ*; Tribe, *Lardizabaleæ*. Allied to *Holbellia*.)

Hardy evergreen climber, producing deliciously scented flowers. Cuttings of young, half-ripened shoots in sandy soil. Sandy loam. In autumn the long trailing shoots should be cut back, leaving only those from which flowers are desired.

S. hexaphylla. White. April. Japan. 1876. Sieh. Fl. Jap. t. 176.

— *latifolia*. A synonym of *Holbellia latifolia*.

Stauracanthus. (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., *Leguminosæ*; Tribe, *Genistecæ*.) See **Ulex**.

Hardy evergreen. Seeds, and cuttings of young shoots under a hand-light, in summer, in sandy soil.

S. aphyllus. See *Ulex genistoides*.

Staurationthera. (From *stauros*, a cross, and *anthera*, an anther; the anthers cohere in the form of a cross. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*.)

For cultivation, see RHYNCOGLOSSUM.

S. grandifolia. Lilac, orange. Moulmein. 1863. B. M. t. 5409. Greenhouse.

Stauropsis. (From *stauros*, a cross, and *opsis*, like; in allusion to the shape of the flower. Nat. ord., *Orchideæ*; Tribe, *Vandæ-Sarcantheeæ*.)

Stove epiphytal orchids, requiring the same culture as VANDA, which see.

S. Batemanni. Yellow, crimson, purple. Summer. Philippine Islands. Syns., *Fieldia lissochiloides*, *Vanda Batemanni*, B. R. 1846, t. 59, and *V. lissochiloides*.

— *fasciata*. White, yellowish, purple. Eastern Tropical Asia. 1872. Syn., *Trichoglottis fasciata*.

— *gigantea*. Deep yellow, blotched with cinnamon; lip white. Spring. Burmah. 1858. Syn., *Vanda gigantea*, B. M. t. 5189.

Staurostigma. (From *stauros*, a cross, and *stigma*, a stigma; referring to the cross or star-shaped stigmas. Nat. ord., *Aroideæ*; Tribe, *Dieffenbachieæ*. Syn., *Asterostigma*.)

Stove plants, with tuberous rootstock. They require a season of rest, during which they should be watered sparingly and not allowed to get perfectly dry. Sandy loam and peat, well drained. Summer temp., 75° to 85°; winter, 60° to 70°.

S. colubrinum. Livid green, purple-brown, red. Rio Janeiro. 1860.

— *concinnum*. 1½. Whitish, red. Brazil. 1860. Syn., *Caladium luridum*, B. C. t. 1590.

— *Langsdorffii*. 1½. Green, purplish. Rio Janeiro. 1860.

— *lineatum*. 1½. Dull green, purple-brown, pinkish. Rio Janeiro. 1860.

— *Luschnathianum*. Green, yellowish, scarlet. Rio Janeiro. Syn., *Asterostigma Luschnathianum*, B. M. t. 5972.

— *Riedelia*. 2. Dull green, cream-colour. Bahia. 1860.

— *zebrina*. Rio Negro. 1865.

Staves-Acre. *Delphinium staphisagria*.

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 is required. At first the plants are absolutely dependent for their very existence upon the food contained in or around 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, etc., 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° Fahr., and allowing them to remain in it until cold, but the temperature of the water must be governed by the nature of the seed.

Stelis. (A Greek name for some parasitical plant. Nat. ord., *Orchideæ*; Tribe, *Epidendreeæ-Pleurothalleæ*.)

Stove epiphytes. For cultivation, see PLEUROTHALLIS, to which they are allied. Many species are mentioned in Loudon's "Hortus Britannicus" without descriptions, and not having been described in any other work, cannot be identified.

S. atropurpurea. B. M. t. 3975. See *S. citiaris*. — *Bruchmulleri*. ½. Dark purple. December. Andes. 1879. B. M. t. 6521.

— *canaliculata*. Yellowish-green. Columbia. 1873.

— *citiaris*. ½. Deep purple. February. Mexico. 1842. Syn., *S. atropurpurea*.

— *Endreii*. Greenish-white. Costa Rica. 1870.

— *glussula*. Brownish. Costa Rica. 1870.

— *grandiflora*. ½. Chocolate-coloured. July. Brazil. 1836.

— *grossularis*. Pale green. G. C. 1881, xvi. p. 717.

— *micrantha*. ½. Whitish, red. April. Jamaica. 1805. B. C. t. 1011.

— *ophioglossoides*. Green, purplish. September. West Indies. 1791. B. C. t. 442.

— *sesquipedalis*. ½. Pale yellow. August. Sierra Nevada. 1845.

— *tubata*. B. C. t. 1601. See *Physosiphon Loddigesii*.

— *zonata*. Pale ochre, mauve. Demerara. G. C. 1881, xvi. p. 717.

Stellaria. Stitchwort. (From *stella*,

a star. Nat. ord., *Caryophyllaceæ*;

Tribe, *Aisneæ*.)

A genus of weedy herbs, except *Stellaria holostea*, which is 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. graminæa*, var. *auræa*, is a variety of garden origin, sometimes employed in carpet bedding.

Stelle'ra. (After *G. W. Steller*, 1709-

1746, a Russian botanical collector. Nat. ord., *Thymelæaceæ*.)

Hardy, perennial herbs or shrubs. Ordinary garden-soil. Divisions.

S. Alberti. Gfl. t. 1262. See *Wikstroemia Alberti*.

— *altaica*. 1. White. July. Altai. 1824.

— *Chamoëa'sme*. 1. White. June. Siberia. 1817.

— *Passeri'na*. Jacq. Ic. t. 68. See *Thymelæa arvensis*.

Stemma'tium. (From *stemmation*, a small crown; in reference to the corona. Nat. ord., *Liliaceæ*; Tribe, *Alliææ*.) See **Tristagma**.

A pretty and interesting greenhouse bulb, somewhat resembling a narcissus. Offsets and seeds. Rich sandy loam; not too much water. Summer temp., 60° to 80°; winter, 50° to 60°. *S. narcissoides*. See *Tristagma narcissoides*.

Stemo'dia. (From *stemon*, a stamen, and *dis*, double; the cells of the anthers are separated. Nat. ord., *Scrophulariææ*; Tribe, *Gratiolææ*.)

Half-hardy herbs. Rich, moist soil. Division of roots.

S. chilensis. 1. Blue. September. Chili. 1829. B. R. t. 1470.
— *durantifolia*. Bluish-purple. Tropical America. 1890.
— *lobeloides*. 1. Deep blue. August. Brazil. 1830. Syn., *Gratiola tetragona*, B. M. t. 3134.

Ste'mona. (From *stemon*, a stamen; the stamens are foliaceous. Nat. ord., *Roxburghiaceæ*.)

Stove climber. Turfy loam. Reproduced by suckers.

S. gloriosoides. 6. Green. July. East Indies. 1803. Syn., *Roxburghia gloriosa*, B. M. t. 1500, and *R. viridiflora*.

Stemonaca'nthus. (From *stemon*, a stamen, and *akantha*, a spine. Nat. ord., *Acanthaceæ*; Tribe, *Ruellieæ*.) See **Ruellia**.

S. macrophyllus. See *Ruellia macrophylla*.
— *Pearcei*. See *Ruellia Pearcei*.

Stena'ctis. (From *stenos*, narrow, and *aktin*, a sunbeam; the rays of the expanded blossoms. Nat. ord., *Compositææ*; Tribe, *Asteroidææ*.) Now united with **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. heterophylla. 1. White. July. N. Amer. 1840.
— *inuloides*. 1. Red. August. Nepaul.
— *speciosa*. 2. Purple. July. California. 1831. B. R. t. 1577. A synonym of *Erigeron speciosum*.
— *strigosus*. 1. White. July. N. America. 1816.

Stena'ndrium. (From *stenos*, narrow, and *aner*, *andros*, male; referring to the stamens. Nat. ord., *Acanthaceææ*; Tribe, *Justicieææ*.)

Dwarf, stove plant with variegated leaves. *S. igneum*. See *Chamæranthemum igneum*.
— *Lindeni*. Yellow. Leaves dark green, paler towards the edges; veins yellow. Peru. 1890. Ill. Hort. xxxviii. t. 136.

Stena'nthera. (From *stenos*, narrow, and *anthera*, an anther; the filaments broader than the anthers, which are narrower in proportion. Nat. ord., *Epacridaceææ*.) See **Astroloma**.

Greenhouse Australian evergreens. Cuttings of young, short shoots, a little firm at their base, in sand, under a bell-glass, and placed in a cold frame in May; sandy, fibry peat, with enough of charcoal and broken pots to keep the soil open. Winter temp., 40° to 45°.

S. ciliata. A synonym of *Astroloma longiflorum*.
— *pinifolia*. B. C. t. 228. A synonym of *Astroloma pinifolia*.

Stena'nthium. (From *stenos*, narrow, and *anthos*, a flower; the perianth segments arenarrow. Nat. ord., *Liliaceææ*; Tribe, *Veratreeææ*.)

Greenhouse, or hardy bulbs. Compost of sandy loam and peat. Divisions.

S. angustifolium. 2-3. Greenish-white. June. North America. Hardy.
— *gramineum*. A variety with narrower leaves and fewer flowers. Syn., *Helonias graminea*, B. M. t. 1599, and *Xerophyllum gramineum*.
— *frigidum*. 2-3. Purplish. June. North America. 1846. Fl. Ser. t. 468. Hardy.
— *occidentale*. Dark purple. North-west America. 1881. Gfl. f. 1035, fig. 3.

Stenia. (From *stenos*, narrow; the pollen masses. Nat. ord., *Orchideææ*; Tribe, *Vandeeæ-Maxillarieææ*. Allied to **Maxillaria**.)

Stove orchids, grown on blocks. See **ORCHIDS**.

S. fimbriata. See *Chondrorhyncha fimbriata*.
— *gutta*. Straw, purple. July. Peru. 1830.
— *paillida*. $\frac{1}{2}$. Yellow. August. Demerara. 1837. B. R. 1838, t. 20.

Stenocarpus. (From *stenos*, narrow, and *karpus*, fruit; the fruit being long and thin. Nat. ord., *Proteaceææ*. Syn., *Agrostus*.)

Stove or warm greenhouse trees. For cultivation, see **LOMATIA**.

S. Cunninghamii. See *S. sinuatus*.
— *Forsteri*. White. New Caledonia. 1851. Paxt. Fl. Gard. ii. p. 166.
— *salignus*. 5. Greenish. June. Australia. 1719. B. R. t. 441. Beef Wood.
— *sinuatus*. 100. Scarlet. August. Moreton Bay. 1830. Syn., *S. Cunninghamii*, B. M. t. 4263.

Stenochilus. (From *stenos*, narrow, and *cheilos*, a lip; the narrow lip of the flower. Nat. ord., *Myoporineææ*.) Now united with **Eremophila**, under the specific names annexed.

Greenhouse evergreens, from Australia. Cuttings of young shoots in sand, under a bell-glass, in April or May; sandy loam and a little fibry peat. Winter temp., 40° to 45°.

S. elegans. A synonym of *Lamourouzia multifida*.
— *glaber*. 2. Red. 1803. B. M. t. 1942. EREMOPHILA BROWNII.
— *longifolius*. 4. Scarlet. April. 1825. EREMOPHILA LONGIFOLIA.
— *maculatus*. 3. Scarlet. April. 1820. B. C. t. 805. EREMOPHILA MACULATA.
— *viscosus*. 2. Yellow. October. 1844. B. M. t. 2930. EREMOPHILA BROWNII.

Stenochlaëna. (From *stenos*, narrow, and *chlaina*, a cloak; the covering of the spore-cases. Nat. ord., *Filices-Polypodiaceææ*.)

- Stove, brown-spored ferns. See FERNS.
S. heteromorphica. April. Australia.
 — *viminifolia*. May. E. Ind.
 — *longifolia*. 2. June. W. Ind. 1810.
 — *Meyeria* na. 3. S. Africa.
 — *scandens*. 30. July. E. Ind. 1841
 — *sorbifolia*. July. W. Ind. 1798.
 — *spondicifolia*. June. E. Ind.
 — *triquetra*. July. E. Ind.

Stenoco'ryne. (From *stenos*, narrow, and *koryne*, a club. Nat. ord., *Orchidæ*; Tribe, *Vandæ-Maxillariæ*.) See **Bifrenaria**.

Stove orchid, grown in a basket. See ORCHIDS.

S. longicornis. A synonym of *Bifrenaria longicornis*.

Stenoga'stra, sometimes spelt **Stenogaster**. (From *stenos*, narrow, and *gaster*, belly; some of the species have a swelling on the corolla-tube. Nat. ord., *Gesneraceæ*.) See **Sinningia**.

S. concinna. See *Sinningia concinnum*.

Stenoglot'tis. (From *stenos*, narrow, and *glotta*, a tongue; in allusion to the narrow lip. Nat. ord., *Orchidæ*; Tribe, *Ophrydæ-Habenariæ*. Allied to *Habenaria*.)

Greenhouse terrestrial orchids. Divisions of the roots. Loam and rotten leaves, mixed with bits of decayed wood and charcoal. Water plentifully when growing. The temperature of an intermediate house suits them best.

- S. fimbriata*. Rose-pink, purple. S. Africa. 1871. B. M. t. 5872.
 — *longifolia*. 1½. Deep mauve. Natal. B. M. t. 7186.

Stenome'sson. (From *stenos*, narrow, and *messon*, the middle; the flowers contracted in the middle. Nat. ord., *Amaryllidæ*; Tribe, *Amaryllæ*. Syns., *Carpodetes* and *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 fibry peat.

- S. aurantiacum*. Orange. May. Quito. 1843. Syns., *S. Hartwegii*, B. R. 1844, t. 42, and *Chrysiophiala aurantiaca*.
 — *coccineum*. Scarlet. May. Peru. Ref. Bot. t. 309. Syns., *Pancreatium coccineum* and *Coburgia coccinea*, B. M. t. 3865.
 — *croceum*. 1. Copper. May. 1820. B. M. t. 3615. Syn., *Pancreatium croceum*. Red. Lil. t. 157.
 — *curvidentatum*. B. M. t. 2640. See *S. flavum*, var. *curvidentatum*.
 — *flavum*. Yellow. May. Peru. 1823. B. M. t. 2641. Syn., *Chrysiophiala flavum*. B. R. t. 978.
 — *curvidentatum*. Yellow. May. Peru. 1842. Syns., *S. curvidentatum*. B. M. t. 2640, *S. pauciflora* and *Chrysiophiala pauciflora*.
 — *latifolium*. 1. Yellow. March. Lima. 1837. Syns., *S. latifolium*, B. M. t. 3803, and *S. vitellinum*, B. R. 1843, t. 2.
 — *Hartwegii*. See *S. aurantiacum*.
 — *humile*. 1. Orange-red. March. Peru. 1841. Syn., *Coburgia humilis*, B. R. 1842, t. 46.

- S. incarnatum*. 1½-2. Pale or bright red. August. Andes of Ecuador, &c. 1826. Syn., *Coburgia incarnata*. Swt. Fl. Gard., Ser. 2, t. 17. Forms of this have received the following names:—*Coburgia chacapoyensis*, *C. fulva*, *C. læta*, *C. langensis*, *C. splendens*, *C. trichroma*, *C. variegata* and *C. versicolor*.
 — *acutum*. A form with a narrower perianth tube. Syn., *Coburgia acuta*.
 — *latifolium*. See *S. flavum*, var. *latifolium*.
 — *luteo-virens*. 1. Primrose yellow. Spring. Andes of Ecuador. 1879. B. M. t. 6508.
 — *pauciflorum*. See *S. flavum*, var. *pauciflorum*.
 — *Peareei*. 2-3. Yellow. May. Andes of Peru and Ecuador. 1871. Ref. Bot. t. 308.
 — *recurvatum*. 1-1½. Reddish-yellow. Andes of Peru. Syns., *Carpodetes recurvatum*, *Chrysiophiala recurvata* and *Pancreatium recurvatum*.
 — *rubrum*. A synonym of *S. coccineum*.
 — *Stricklandii*. See *Stricklandia eucrosioides*.
 — *suspensum*. 1. Bright scarlet. May. Andes of Peru. 1868. Ref. Bot. t. 22.
 — *viridiflorum*. 1½-2. Green. May. Andes of Peru. 1840. Syns., *Callithauma viridiflorum*, B. M. t. 3866a, and *Pancreatium viridiflorum*.
 — *vitellinum*. B. R. 1843, t. 2. See *S. flavum*, var. *latifolium*.

Stenorhynchus. (From *stenos*, narrow, and *rhynchus*, a beak; shape of the column. Nat. ord., *Orchidæ*; Tribe, *Neottieæ-Spirantheæ*.) See **Spiranthes**.

Stove orchids, grown in pots. See ORCHIDS.

- S. aphyllus*. A synonym of *Neottia aphylla*.
 — *cinnabarinus*. B. R. 1847, t. 65. See *Spiranthes cinnabarinus*.
 — *speciosus*. Garden, June 14, 1884. See *Spiranthes colorata*.
 — *Ortgiesii*. See *Spiranthes colorata*, var. *Ortgiesii*.

Stenose'mia. (From *stenosemos*, a narrow edge; referring to the fertile fronds. Nat. ord., *Filices-Polypodiaceæ*.) Now united with **Acrostichum**.

Stove fern. See FERNS.

S. aurita. Java.

Stenosperma'tion. (From *stenos*, narrow, and *spermatum*, a diminutive of *sperma*, a seed; on account of the slender seeds. Nat. ord., *Aroidæ*; Tribe, *Orontieæ*.)

Stove evergreen herbaceous perennial. For cultivation, see SPATHIPHYLLUM, to which it is allied.

- S. Wallisii*. 1. Spathe and spadix white. Columbia, B. M. t. 6334. Syns., *S. pompananense* and *Spathiphyllum Wallisii*.

Steno'storum. (From *stenos*, narrow, and *stoma*, a mouth; referring to the flower. Nat. ord., *Rubiaceæ*; Tribe, *Guettardeæ*. Allied to *Guettarda*.)

Stove, white-flowered, West Indian, evergreen shrubs. 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. lucidum*. May. 1818. Syn., *Guettarda lucida*.
 — *tomentosum*. May. 1822. Syn., *Guettarda tomentosa*.

Stenota'phrum. (From *stenos*, narrow, and *taphros*, a trench; in reference to the cavities in the rachis in which the spikelets are seated. Nat. ord., *Gramineæ*; Tribe, *Panicææ*.)

A curious stove perennial grass. Seeds; divisions. Light loam. Summer temp., 60° to 80°; winter, 55° to 60°.

S. americana. 3. Green. Tropical America, Africa, and Australia. Syn., *S. glabrum*.

— *variegatum*. Leaves white-striped. New S. Wales. 1874. Syn., *Stephanophorum glabrum*, var. *variegatum*.

— *glabrum*. See *S. americana*.

Stephana'ndra. (From *stephanos*, a crown, and *aner*, a man; in allusion to the disposition of the stamens. Nat. ord., *Rosacææ*; Tribe, *Spiræææ*. Allied to *Spiræa*.)

Hardy deciduous shrub. Seeds, cuttings, layers, and suckers. Good garden-soil.

S. flexuosa. White. July. Japan. 1880. Syn., *S. incisa*.

Stepha'nia. (In honour of Professor *Stephani*. Nat. ord., *Menispermæææ*; Tribe, *Cissampelidæææ*.)

Greenhouse climbers. For cultivation, see MORISONIA.

S. hermannifolia. June. India.

— *rotunda*. Orange. Himalaya. 1866.

Stephanoco'ma. (From *stephanos*, a crown, and *kome*, hair; referring to the pappus. Nat. ord., *Compositæææ*; Tribe, *Arctotidæææ*.)

Greenhouse herb. For culture, see STOBÆA.

S. cardioides. 2½. Yellow. Autumn. South Africa. 1864. Syn., *Stobæa decurrens* and *S. sphaerocephala*. B. M. t. 5715.

Stephanoli'rion. (From *stephanos*, a crown, and *lirion*, a lily. Nat. ord., *Liliacæææ*; Tribe, *Alliæææ*.) See *Tristagma*.

S. narcissoides. See *Tristagma narcissoides*.

Stephano'phorum. (From *stephanos*, a crown, and *phoreo*, to bear. Nat. ord., *Gramineæææ*; Tribe, *Panicæææ*.) See *Stenotaphrum*.

S. glabrum variegatum. See *Stenotaphrum americanum*, var. *variegatum*.

Stephanophy'sum. (From *stephanos*, a crown, and *physa*, a bladder. Nat. ord., *Acanthacæææ*; Tribe, *Ruelliaæææ*.) See *Ruellia*.

S. Baiki'ei. B. M. t. 5111. See *Ruellia Baikiæ*.

Stephano'tis. (From *stephanos*, a crown, and *ous*, *otos*, an ear; the ear-like processes on the crown of the stamens. Nat. ord., *Asclepiadacæææ*; Tribe, *Marsdeniæææ*.)

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; fibry loam and fibry 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. See G. C. 1881, xvi., pp. 342 and 379.

S. floribunda. 20. May. Madagascar. 1839. B. M. t. 4058.

— *Thouarsii*. May. E. Ind. 1842.

Stercu'lia. (Named after *Stercus*, a heathen god. Nat. ord., *Sterculiacæææ*; Tribe, *Sterculiaæææ*.)

Stove, or greenhouse evergreens. Cuttings of ripe shoots in sand, under a bell-glass, in moist bottom-heat; fibry loam and peat. Winter temp., 45° to 58°; summer, 60° to 80°. *Tragacantha* produces the gum of that name. *Platanifolia* stood for years in the open air at Chelsea, and it is likely that many of the East Indian and Australian species would thrive with greenhouse treatment.

S. Bala'nghas. B. R. t. 185. See *S. nobilis*.

— *Bidwi'llii*. Red. September. N. E. Australia. 1851. Syn., *Brachychiton Bidwillii*. B. M. t. 5133. Greenhouse.

— *caudata*. 20. North Australia. 1824. Syn., *Brachychiton diversifolium*. Greenhouse.

— *coccinea*. 20. E. Ind. 1817.

— *colorata*. 30. Scarlet. E. Ind. 1818. Ic. Pl. t. 143.

— *discolor*. 40. Rose-red. West Australia. 1882. B. M. t. 6608. Greenhouse.

— *diversifolia*. 20-30. Australia. 1824.

— *grandiflora*. 6. E. Ind. 1820.

— *helicteres*. 8. Yellow, purple. Carthage. 1820.

— *heterophylla*. West Africa.

— *Ivira*. 20-60. Yellowish. July. South America. 1793.

— *lancoleta*. 20. Reddish-brown. Summer. China. B. R. t. 1256. Greenhouse.

— *macrophylla*. Yellow. July. E. Ind. 1822.

— *no'bilis*. 20. Pale buff. E. Ind. 1787. Syn., *S. Balanghas*, B. R. t. 185.

— *platanifolia*. 30. China.

— *pubescens*. 20. White. Guinea. 1793.

— *rupes'tris*. N. E. Australia. 1880. Syn., *Delabechea rupestris* and *Oleobachia macrophylla*, *O. palustris* and *O. rupestris*.—The Bottle-tree.

— *tragacantha*. 40. Red, brown. May. Sierra Leone. 1793. B. R. t. 1853.

Sterile. See *Barren*.

Steriph'o'ma. (From *steriphoma*, a foundation; the fruit-stalk being large. Nat. ord., *Capparidacæææ*.)

Stove shrub. Cuttings under a bell-glass in heat.

S. paradozum. Yellow, orange. July. Venezuela. 1797. Fl. Ser. tt. 564-5. Syn., *S. cleomoides*.

Sternbe'rgia. (Named after *Count Sternberg*, a German botanist. Nat. ord., *Amaryllo'idææææ*; Tribe, *Amaryllo'idææææ*.)

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. 3. Constantinople.

— *colchiciflora*. 3. Hungary. 1816. B. R. t. 2008. Syn., *Amaryllo'idææææ*, Sibth. Fl. Gr. t. 311, and *A. colchicifolia*.

— *Fischeriana*. Yellow. Spring. Karabagh. 1868.

— *lutea*. Yellow. Autumn. S. Europe. Hardy. Syn., *Amaryllo'idææææ*, B. M. t. 290 and *Oporanthus lutea*.

— *ca'igua*. 3. N. Africa. 1820.

— *gra'ca*. Mountains of Greece.

Steudnera. (Named after *Dr. Steudner*, of Gorlitz, a German botanist. Nat. ord., *Aroideæ*; Tribe, *Dieffenbachieæ*. Allied to *Colocasia*.)

Stove herbaceous perennials. Seeds, suckers, or cuttings or divisions of the rootstock. Rich sandy loam, leaf-mould, and bits of broken charcoal, well mixed and well drained. Moist atmosphere. They require a period of rest. Summer temp., 65° to 85°; winter, 60° to 65°.

S. colocasiæfolia. 1. Spathe purple-brown; spadix whitish. India. 1869. B. M. t. 6762.

— *discolor*. 1. Spathe yellow and purple. India. 1874. Syns., *S. colocasiæfolia* of B. M. t. 6076, and *S. colocasiæfolia*, var. *discolor*.

Stevensonia. (After *Stevenson*, once Governor of the Mauritius. Nat. ord., *Palmeæ*; Tribe, *Areceæ*. Syn., *Phœnicophorum*.)

Stove palm, requiring an atmosphere almost saturated with moisture. Fibrous peat, mixed with sand and pieces of charcoal. Imported seeds.

S. grandifolia. 40. Yellow. Seychelles. 1865. B. M. t. 7277. Syns., *Areca seychellarum*, *Astrocaryum Borsigianum* and *aureo-pictum* and *Phœnicophorum seychellarum*, III. Hort. t. 433.

— *viridifolia*. See *Verschaffeltia splendida*.

Stevia. (Named after *P. J. Esteve*, a Spanish botanist. Nat. ord., *Compositæ*; Tribe, *Eupatoriaceæ*.)

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. adenophora. 2. White. Chili. 1822.

— *angustifolia*. 1½. Pink. 1823.

— *breviaristata*. 3. Rose. July. Tucuman. 1836. B. M. t. 3792.

— *callosa*. A synonym of *Florestina callosa*.

— *canescens*. 1. White. 1827. Syn., *S. incanescens*.

— *convolvulifolium*. Yellow. Guiana.

— *diversifolium*. Yellow. June. W. Indies. 1826.

— *emarginatum*. 10. Yellow. July. W. Indies. 1820.

— *Eupatoriæ*. 2. Pink. 1798. B. M. t. 1849. Syns., *S. punctata* and *Ageratum punctatum*. Jacq. Hort. Schoenb. t. 300. *S. Eupatoriæ* of B. R. t. 93 is *S. purpurea*.

— *fascicularis*. 1. White. September. 1830. B. R. 1833, t. 59.

— *fastigiata*. 1½. White. New Spain. 1826.

— *fulgens*. 6. Yellow. W. Indies. 1759.

— *glandulifera*. 3. Purple. 1839. Syn., *S. tracheloides*. B. M. t. 3856.

— *Humboldtianum*. 20. Yellow. S. America. 1824.

— *hyssopifolia*. 1½. Pink. B. M. t. 1861.

— *incanescens*. See *S. canescens*.

— *inæfolia*. 2. White. 1816.

— *lanceolata*. 1. Purple. 1822.

— *laxiflora*. Purple.

— *linearis*. A synonym of *Palafoxia linearis*.

— *lucida*. 2. Pink. New Spain. 1824.

— *microphylla*. 2. Blush. September. 1823.

— *molle*. White. 1834.

— *monardæfolia*. 1½. Violet. 1826.

— *nepetæfolia*. 1½. White. 1824. Syn., *S. suaveolens*.

— *odora*. 1½. White. 1890.

— *ovata*. 2. White. 1816.

S. paniculata. 1½. White. New Spain. 1824.

— *pedata*. B. M. t. 2040. A synonym of *Florestina pedata*.

— *periplocaefolium*. 10. Yellow. July. W. Indies. 1818.

— *pilosæ*. 1½. Pink. 1820.

— *puberulum*. Yellow. August. Guiana. 1824.

— *pubescens*. 1½. Purple. 1823.

— *punctata*. See *S. Eupatoriæ*.

— *purpurea*. 1½. Purple. 1812. Syn., *S. Eupatoriæ* of B. R. t. 93.

— *rhombifolia*. 1½. White. 1827.

— *salicifolia*. 1½. Pink. 1803.

— *salicæfolia*. 1½. White. 1827.

— *serrata*. 1½. Flesh. 1799.

— *suaveolens*. See *S. nepetæfolia*.

— *subcristata*. White. Peru. 1824.

— *subpubescens*. 2. Pink. New Spain. 1820.

— *ternifolia*. 1½. White. 1824.

— *tomentosa*. 1½. Violet. 1824.

— *tracheloides*. B. M. t. 3856. See *S. glandulifera*.

— *trifida*. 1½. White. New Spain. 1827.

— *violæcea*. 3. Violet. 1829.

— *viscosa*. Purple. 1821.

Stiffia. (Probably in memory of *M. Stiff*. Nat. ord., *Compositæ*; Tribe, *Mutisaceæ*.)

Stove shrub. Cuttings. Peat and loam. Summer temperature, 60° to 80°; winter, 50° to 55°.

S. chrysantha. 6. Orange. February. Brazil. B. M. t. 4438.

Stigmaphyllon. (From *stigma*, the female organ, and *phyllon*, a leaf; leaf-like stigma. Nat. ord., *Malpigiaceæ*. Allied to *Banisteria*.)

Stove, yellow-flowered plants. 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. aristatum. 20. July. Brazil. 1832. Twiner. B. R. t. 1659.

— *auriculatum*. 10. Brazil. 1820. Twiner.

— *ciliatum*. May. Brazil. 1796. Herbaceous.

— *ellipticum*. 10. September. Mexico. 1844.

Syn., *S. mucronatum*. Twiner.

— *heterophyllum*. 10. December. Buenos

Ayres. 1842. Climber. B. M. t. 4014.

— *jatrophaefolium*. 3. May. Uruguay. 1841.

— *littorale*. Autumn. South Brazil. 1882. B.

M. t. 6623. Climber.

— *mucronatum*. See *S. ellipticum*.

Stillingia. (Named after *Dr. B. Stillingfleet*, an English botanist. Nat. ord., *Euphorbiaceæ*; Tribe, *Crotonææ*. Allied to *Homalanthus*.)

Stove, yellow-flowered evergreens. Cuttings in sand, in heat; sandy, fibry loam, a little peat and charcoal, and also a little brick-rubbish. Winter temp., 60°; summer, 60° to 75°.

S. populnea. 14. Ceylon. 1823.

— *sebifera*. 10. China. 1703. A synonym of *Sapium sebiferum*.

Stinging Bush. *Jatropha urrens*.

Stinging Nettle. *Urtica dioica*.

Stinking Gladwyn. *Iris fœtidissima*.

Stipa. Feather Grass. (From *stipe*, feathery or silky. Nat. ord., *Gramineæ*;

Tribe, *Agrostideæ*.)

Stipa penna'ta is the common feather-grass of the seed-shops. All but *elegantissima* and *humilis* are hardy herbaceous perennials; division and seeds in spring; common soil.

- S. alta'ica*. July. Altaï. 1836.
- *capilla'ta*. 2. July. Europe. 1815.
- *confe'rt'a*. 2. July. 1819.
- *elegantissima*. 2-3. Australia. Greenhouse.
- *gigante'a*. 3. July. Spain. 1823.
- *hu'milis*. 3. July. S. Amer. 1802.
- *ju'nea*. 3. July. France. 1772.
- *Lastagros'tis*. South Europe. Syn., *Lasia-grostis Calamagrostis*.
- *penna'ta*. 2. July. Britain.

Stitchwort. *Stella'ria*.

Stizolo'bium. (From *steizein*, to prick, and *lobos*, a pod. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*.) A synonym of **Mucuna**.

S. alti'ssima. A synonym of *Mucuna altissima*.
— *pru'riens*. A synonym of *Mucuna pruriens*.

Stobæ'a. (Named after *Dr. Stobæus*, a Swede. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*.) A synonym of **Berkheya**.

Greenhouse, yellow-flowered evergreens, from South Africa. Cuttings of the points of shoots, when growing, in sand, under a bell-glass; sandy loam and fibry peat. Winter temp., 40° to 48°.

- S. pinna'ta*. B. M. t. 1788. See *Berkheya pinnata*.
- *purpu'rea*. G. C. 1872, p. 1261. See *Berkheya purpurea*.
- *sphæroc'e'phala*. B. M. t. 5715. See *Stephanocoma carduoides*.

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 superior kind.

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 characterized, for the supply of sap will not be sufficient.

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 granulation and union between the faces of the wounds at the junction to occur.

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 an inch in the part where the graft or bud is to be inserted. Stocks of two or three 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, etc., 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, etc., 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 *S. æthiopia* so used. Nat. ord., *Compositæ*; Tribe, *Inuloidæ*.)

Greenhouse evergreens, from South Africa. Cuttings of young shoots in sand, under a bell-glass, in May; fibry, sandy loam and peat. Winter temp., 40° to 45°.

S. aethiopica. 2. August. 1759.

— *cine'ra*. 2. August. 1784.

— *ericoi'des*. 2. August. 1816.

— *reflexa*. 2. August. 1816.

Stoke'sia. (Named after *Dr. Stokes*, an English botanist. Nat. ord., *Compositae*; Tribe, *Vernoniaceae*.)

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. 2. Blue. August. Carolina. 1766. B. M. t. 4966.

Stoncrop. *Se'dum*.

Stone Pine. *Pinus 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 lateral shoots.

Storax. *Styrax*.

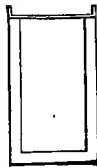
Stork's Bill. *Pelargo'nium*.

Stoves are glazed structures, differing from greenhouses chiefly in requiring a higher temperature to be sustained within them for growing plants from tropical climates. Nearly all that is stated relative to the greenhouse, hot-bed, and pit, under the articles **Melon** and **Rendle's Tank System**, is applicable to the stove. The best form of house is that generally known as *span-roofed*. Light, being highly essential to all tropical, ornamental foliaged and flowering plants, is best obtained by using this form of house. The use of rhomboid panes of glass (as shown in the annexed figure) for conducting condensed vapour to one corner, and thence down the sash-bars, is now entirely abandoned.

Flues are rapidly giving place to hot-water or steam-pipes in the heating of tropical houses. The more recent systems are not only safer, but do their work better, with greater regularity, and, as a rule, require less attention than the older ones. The old troughs (as shown in the annexed figure), so popular in the days of flues, have given place to tanks cast on the pipes, whereby the air may be kept at a uniformly moist temperature.

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 of ordinary dimensions, 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 thirty feet long, five pipes of that length, and five 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, forty feet long, thirteen feet broad, seven feet high in the centre, and four feet high at the two fronts, having a superficial surface of glass amounting to 538 square feet, Mr. Rendle has a tank eighty-three feet long, running round three sides of the house, four feet wide, and about eight 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 five 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 $1\frac{1}{2}$ 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 $12\frac{3}{4}$ pounds per hour.

Interior diameter of pipe in inches.	Decimal parts of a cubic foot of steam in each foot of pipe.
1	0.0645
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.

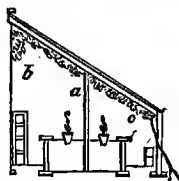
A case of brickwork, with pulverized charcoal between this and the boiler, is to be preferred to any other. A boiler having a surface of seventy feet exposed to the air, in a temperature of 32°, requires an extra bushel of coals to be consumed per day, to compensate for the heat radiated and conducted 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.

The temperature for a stove should be:—Winter: day, 60°-65°; night, 65°; summer: 65°-70°, rising with sun-heat. Where a great variety of plants are grown requiring different temperatures, those which require most heat may be grown in the warmer end, admitting all air at the cooler end if possible.

A plunging tank heated with pipes and filled with cocoanut-fibre is another essential to a stove, and should always

be provided where pits or other accommodation for this purpose are limited.

Bark or Moist Stove.—Mr. Loudon gives the following design and descrip-



tion 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 two and a half to four 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, *a*. Shelves may be placed against the back wall, *b*, and occasionally a narrow-leaved creeper run up the roof, *c*. 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. Stranvæys, F.R.S.* Nat. ord., *Rosaceæ*; Tribe, *Pomeæ*.)

A beautiful and nearly evergreen shrub, 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. glaucescens. 20. White. June. Nepal. 1828. B. R. t. 1856.

Stratio'tes. Water Soldier. (From *stratos*, an army; sword-like leaves. Nat. ord., *Hydrocharideæ*; Tribe, *Stratioteæ*.)

Hardy aquatics. Useful to plant in ponds, where it will soon cover a large space. Seeds and divisions; ponds and lakes.

S. alismoides. A synonym of *Ottelia alismoides*. — *aloides*. 2. White. June. England.

Strava'dium. (From the native name in Malabar. Nat. ord., *Myrtaceæ*; Tribe, *Lecythideæ*.) See **Barringtonia**.

Stove evergreen trees. Cuttings of ripened shoots in sand, under a bell-glass, and in a good, moist bottom-heat; fibry loam and peat, with a little charcoal and silver sand. Winter temp., 60° to 65°; summer, 65° to 90°.

S. acutangulum. See *Barringtonia acutangula*. — *insigne*. Fl. Ser. t. 654, 655. A synonym of

Barringtonia insignis.

S. racemosa. See *Barringtonia racemosa*.
— *rubrum*. See *Barringtonia acutangula*.

Strawberry. *Fraga'ria*.

Superior kinds.—These are President, Sir Joseph Paxton, Lucas, Black Prince, Bicton, British Queen, Dr. Hogg, Elton, Keen's seedling, Loxford Hall seedling, James Veitch, La Constance, La Grosse Sucrée, Pauline, Pioneer, Vicomtesse Héricart de Thury, etc., etc.

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, etc. 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 three 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 ap-

proached. They may be thus constructed—



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 reported into larger ones; and the whole business henceforth is to give them kindly cultivation, as to regular waterings, etc., 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.

Strawberry-Blite. *Blitum*.

Strawberry-Spinach. *Blitum*.

Strawberry-tree. *A'rbutus*.

Streblorrhiza. (From *streblos*, twisted, and *rhiza*, a root. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*.)

Half-hardy, climbing shrub. For culture, see CLIANTHUS.

S. speciosa. 3. Flesh-coloured. May. Norfolk Island. 1840. Syn., *Clianthus carneus*. B. R. 1841, t. 51.

Streblus. (From *streblos*, twisted; referring to the branches. Nat. ord., *Urticaceæ*.)

A stove shrub or tree. Rich loam mixed with fibry peat. Seeds; cuttings.

S. asper. 20. Greenish. Tropical Asia. Paper Tree.

Strelitzia. Bird of Paradise Flower; Bird's-tongue Flower. (Named after Charlotte, queen to George III., of the house of *Mecklenburgh-Strelitz*. Nat. ord., *Scitamineæ*; Tribe, *Musceæ*.)

Stove, yellow-flowered, herbaceous perennials, from South Africa. By seeds in a good, moist heat, in spring; generally by suckers and dividing the plant; fibry loam and a little peat. Winter temp., 45° to 55°; summer, 60° to 80°.

S. albidus. See *S. quensoni*.

— *angustifolia*. See *S. parvifolia*.

— *augusta*. 18. White. March. 1791. B. M. tt. 4167—4168.

S. farinosa. 5. February. 1795.

— *humilis*. 6. May. A dwarf form of *S. Reginae*.

— *ju'ncea*. See *S. parvifolia*, var. *juncea*.

— *Nicola'i*. 25. White, blue. May. Gf. t. 235.

— *Nive'ni*. Garden hybrid. 1888.

— *ova'ta*. 8. March. 1777. Syn., *S. Reginae* of Aiton.

— *parvifolia*. 6. June. 1796. Syn., *S. angustifolia*.

— *ju'ncea*. 6. May. B. R. t. 516. Syn., *S. juncea*.

— *prolifera*. See *S. Reginae*, var. *prolifera*.

— *quensoni*. Rosy violet. 1863. Syn., *S. albiflos*.

— *Regi'nae*. 8. April. 1773. B. M. tt. 119, 120; Red. Lil. tt. 77, 78.

— *citri'na*. Sepals citron-yellow. 1887.

— *Lemonie'rii*. 3. Yellow, blue. 1880.

— *prolifera*. A variety with two spathe.

— *pu'mila*. A dwarf variety. 1856.

Streptanthera. (From *streptos*, twisted, and *anthera*, an anther; referring to the shape of the anthers. Nat. ord., *Iridæ*; Tribe, *Ixiææ*. Closely allied to *Gladiolus*, with which it is sometimes united.)

Greenhouse bulbs. Sandy loam. Offsets.

S. cu'prea. 3. Copper. June. South Africa. 1825. Swt. Fl. Gard. ser. 2, t. 122.

— *e'legans*. 3. White, blue. May. South Africa. 1827. Swt. Fl. Gard. t. 209.

Streptocalyx. (From *streptos*, twisted, and *calyx*, a cup or calyx. Nat. ord., *Bromeliaceæ*; Tribe, *Bromeliææ*.)

Stove plants, requiring the same culture as *ÆCHMEA*.

S. Furstenbergii. 14. Pink. October. Bahia. 1877. Syn., *Æchmea Furstenbergii* and *Tillandsia Furstenbergii*.

— *Vallera'ndi*. 2. Bracts bright red; flowers violet. Amazon Valley. 1876. Belg. Hort. 1883, p. 13, t. 1, 2. Syn., *Lamprococcus Vallera'ndi*, Rev. Hort. 1887, p. 129.

Streptocarpus. (From *streptos*, twisted, and *carpos*, a fruit; the long seed-pod is twisted. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandreeæ*.)

Greenhouse, or stove, 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. albidus. Garden hybrid. 1889.

— *azur'is*. Garden hybrid. 1889.

— *bisto'ro-polyanthus*. Pale bluish-lilac. Fl. Ser. t. 2429. Garden hybrid.

— *Brua'deni*. Hybrid between *S. Rexii* and *S. polyanthus*.

— *caule'scens*. Pale lilac. Summer. East Tropical Africa. 1885. B. M. t. 6814. Stove.

— *contro'versus*. Garden hybrid. 1889.

— *Du'nnii*. 14. Pale or bright rose. May. Transvaal. 1884. B. M. t. 6903.

— *Galpi'ni*. Mauve-blue, with a white eye. Transvaal. 1891.

— *Garde'ni*. 3. Blue. July. Natal. 1854. B. M. t. 4862.

— *grandiflorus*. Garden hybrid. 1889.

— *Gree'ni*. 14. Pale lilac-blue. 1882. Garden hybrid between *S. Rexii* and *S. Saundersii*. G. C. 1882, xvii. p. 303. Stove.

— *ins'i'gnis*. Garden hybrid. 1889.

- S. kewen'sis*. Bright mauve-purple, with brownish-purple stripes in the throat. Autumn and winter. 1887. Garden hybrid between *S. Dunnii* and *S. Rezii*.
- *Kirkii*. Lilac. Summer. East Tropical Africa. 1884. B. M. t. 6782. Stove.
- *lutea*. White, with pale purple stripes. June. 1882. Syn., *S. parviflora* of B. M. t. 6636.
- *maculata*. Garden hybrid. 1889.
- *parviflora*. Purple, white, yellow. South Africa. 1888. B. M. t. 7036. See also *S. lutea*.
- *pauciflorus*. White, purple, primrose. 1882.
- *polyanthus*. 1. Natal. Purple. 1853. B. M. t. 4850.
- *Rezii*. $\frac{1}{2}$. Blue. June. South Africa. 1824. B. R. t. 1173. Syn., *Didymocarpus Rezii*. B. M. t. 3005.
- *Saundersii*. Blue, purple. Natal. 1861. B. M. t. 5251.
- *Watsonii*. Bright rose-purple. Autumn and winter. 1887. Hybrid between *S. kewen'sis* and *S. parviflora*. G. C. 1887, ii. pp. 137 and 215, fig. 52.
- *Wendlandii*. Clear blue. 1890.

Streptopus. (From *streptos*, twisted, and *pous*, a foot; flower-stalks twisted. Nat. ord., *Liliaceæ*; Tribe, *Polygonateæ*. Allied to *Uvularia*.)

Hardy herbaceous perennials. Seeds or divisions in spring; any good garden-soil.

- S. amplexifolius*. Red. Lil. t. 259. See *S. distortus*.
- *distortus*. 1. Greenish-white. May. Europe and North America. Syns., *S. amplexifolius*, *Uvularia amplexifolia* and *U. distorta*.
- *lanuginosus*. $\frac{1}{2}$. Yellow, green. June. N. America. 1812. Syn., *Uvularia lanuginosa*. B. M. t. 1490. Now known as *PROSARTES LANUGINOSUS*.
- *roseus*. $\frac{1}{2}$. Pink. June. N. America. 1806. Syn., *Uvularia rosea*. B. M. t. 1489.
- *simplex*. $\frac{1}{2}$. June. Nepaul. 1822.

Streptosolen. (From *streptos*, twisted, and *solen*, a tube; in allusion to the corolla tube. Nat. ord., *Solanaceæ*; Tribe, *Salpiglossideæ*.)

Greenhouse evergreen shrub. Seeds sown in a mild heat, in March, and potted when the seedlings are sufficiently large into light, rich soil.

- S. Jamesonii*. 4. Orange. June. Ecuador. 1847. Syn., *Browallia Jamesoni*. B. M. t. 4605.

Stricklandia. (After Sir C. W. Strickland, Bart., a successful cultivator of *Amaryllideæ*. Nat. ord., *Amaryllideæ*; Tribe, *Pantratieæ*.)

Stove bulb. For culture, see *STENOMESSON*.

S. eucrosioides. 1. Bright red. Spring. Andes of Ecuador. 1877. Syns., *Leperezia eucrosioides* and *Stenomesson Stricklandii*.

Striking. The process of causing cuttings to emit roots.

Stringy Bark Tree. A name applied to several species of *Eucalyptus*.

Strobilanthus. (From *strobilos*, a pine-cone, and *anthos*, a flower; resemblance of the head of flower. Nat. ord.,

Acanthaceæ; Tribe, *Ruellieæ*. Allied to *Ruellia*.)

Stove evergreen shrubs. Cuttings any time during summer in sandy soil, under a hand-light, in heat; fibry loam and sandy peat. Winter temp., 48° to 55°; summer, 80° to 80°.

- S. anisophyllus*. 3. Lavender. June. Silhet. 1823. Syns., *Goldfussia anisophylla*, B. M. t. 3404; *Ruellia anisophylla* and *R. persicifolia*, B. R. t. 955.
- *attenuatus*. Violet-blue. Himalayas. 1887. Gf. t. 1243. Greenhouse.
- *callosus*. Blue. May. E. Indies. 1840. Syn., *Ruellia callosa*.
- *coloratus*. Pale lilac-purple. Eastern Himalayas. 1887. B. M. t. 6922.
- *consanguineus*. Blue. Ceylon. 1873.
- *flaccidifolius*. Lilac-purple. India and China. 1887. B. M. t. 6947. This shrub yields a blue dye.
- *glomeratus*. 2-6. Purple. November. India. 1838. Syn., *Goldfussia glomerata*. B. M. t. 3881.
- — *speciosus*. A more showy variety. Syn., *Goldfussia glomerata*, var. *speciosa*. B. M. t. 4767.
- *isophyllus*. 2. Lavender. Autumn. India. 1845. Syn., *Goldfussia isophylla*. B. M. t. 4363, and Maund. Bot. t. 244.
- *lactatus*. 1. Pale lilac. September. E. Indies. 1847. B. M. t. 4366.
- *maculatus*. $\frac{1}{2}$. Pale lilac. September. 1846.
- *Sabinianus*. 4. Blue, purple. March. Nepaul. 1826. Syn., *Ruellia Sabiniana*. B. R. t. 1238.
- *scaber*. 3. Yellow. May. E. Indies. 1826. Syn., *Ruellia scabra*.
- *sessilis*. $\frac{1}{2}$. Pale purple. April. Bombay. 1836.
- *Walkii*. $\frac{1}{2}$ -2. Blue. October. India. 1858. Syn., *Goldfussia Thomsoni*. B. M. t. 5119.

Strobilorchis. (From *strobilos*, a fir cone, and *rachis*, a ridge; referring to the form of the inflorescence. Nat. ord., *Acanthaceæ*.) Now united with **Aphelandra**.

Stove shrub. For cultivation, see *RUELLIA*, to which it is allied.

- S. glabra*. Yellow. Brazil. 1852. Now known as *APHELANDRA HYDROMESTUS*.

Stroma'nthe. (From *stroma*, to strew, and *anthos*, a flower. Nat. ord., *Scitamineæ*; Tribe, *Marantææ*.)

Stove perennial evergreen herbs. Seeds; division of the plant in spring. Rich sandy loam, fibrous peat, and leaf-mould. Summer temp., 65° to 85°; winter, 58° to 65°.

- S. umbellata*. Brazil. 1875.
- *Lubbersii*. Leaves marbled with yellow above; under surface greyish. 1880. Belg. Hort. 1882, t. 1.
- *Porteana*. Leaves green above, paler beneath. 1859.
- *sanguinea*. A synonym of *Maranta sanguinea*.
- *spectabilis*. Lem. Jard. Fl. t. 401. See *Maranta spectabilis*.

Strophanthus. (From *strophos*, twisted, and *anthos*, a flower; divisions of petals twisted. Nat. ord., *Apocynaceæ*; Tribe, *Echitideæ*. Allied to *Nerium*.)

Stove evergreen shrubs. Cuttings of half-ripened shoots in sand, under a glass, in heat, in

- spring; fibry loam and sandy peat. Winter temp., 50° to 55°; summer, 60° to 85°.
- S. Bullenianus*. Yellow, purple. W. Tropical Africa. 1870.
- *capensis*. Orange, yellow. Cape of Good Hope. 1855. B. M. t. 5713.
- *chinensis*. See *S. divergens*.
- *dichotomus*. 3. Rosy. June. E. Indies. 1816.
- *chinensis*. See *S. divergens*.
- *divergens*. 3. Yellow. February. China. 1816. Syns., *S. chinensis* and *S. dichotomus*, var. *chinensis*. B. R. t. 469.
- *Ledeburii*. Yellow, purple. Congo. 1887. Gh. t. 1241.
- *sarmentosus*. 6. Red. June. Sierra Leone. 1824.

Stropholirion. (From *strophos*, twisted, and *lirion*, lily. Nat. ord., *Liliaceæ*; Tribe, *Alliaceæ*.) See **Brodiaea**.

S. californicum and *S. volubile* are synonyms of *Brodiaea volubilis*. B. M. t. 6123.

Struma'ria. (From *struma*, a tubercle; the style is enlarged at the bottom. Nat. ord., *Amaryllidaceæ*; Tribe, *Amaryllidaceæ*. Allied to Nerine and Hessea.)

Bulbs, from South Africa. For culture, see NERINE.

- S. angustifolia*. ½. Pink. April. 1795. Jacq. Ic. t. 359.
- *erispata*. B. M. t. 1363. See *Hessea crispata*.
- *filifolia*. Jacq. Ic. t. 361. See *Hessea filifolia*.
- *gemmata*. B. M. t. 1620. See *Hessea gemmata*.
- *linguifolia*. ½. White. April. Jacq. Ic. t. 356.
- *rufifolia*. ½. Pink. May. 1795. Jacq. Ic. t. 358.
- *spiralis*. B. M. t. 1383. See *Carpolyza spiralis*.
- *stellaris*. See *Hessea stellaris*.
- *truncata*. ½. White. April. 1795. Jacq. Ic. t. 357.
- *undulata*. ½. White. May. 1820. Jacq. Ic. t. 360.

Struthi'ola. (From *strouthion*, a little sparrow; resemblance of seeds to a beak. Nat. ord., *Thymelaceæ*; Tribe, *Eruthymeleæ*. Allied to Gnidia.)

Greenhouse evergreens, from South Africa. Cuttings of the points of shoots, two or three inches in length, in sand, under a bell-glass, in May; sandy, fibry peat and a little charcoal. Winter temp., 40° to 47°.

- S. angustifolia*. 3. Yellow. July. 1816.
- *ciliata*. 2. White. June. 1779. Andr. Rep. t. 139. Andr. Rep. t. 149 is *S. virgata*.
- *erecta*. B. M. t. 2138. See *S. stricta*.
- *glabra*. 2. Yellow. June. 1820.
- *imbricata*. 2. Yellow. June. 1794. Andr. Rep. t. 133.
- *incana*. 2. White. August. 1817.
- *juniperina*. 2. White. June. 1758. B. C. t. 75.
- *lateriflora*. 2. Yellow. July. 1819.
- *longiflora*. 2. Yellow. July. 1823.
- *lucens*. 2. Yellow. June. 1817.
- *ovata*. 2. White. April. 1792. Andr. Rep. t. 119.
- *pube'scens*. 3. Red. June. 1790. B. M. t. 1212.

- S. striata*. 2. Yellow. July. 1820.
- *stricta*. 1½. White. June. 1798. Syn., *S. erecta* of Curtis (not Linnæus).
- *tomentosa*. 2. Yellow. August. 1799. Andr. Rep. t. 334.
- *virgata*. 2. Red. June. 1779. Syn., *S. ciliata* of Andr. Rep. t. 149.

Struthio'pteris. (From *strouthios*, an ostrich, and *pteris*, a fern; resemblance of the leaves, or fronds, to its feathers. Nat. ord., *Filices*.)

Hardy, brown-spored ferns. See FERNS.

- S. germanica*. 2. July. Europe. 1760.
- *orientalis*. Japan. 1869.
- *pennsylvanica*. 2. August. N. America. 1812.

Strychnoda'phne. (From *strychnos*, a name of a plant mentioned by Theophrastus, and *daphne*, Daphne, a nymph. Nat. ord., *Lauraceæ*; Tribe, *Litsæaceæ*.)

Stove evergreens. For culture, see LAURUS.

- S. floribunda*. 40-60. Yellow. West Indies. 1800. Syns., *Laurus exaltata* and *L. floribunda*.
- *puberula*. 40. White. Cayenne. 1800. Syn., *Laurus crassifolia*.

Stryphnode'ndron. (From *struphinos*, acid, and *dendron*, tree. Nat. ord., *Leguminosæ*; Tribe, *Adenanthereæ*.)

Stove shrub. For culture, see ACACIA.

- S. guianense*. 30-40. White. November. Cayenne. Syns., *Acacia guianensis*, *Mimosa guianensis* and *Piptadenia guianensis*.

Stua'rtia. (Named after John Stuart, Marquis of Bute. Nat. ord., *Ternstroemiaceæ*; Tribe, *Gordoniaceæ*. Allied to Gordonia.)

Hardy, white-flowered, deciduous shrubs. Generally propagated by layers; moist peat soil, or deep, moist, sandy loam.

- S. grandiflora*. See *S. pseudo-camellia*.
- *marylandica*. See *S. virginica*.
- *ovata*. See *S. pentagyna*.
- *pentagyna*. 10. Cream-coloured. Summer. North America. 1785. B. M. t. 3918. Syns., *S. ovata* and *Malaecodendron ovatum*. B. R. t. 1104.
- *pseudocamellia*. 12. Creamy-white. Summer. Japan. 1879. Syn., *S. grandiflora*.
- *virginica*. 8. White. April. North America. 1743. Syn., *S. marylandica*.

Styla'ndra. (From *stylos*, a column, and *aner*, a male; in allusion to the arrangement of the stamens. Nat. ord., *Asclepiadaceæ*.) See **Podostigma**.

S. pulmita. See *Podostigma pubescens*.

Styli'dium. (From *stylos*, a column; the stamens and style are joined into a column. Nat. ord., *Stylidiaceæ*.)

All Australian plants. Herbaceous, by divisions, and by seeds in spring; shrubs, by cuttings of young shoots in sand, under a bell-glass; fibry, sandy loam, and a little peat and vegetable mould. Winter temp., 40° to 45°.

GREENHOUSE EVERGREENS.

- S. Brunonia* num. 1. Rose. June. 1841. B. R. 1842, t. 15.
 — *fasciculata* tum. $\frac{1}{2}$. Pink. August. 1838. B. M. t. 3816.
 — *fruticosum*. $1\frac{1}{2}$. Pink. July. 1803. B. C. t. 171.
 — *scandens*. 2. Rose. July. 1803. B. M. t. 3136.

GREENHOUSE HERBACEOUS.

- S. adnata* tum. $\frac{1}{2}$. Pink. July. 1824. B. M. t. 2598.
 — *androsaceum*. White.
 — *armaria*. 1. Purple. Tasmania. 1851. Lem. Jard. Fl. t. 286.
 — *bicolor*. White. Purple. 1843.
 — *canaliculata* tum. Yellow. July.
 — *caricifolium*. White. July.
 — *caule scens*. Pink.
 — *ciliata* tum. 1. Yellow. May. 1840. B. M. t. 3883.
 — *compressum*. Yellow. Purple. July.
 — *dichotomum*. $\frac{1}{2}$. Yellow. August. Syns., *S. Hookeri* and *S. mucronifolium*. B. M. t. 4538.
 — *Drummondii*. 2. Pink. November. 1838. Maund. Bot. v. t. 213.
 — *graminifolium*. 1. Pink. July. 1803. Andr. Rep. t. 658.
 — *hirsutum*. $\frac{3}{4}$. Rose. June. 1830. B. M. t. 3194.
 — *hispidum*. White. July.
 — *Hookeri*. Fl. Ser. t. 606. See *S. dichotomum*.
 — *juvencum*. $\frac{1}{2}$. Rose. 1830.
 — *laricifolium*. 1. Pink. July. 1818. B. R. t. 550. Syn., *S. tenuifolium*.
 — *leptostachyum*. White.
 — *lineare*. 1. Red. June. 1812.
 — *mucronifolium*. See *S. dichotomum*.
 — *nudum*. White. June. 1840.
 — *pilosum*. 1. Pink, white. June. 1841. B. R. 1842, t. 41.
 — *proliferum*. Pink. June. 1839.
 — *pycnostachyum*. Pink. June. 1843.
 — *recurvum*. $\frac{1}{2}$. Green, purple. May. 1840. B. M. t. 3913.
 — *saxifragoides*. White. June. 1842. B. M. t. 4529.
 — *scabridum*. White. July. 1841.
 — *spathulata* tum. $\frac{1}{2}$. Straw. S. W. Australia. 1872. B. M. t. 5953.
 — *striatum*. White. May.
 — *tenuifolium*. B. M. t. 2249. See *S. laricifolium*.

Stylocoryna. (From *stylos*, a column, and *koryne*, a club; shape of the style. Nat. ord., *Rubiaceae*; Tribe, *Gardenieae*.)

Stove, white-flowered, East-Indian evergreens. Cuttings of young shoots in sand, under a bell-glass in heat; fibry, sandy loam and peat. Winter temp., 45° to 55°; summer, 60° to 85°.
S. coriacea. 1828.
corymbosa. 5. 1759.
cymosa. 1811.

Stylolepis. (From *stylos*, a column, and *lepis*, a scale; the flower-stalks are scaly. Nat. ord., *Compositae*; Tribe, *Inuloidae*.) See *Podolepis*.
S. gracilis. A synonym of *Podolepis gracilis*.

Stylophorum. (From *stylos*, a column, and *phero*, to bear; in allusion to the long style. Nat. ord., *Papaveraceae*; Tribe, *Eupapaverae*. Allied to *Cathartina*.)

Hardy herbaceous perennials. Seeds in the open border in April; divisions of the root. Light garden-soil.

- S. diphyllum*. $\frac{3}{4}$. Yellow. June. Western United States. 1854. B. M. t. 4867. Syns., *S. ohioense*, *S. petiolatum*, *Chelidonium diphyllum*, *Meconopsis diphylla* and *M. petiolata*.
 — *japonicum*. $1\frac{1}{2}$. Yellow. May. Japan. 1870. B. M. t. 5830. Syn., *Chelidonium japonicum*.
 — *ohioense*. } See *S. diphyllum*.
 — *petiolatum*. }

Stypandra. (From *styphe*, tow, and *aner*, an anther; resemblance of the anthers. Nat. ord., *Liliaceae*; Tribe, *Asphodeleae*. Allied to *Dianella*. Syn., *Styponema*.)

Greenhouse Australian plants. Division of the plant in spring; sandy loam and fibry peat; require the protection of a dry, cold pit in winter.

- S. caespitosa*. 1-2. Blue or yellowish. June. 1824.
 — *frutescens*. Kn. and West. t. 63. See *S. glauca*.
 — *glauca*. 1-3. Blue. June. 1823. Syns., *S. frutescens* and *S. propinqua*. B. M. t. 3417.
 — *umbellata*. $\frac{3}{4}$. White or yellowish. June. 1826.

Styphelia. (From *styphe*los, hard; referring to the wood. Nat. ord., *Epacridaceae*; Tribe, *Styphelieae*.)

Greenhouse Australian evergreens. Cuttings of young shoots in sand, under a bell-glass, in April; sandy, fibry peat, and only a little fibry loam. Winter temp., 38° to 48°.

- S. amplexicaulis*. Linn. Trans. viii. t. 8. A synonym of *Leucopogon amplexicaulis*.
 — *epacridioides*. 6. Crimson. July. 1823.
 — *glauca*. A synonym of *Monotoca lineata*.
 — *lactea*. 4. Pink. June. 1823. Syn., *S. latifolia*.
 — *latifolia*. See *S. lactea*.
 — *longifolia*. 3. Green. June. 1807. B. R. t. 24.
 — *parvifolia*. Andr. Rep. t. 287. See *Leucopogon Richei*.
 — *Richei*. A synonym of *Leucopogon Richei*.
 — *splendens*. See *Asteroloma splendens*.
 — *triflora*. 6. Pink. July. 1796. Andr. Rep. t. 72.
 — *tubiflora*. 6. Scarlet. July. 1802. B. C. t. 1938.
 — *viridiflora*. See *S. viridis*.
 — *viridis*. 4. Green. May. 1791. Andr. Rep. t. 312. Syn., *S. viridiflora*. B. C. t. 1223.

Styphnolobium. (From *styphe*on, contracted, and *lobos*, a pod; the pods are generally constricted between the seeds. Nat. ord., *Leguminosae*; Tribe, *Sophoreae*.) See *Sophora*.
S. japonicum. See *Sophora japonica*.

Styrax. Storax. (From the Arabic. Nat. ord., *Styracaceae*.)

Hardy deciduous, white-flowered shrubs, except where otherwise stated. By imported seeds, also by 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. americana* num. 6. Summer. North America.
 — *Benzoin*. Summer. Sumatra. Stove.
 — *californicum*. 8. Summer. California.
 — *grandifolium*. 6. Spring. North America.
 1765. B. C. t. 1016.
 — *japonicum*. See *S. serrulatum*, var. *virgata*.
 — *laevigatum*. B. M. t. 921. See *S. pulverulentum*.
 — *obassia*. Japan. 1888. G. C. 1888, iv. p. 131, fig. 14.
 — *officinale*. 12. July. Levant. 1597. Sibth. Fl. Gr. t. 375; Andr. Rep. t. 631.
 — *pulverulentum*. 4. June. N. Amer. 1794. Wats. Dendr. t. 41. Syn., *S. laevigatum*. B. C. t. 960.
 — *serrulatum*. 40. Spring. India and Japan. B. M. t. 5950.
 — — *virgata*. 6. Buds sometimes pinkish outside. Japan. 1868. Syn., *S. japonicum*. Gf. t. 583.

Succulent Plants are so characterized on account of their thick juicy leaves or stems. 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 forms, are at home, and flourish even in those dry and parched seasons when the whole face of nature besides seem 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. *Saccharum officinarum*.

Sumach. *Rhus*.

Summer Snowflake. *Leucojum aestivum*.

Sun-dew. *Drosera*.

Sunflower. *Helianthus*.

H. annuus, Annual Sunflower, is cultivated in southern Europe 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 eighteen inches; the plants to be thinned out to thirty inches from plant to plant, and the number of plants at this distance would be about 14,500 per acre; at eighteen inches from plant to plant, 25,000 per acre; and at twelve 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, 1,500 pounds. The stalks, when burnt for alkali, give ten hundredweight of potash.

Sun-fruit. *Heliocarpus*.

Sun Plant. *Portulaca grandiflora*.

Sun-rose. *Helianthemum*.

Surface Grubs, or Caterpillars, are the larvæ of several species of *Noctua*, or *Night Moths*. Gardeners thus name them because they attack the roots of the turnip, mangold wurtzel, etc., just at the surface of the soil.

Susa'rium. (From *sousarion*, a small lily; supposed resemblance to a lily. Nat. ord., *Iridæ*; Tribe, *Sisyrinchieæ*.)

S. Segethi. Violet, yellow. Temperate South America. Gf. t. 1117, fig. 1.

Su'sum. (From the native name. Nat. ord., *Flagellariaceæ*.)

Stove plant, with the habit of a *DRACÆNA*.

S. anthelminticum. Reddish. Sumatra. 1889. Rev. Hort. 1889, p. 76, fig. 23.

Sutherlandia. (Named after *James Sutherland*, author of a botanical catalogue. Nat. ord., *Leguminosæ*; Tribe, *Galegæ*. Allied to *Chianthus*.)

Half-hardy, scarlet-flowered evergreens, from South Africa. Seeds in spring, or cuttings of young shoots in May, under a hand-light: require protection in hard winters.

- S. frutescens*. 3. June. 1683. Syn., *Colutea frutescens*. B. M. t. 181. Cape Bladder Senna.
 — *canescens*. June. 1816.
 — *obcordata*. Marr. Mag. 1839, t. 7.
 — *microphylla*. 3. June. 1816.

Sutto'nia. (In honour of the Rev. Dr. Sutton, F.L.S. Nat. ord., *Myrsinaceæ*; Tribe, *Eumyrsineæ*.)

Greenhouse evergreen shrub. For cultivation, see MYRSINE, to which it is allied.

S. australis. 10. New Zealand. Now known as MYRSINE URVILLEI.

Suwarrow-Nut. *Ca'ryocar*.

Swainso'nia. (Named after Isaac Swainson, F.R.S. Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. 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, fibry loam, and a third of peat. Winter temp., 38° to 45°. They would no doubt succeed against a protected conservatory wall.

S. astragalifolia. See *S. lessertifolia*, var. *astragalifolia*.

— *atrococtinea*. Garden variety. 1887.

— *canescens*. 1-2. Blue, or violet-purple. May. Syn., *Cylogyne canescens*.

— *coronillofolia*. 2. Purple. July. 1802. Salis. Parad. t. 28; B. M. t. 1725.

— *alba*. White. 1889.

— *Ferrandi'aba*. Pale yellowish in bud, snow-white when fully open. Garden variety 1886.

— *Froebelii*. 1. Violet. Gfl. 1854, t. 89.

— *galegifolia*. 2. Red. July. 1800. Syn., *Colutea galegifolia*. B. M. t. 792.

— *albiflora*. 2. White. July. 1826. B. R. t. 994.

— *Greyana*. 2. Pink. July. 1844. B. R. 1846, t. 66.

— *lessertifolia*. 2. Purple. July. 1824.

— *astragalifolia*. White. July. 1802. Syn., *S. astragalifolia*.

— *magniflora*. Flor. Mag. t. 273. A superior form of *S. Greyana*.

— *occidentalis*. Purple. W. Australia. 1865. B. M. t. 5490.

— *Osbornii*. Rose, becoming violet with age. Autumn. 1851. Lem. Jard. Fl. t. 304.

— *procumbens*. Purple. Summer. 1862. Syn., *S. violacea*.

— *purpurea*. A form of *S. galegifolia*.

— *violacea*. See *S. procumbens*.

Swallowwort. *Asclepias* and *Chelidonium*.

Swammerdamia. (Named after J. Swammerdam, naturalist. Nat. ord., *Compositæ*; Tribe, *Inuloideæ*.) A synonym of *Helichrysum*.

Half-hardy evergreens. For culture, see *PODOLAPIS*.

S. antennaria. 3. White. January. Van Diemen's Land. Journ. Hort. Soc. iv. p. 77. A synonym of *Helichrysum antennarium*.

— *glomerata*. 6. White. May. New Zealand. 1851.

Swamp Dogwood. *Ptelea trifoliata*.

Swamp Hickory. *Carya amara*.

Swamp Locust Tree. *Gleditsia monosperma*.

Swamp Post. *Quercus lyrata*.

Swamp Rose-Mallow. *Hibiscus moscheutos*.

Swamp Sassafras, or Laurel. *Magnolia glauca*.

Swamp Saxifrage. *Saxifraga vennesylvanica*.

Swamp White Oak. *Quercus bicolor*.

Swan-neck, or Swan-Wort. *Cyanocheilus*.

Swan River Daisy. *Brachycome*.

Swartzia. (Named after Dlof Swartz, a German botanist. Nat. ord., *Leguminosæ*; Tribe, *Swartzieæ*.)

Stove evergreen shrub. Cuttings of half-ripened shoots in sand, under a bell-glass, and in bottom-heat, in the beginning of summer; sandy, fibry loam and peat in equal proportions. Winter temp., 50°; summer, 60° to 85°.

S. grandiflora. 6. Yellow. Trinidad. 1821.

Syn., *S. simplicifolia*.

— *pinna*. 6. Yellowish. June. West Indies. 1817.

— *simplicifolia*. See *S. grandiflora*.

Swedish Beam-tree. *Pyrus intermedia*.

Swedish Juniper. *Juniperus communis*, var. *fastigiata*.

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. *Quercus Balota*.

Sweet Alyssum. *Kæ'niga maritima*.

Sweet Amber. *Hypericum Androsænum*.

Sweet Basil. *Ocimum basilicum*.

Sweet Bay. *Laurus nobilis*.

Sweet Briar. *Rosa rubiginosa*.

Sweet Broom. *Scoparia dulcis*.

Sweet Calabash. *Passiflora maliformis*.

Sweet Cassava. *Manihot Aipi*.

Sweet Chestnut. *Castanea sativa*.

Sweet Cicely. *Chærophyllum aromaticum*. See *Chervil*. This name is also applied to *Myrrhis odorata*.

Sweet Flag. *Acorus Calamus*.

Sweet Gale. *Myrica Gale.*

Sweet Gum. *Liquida'mbar styraciflua.*

Sweetia. (After Robert Sweet, 1783-1835, a nurseryman at Stockwell, and author of numerous botanical works. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ.*) See **Galactia.**

S. filiformis. See *Galactia filiformis.*
— *lignosa.* A synonym of *Galactia tenuifolia.*
— *longifolia.* See *Galactia longifolia.*

Sweet Lime. *Citrus Limetta.*

Sweet Marjoram. *Origanum majorana.*

Sweet Maudlin. *Achillea ageratum.*

Sweet Orange. *Citrus Aurantium.*

Sweet Pea. *Lathyrus odoratus.*

Sweet Potato. *Batatas edulis.*

Sweet Scabious. *Scabiosa atropurpurea.*

Sweet-scented Crab. *Pyrus coronaria.*

Sweet-scented Verbena. *Lippia citriodora.*

Sweet Sop. *Anona squamosa.*

Sweet Sultan. *Centaurea moschata.*

Sweet William. *Dianthus barbatus.*

Swertia. Felwort. (Named after E. Swert, a Dutch florist. Nat. ord., *Gentianæ*; Tribe, *Swerticæ.* Syn., *Ophelia.*)

Hardy plants; all annuals except *S. Michauxiana* and *S. perennis.* Seeds in spring; a marshy, peaty soil.

S. alata. 2. Greenish-yellow, with purple veins. Summer. India. 1868. Syn., *Ophelia alata.* B. M. t. 5687.

— *angustifolia.* 2. White, with dark blue spots. Summer. India. 1868. Syn., *Ophelia angustifolia.* B. M. t. 5687, figs. 3-4.

— *corniculata.* 3. Pale green. August. Siberia. 1817. Syn., *Halenia sibirica.*

— *corymbosa.* 1. Pale blue, or white with blue spots. May. India. 1836. Syn., *Ophelia corymbosa.* B. M. t. 4489.

— *Michauxiana.* 3. Green, yellow. July. North America. 1824. Biennial.

— *paniculata.* 1. White, purple or green. India. 1868. Syn., *Ophelia paniculata.* B. M. t. 5687, figs. 5-6.

— *perennis.* 1. Purple. July. England. Marsh Felwort. Perennial.

— *purpurascens.* 1-3. Purple. June. India. 1840. Syn., *Ophelia purpurascens.*

— *rotata.* A synonym of *Pleurogyne carinthiaca.*

— *trichotoma.* 13. White. Summer. India. 1863. Syn., *Ophelia umbellata.* B. M. t. 5397.

Swietenia. Mahogany. (Named after Von Swieten, a Dutch botanist. Nat. ord., *Meliaceæ*; Tribe, *Swietenia.*)

Stove evergreen trees. Cuttings of half-ripened shoots in sand, under a hand-light, and in bottom-heat; sandy, fibry loam. Winter temp., 50° to 60°; summer, 60° to 85°.

S. Chloroxylon. A synonym of *Chloroxylon Swietenia.*

— *febrifuga.* 50. White, yellow. E. Indies. 1796.

— *maha'gani.* 80. Red, yellow. W. Indies. 1734.

Swift Moth. See **Otter Moth.**

Sword Fern. *Xiphopteris.*

Sword Lily. *Gladiolus.*

Syagrus. (After an ancient poet. Nat. ord., *Palmeæ*; Tribe, *Cocoinæ.*)

Stove palms. Seeds; sandy loam, in a warm, moist plant-stove.

S. amara. 25. Martinique. 1850.

— *botryophora.* See *Cocos botryophora.*

— *campestris.* 10. Yellowish. Brazil.

— *coco'des.* See *Cocos Syagrus.*

— *comosa.* 10. Brazil. Syn., *Cocos comosa.*

— *Mikania'na.* See *Cocos Mikaniana.*

— *Sanco'na.* 60. Brazil.

Sycamine Tree. *Morus.*

Sycamore Tree. *Acer pseudoplatanus.*

Sycamore Fig Tree. *Ficus Sycomorus.*

Sycomorus. (So named from one species being thought to be the Sycamore of the Bible. Nat. ord., *Urticacæ*; Tribe, *Moracæ.*) Now united with **Ficus.**

Stove trees. For cultivation, etc., see **FICUS.**

S. antiquorum. 30. Egypt. A synonym of *Ficus Sycomorus.*

— *cape'nsis.* 4. Cape of Good Hope. 1816. A synonym of *Ficus variegata.*

Symphonia. (From *sumphonia*, regularity; referring to the regularity of the flowers and fruit. Nat. ord., *Guttiferæ.*) A synonym of **Moronebea.**

S. globuliflora. A synonym of *Moronebea coccinea.*

Symphoria. (From *sumphoreo*, to bear together. Nat. ord., *Caprifoliacæ*; Tribe, *Lonicercæ.*) See **Symphoricarpus.**

S. glomerata. See *Symphoricarpus vulgaris.*

— *foliis variegatis.* See *Symphoricarpus vulgaris*, var. *foliis variegatis.*

— *montana.* See *Symphoricarpus microphyllus.*

— *racemosus.* B. M. t. 2211. See *Symphoricarpus racemosus.*

Symphoricarpus. (From *sumphoreo*, to bear together, and *karpos*, a fruit; clustered fruit. Nat. ord., *Caprifoliacæ*; Tribe, *Lonicercæ.*)

Hardy deciduous shrubs, from North America. Cuttings in autumn, and freely by suckers; good, common soil. The flowers of *racemosus* are hunted after by bees, and its masses of white

fruits are grateful to many birds, besides looking very pretty in winter.

- S. acutus*. North West America. 1888.
— microphyllus. 6. Pink. August. Mexico. 1829. Syn., *S. montanus*, Maund, Bot. i. t. 20, and *Symphoria montana*.
— montanus. See *S. microphyllus*.
— occidentalis. 6. Pinkish. July.
— Heveri. Rosy. Colorado. 1888.
— puniceus. 4. Red. July. 1815.
— racemosus. 6. Rose. August. 1817. Syn., *Symphoria racemosa*. B. M. t. 2211.
— — pacificus. A variety with but one or two flowers in the axils of the upper leaves.
— vulgaris. 6. White. August. 1730. Syn., *Symphoria glomerata*.
— — foliis-variegatis. 6. Pink. August. Syn., *Symphoria glomerata*, var. *foliis variegatis*.

Symphya'ndra. (From *sumphio*, to grow together, and *aner*, *andros*, an anther; in allusion to the connate anthers. Nat. ord., *Campanulaceæ*.)

Hardy, perennial herbs. Rich sandy loam. Division of roots; seeds.

- S. armena*. 2. Blue. June. Orient. 1836.
— Hoffmanni. 1-2. White. Bosnia. 1884. G. C. 1888, iv., p. 760, fig. 107.
— pendula. 2. Cream. July. Orient. 1823. Swt. Fl. Gard. ser. 2, t. 66.
— Wanneri. 1. Blue. Summer. Alps. Syn., *Campanula Wanneri*.

Symphyoglossum. (From *sumphio*, to grow together, and *glossa*, a tongue. Nat. ord., *Asclepiadaceæ*.) A synonym of **Cynanchum**.

Symphyostemon. (From *sumphio*, to grow together, and *stemon*, a stamen. Nat. ord., *Iridææ*; Tribe, *Sisyrinchææ*.) See **Solenomelus**.

S. narcissoides. See *Solenomelus bistorus*.

Symphytum. Comfrey. (From *sumphio*, to make unite; and healing qualities. Nat. ord., *Boraginææ*; Tribe, *Boragææ*.)

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. bohemicum*. See *S. officinale*, var. *variegatum*.
— officinale. 4. White. June. Britain. Eng. Bot. ed. 3, t. 1115.
— bohemicum. 3. Crimson. May. Bohemia. 1810. Syn., *S. bohemicum*.
— — luteo-marginatum. Leaves broadly margined with yellowish. Belgium. 1870. Syn., *S. officinale*, var. *variegatum*.
— — patens. 4. Blue. June. Britain. Eng. Bot. ed. 3, t. 1116.
— — variegatum. See *S. officinale*, var. *luteo-marginatum*.
— tuberosum. 4. Yellow. July. Scotland. Eng. Bot. ed. 3, t. 1117.

HARDY HERBACEOUS.

- S. asperrium*. 6. Red, blue. July. Caucasus. 1799. B. M. t. 929.
— — aureo-variegatum. Leaves bordered with yellow. 1879.
— bullatum. See *S. tauricum*, var. *bullatum*.
— caucasicum. 3. Blue. Caucasus. 1820. B. M. t. 3188. See also *S. Donii*.
— Donii. 2. Azure. June. Caucasus. Syn., *S. caucasicum* of Swt. Fl. Gard. ser. 2, t. 294.
— cordatum. 2. Cream. June. Transylvania. 1813.

- S. echinatum*. Purple. May. 1824.
— orientale. 3. White. May. Turkey. 1752. B. M. t. 1912.
— peregrinum. 2. July. Podolia. 1816.
— tauricum. 3. White. June. Tauria. 1806. B. M. t. 1787.
— — bullatum. 2½. Pale yellow. June. Caucasus. 1818. Syn., *S. bullatum*. B. C. t. 1862.

Sympie'za. (From *sumpiezo*, to press; the stamens compressed in the tube. Nat. ord., *Ericaceæ*; Tribe, *Ericææ*.)

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, fibry peat. Winter temp., 38° to 45°.

S. capitellata. 1½. July. South Africa. 1812.

Symplocos. (From *sumploke*, a connection; and stamens united. Nat. ord., *Styracææ*.)

Greenhouse evergreen shrubs, except *S. Sumniti*, which requires stove treatment. Cuttings of half-ripened shoots in sand, under a glass; sandy, fibry loam, and a little fibry peat. Winter temp., 40° to 45°. The *coccinea* will require 10° more heat but similar treatment otherwise. *S. sinica* should have a place on a conservatory wall.

- S. coccinea*. Rose. Mexico. 1825.
— cratogeoides. White. April. Nepaul. 1824
— japonica. Yellow. Japan. 1850.
— sinica. 3. White. May. China. 1822.
— Sumniti. Whitish. Summer. Nepaul. 1833. Gf. t. 1073, figs. c-g. Stove.
— tinctoria. 3. Yellow. Carolina. 1780.

Synadenium. (From *sun*, united, and *aden*, a gland; because the glands of the involucre are united in a cup or disc. Nat. ord., *Euphorbiaceæ*; Tribe, *Euphorbiææ*. Allied to *Euphorbia*.)

Stove perennial succulent shrub. For cultivation, see **PEDILANTHUS**.

- S. Gravnii*. 3. Crimson. Central Africa. 1867. B. M. t. 5633.

Syna'ndra. (From *sun*, together, and *aner*, anther; in that the anthers are in pairs. Nat. ord., *Labiataæ*; Tribe, *Stachydeææ*. Allied to *Melittis*.)

Hardy herbaceous perennial. Seeds, and division in spring; dry, sandy soil.

- S. grandiflora*. Yellow. June. N. America. 1827.

Synanthe'rias. (From *sun* together, and *anthera*, an anther. Nat. ord., *Aroideææ*.)

Stove aroid. For culture, see **AMORPHOPHALLUS**.

- S. sylvatica*. Spathe whitish, with green spots; spadix yellow. May. India. B. M. t. 7190. Syn., *Amorphophallus zeylanicus* and *Arum sylvaticum*.

Synaphe'bium. (From *sun*, together, and *phleps*, a vein; the veins on the fronds. Nat. ord., *Filicesæ*.)

Stove, brown-spored ferns. See **FERNES**.

- S. lobulosum*. May. E. Indies.
— obtusum. May. Malacca.
— pectinatum. May. E. Indies.
— recurvatum. May. Malacca.

Synecha'nthus. (From *suneches*, continuous, and *anthos*, a flower; referring to the inflorescence. Nat. ord., *Palmeæ*; Tribe, *Arceæ.*)

Stove palm. For culture, see *CHAMÆDORA*. *S. fibrosus*. 4. Guatemala. B. M. t. 6572.

Syneile'sis. See *Senecio*.

Syngonium. (From *sun*, confluent, and *gone*, the womb; referring to the cohesion of the ovaries. Nat. ord., *Aroidæ*; Tribe, *Philodendrea.*)

Stove evergreen climbers. For cultivation, see *PHILODENDRON*.

S. affine. Green, yellowish. Brazil. Syn., *S. gracile*.

— *albobineatum*. See *S. podophyllum*, var. *albobineatum*.

— *auritum*. Purple, yellow. Jamaica. Five Fingers.

— *gracile*. See *S. affine*.

— *podophyllum a'lbolineatum*. Leaves green, with silvery-grey veinings. Central America. Syns., *S. albobineatum* and *S. Seemannii*.

— *Riedelia'num*. Green, white. Brazil. 1860. A form of *S. Vellozianum*.

— *Vellozia'num*. Green, yellowish. Rio Janeiro.

— *Wendlandii*. Costa Rica.

Synnotia. (In honour of *W. Synnot*, who collected plants in South Africa. Nat. ord., *Iridææ*; Tribe, *Ixiææ.*)

Greenhouse bulbs, all natives of South Africa.

S. bicolor. †. Brown, yellow. March. 1786.

Syns., *Ixia bicolor*, B. M. t. 548; *Gladiolus bicolor*, Jacq. Ic. t. 240; and *Sparaxis bicolor*.

— *galeata*. 1. Brown, yellow. April. 1825. Syns., *Gladiolus galeatus*, Jacq. Ic. t. 255, and *Sparaxis galeata*.

— *variegata*. †. Variegated. May. 1825. Swt. Fl. Gard. t. 150.

Synthyris. (From *sun*, together, and *thyris*, a little door; referring to the valves of the fruit. Nat. ord., *Scrophulariææ.*)

Hardy, perennial herbs. For culture, see *VERONICA*.

S. pinnatifida. †. Dark blue. Rocky Mountains. 1889.

— *reniformis*. †. Pale violet. April. California. 1885. B. M. t. 6860.

Syrian Thistle. *Noto'basis syri'aca*.

Syringa. The Lilac. (From *syrinx*, the Persian name. Nat. ord., *Oleaceæ*; Tribe, *Syringææ.*)

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. amurensis. See *S. japonica*.

— *Bretschneideri*. See *S. villosa*.

— *chine'nsis*. 4. Violet. May. 1795. A hybrid. Syns., *S. dubia* and *S. rothomagensis*.

— *du'bia*. See *S. chinensis*.

— *Emo'di*. 10. White. April. Himalayas. B. R. 1845, t. 6.

— *au'rea*. Leaves blotched with dull yellow. 1886. Garden variety.

S. Emo'di fo'liis variegatis. Garden variety.

— *ro'sea*. See *S. villosa*.

— *hyacinthiflora*. Garden hybrid. 1889.

— *japo'nica*. Creamy white. Japan. G. C. 1886, xxv. p. 561, fig. 123. Syns., *S. amurensis* and *Ligustrina amurensis*.

— *Josike'a*. 8. Deep lilac. June. Germany. 1833. B. M. t. 3278.

— *obla'ta*. 10. Purple. China. 1859. There is a white variety.

— *pekin'e'nsis*. White. North China. Gard. and For. ill., p. 165, fig. 30. Syn., *Ligustrina pekinensis*.

— *pendula*. A variety with drooping branches.

— *persica*. 5. Purple. May. Persia. 1640.

— *a'iba*. 2. White. May. Persia.

— *integrifolia*. Leaves undivided. Syn., *S. persica* of B. M. t. 486.

— *laciniata*. 5. Purple. Leaves incised. May. Persia.

— *sarvifolia*. 5. May.

— *pube'scens*. 3-5. Pale rose. North China. 1888. Gard. and For. 1888, i. p. 414, fig. 67.

— *rothomage'nsis*. See *S. chinensis*.

— *villosa*. 6. Bluish-purple. May. North China. 1880. Syns., *S. Emo'di*, var. *rosea*, and *S. Bretschneideri*.

— *vulgaris*. 8. Red, bluish-violet, or white. May. Persia. 1597. Common lilac; Pipe Tree.

— *a'iba*. 5. White. May. Persia.

— *a'iba-ma'jor*. 5. White. May.

— *a'iba-pl'e'na*. 5. White. May.

— *cæru'lea*. Blue.

— *grandiflora*. Red. Flowers large.

— *purpurea*. Violet-purple.

— *ru'bra*. 10. Red. May.

— *ru'bra-ma'jor*. 10. Red. May.

— *ru'bra-pl'e'na*. 10. Red. May.

— *violacea*. 8. Purple. May. Persia.

B. M. t. 183. Scotch lilac.

Syringa, Mock. *Philadelphus coronarius*.

Syringe. This is a most useful implement for impelling water over plants in pots, wall-trees, etc. 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. In some patterns the water is made to pass through many minute holes; but the syringe is also provided with spare nozzles, so as to deliver the water in a greater body; and with elbows, so that the opposite sides of plants in green-houses may be syringed without moving them. Special syringes for the various insecticides are now before the public, and as all are useful in their way it would be invidious to recommend any one in particular. The one sent out by the Stott Company we have found very effective, but in small places we would strongly recommend Cross's syringes as being most economical. See **Engine**.

Syringo'dea. (From *suriggodes*, fistular; in allusion to the slender pier-

anth tube. Nat. ord., *Irideæ*; Tribe, *Sisyrinchieæ*.)

A pretty little greenhouse bulb, requiring the same treatment as *IXIA*.

S. pulchella. Pale purple. S. Africa. 1873. B. M. t. 6072.

Syzygium. (From *suzugos*, coupled; branches and leaves in pairs. Nat. ord., *Myrtaceæ*; Tribe, *Myrteæ*.) See **Eugenia**.

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 fibry peat. Winter temp., 50° to 60°; summer, 60° to 85°.

S. caryophyllifolium. See *Eugenia caryophyllifolia*.

— *fruticosum*. See *Eugenia fruticosa*.

— *glomeratum*. See *Eugenia glomerata*.

— *inophyllum*. See *Eugenia inophylla*.

— *Jambollanum*. See *Eugenia Jambollana*.

— *obovatum*. See *Eugenia obovata*.

— *paniculatum*. See *Eugenia paniculata*.

— *venosum*. See *Eugenia frondosa*.

— *zeylanicum*. See *Eugenia zeylanica*.

T.

Tabebuia. (From the Brazilian name. Nat. ord., *Bignoniaceæ*.)

Stove trees or shrubs, requiring the same treatment as *TECOMA*. Certain species of *BIGNONIA*, which under that article have been referred to *TABERNÆMONTANA* and *TECOMA*, should be placed in this genus, and are here included as synonyms.

S. œsculifolia. 20. Orange, with yellow spots. June. Mexico. Syns., *Bignonia œsculifolia* and *Tabernæmontana œsculifolia*.

— *chrysantha*. 10. Yellow. Guiana. 1823.

Syns., *Bignonia chrysantha* and *Tecoma chrysantha*.

— *leucostyla*. 12. White or pinkish. West Indies. 1759. Syns., *Bignonia leucostyla* and *B. pallida*.

— *pentaphylla*. 6. Orange. July. East Indies. Syn., *Tecoma pentaphylla*.

— *serratifolia*. 20. Yellow. West Indies. 1822. Syn., *Tecoma serratifolia*.

— *spectabilis*. 10. Purple. West Indies. 1820.

Syns., *Bignonia spectabilis* and *Tecoma spectabilis*. Fl. Ser. t. 948.

Tabernæmontana. (Named after *J. T. Tabernæmontanus*, a celebrated botanist. Nat. ord., *Apocynaceæ*; Tribe, *Plumierieæ*. 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; fibry peat and lumpy loam, with a fair portion of silver sand, and small pieces of charcoal. Winter temp., 55°; summer, 60° to 85°.

T. œsculifolia. The correct name of this is *Tabebuia œsculifolia*.

— *alba*. 10. May. West Indies. 1780. Syn., *T. citrifolia* of Jacquin.

— *Amsonia*. A synonym of *Amsonia Tabernæmontana*.

— *amygdalifolia*. 6. Yellow. July. S. America. 1780. B. R. t. 338.

— *aroudata*. 40. Cream. Peru. 1824.

— *Bartieri*. 6. Western Tropical Africa. B. M. t. 5859.

T. citrifolia. 15. Yellow. Jamaica. 1784.

See also *T. alba*.

— *coronaria*. 5. July. E. Indies. 1770. B. C. t. 406.

— *floré-pléna*. 4. July. W. Indies. 1770.

— *créspa*. 6. July. E. Indies. 1818. Wight. Ic. t. 470.

— *cymosa*. 10. Carthagenia. 1820. Syn., *T. multiflora*.

— *densiflora*. B. R. t. 1273. See *Rauwolfia densiflora*.

— *dichotoma*. 12. September. Ceylon. 1820.

B. R. 1841, t. 53. Syn., *Tanghinia dichotoma*.

— *discolor*. 10. Cream. April. Jamaica. 1822.

— *grandiflora*. 6. Trinidad. 1823.

— *gratissima*. See *T. recurva*.

— *laurifolia*. 13. Yellow. May. W. Indies. 1768. B. R. t. 716.

— *longiflora*. White. Sierra Leone. 1849. B. M. t. 4484.

— *multiflora*. See *T. cymosa*.

— *odorata*. 4. Yellow. October. Cayenne. 1793. Syn., *T. tamaquarina*.

— *persicariifolia*. 6. Cream. Mauritius. 1819. Jacq. Ic. t. 320.

— *recurva*. 6. June. East Indies. 1824. Syn., *T. gratissima*, B. R. t. 1084.

— *tamaquarina*. See *T. odorata*.

— *Wallichiana*. White. India. 1873.

Tacca. (The Malayan name. Nat. ord., *Taccaceæ*.)

Stove, East Indian bulbs, except *artocarpifolia*. Division of the roots in spring; sandy loam and a little fibry peat. Winter temp., 60°; summer, 60° to 90°, and plenty of moisture.

T. artocarpifolia. 6. Green, brown. Madagascar. 1872.

— *aspera*. See *T. integrifolia*.

— *cristata*. 2. Brownish-purple. Summer. Malaya. 1812. B. M. t. 4589. Syn., *Ataccia cristata*, Fl. Ser. tt. 860-1.

— *guineensis*. 2. Guinea. July.

— *integrifolia*. 3. Purple. June. Chittagong. 1810. Herbaceous. B. M. t. 1488.

Syns., *S. aspera* and *Ataccia aspera*.

— *laevis*. 2. Brown. July. 1820.

— *phalifera*. A synonym of *Amorphophallus campanulatus*.

— *pinnatifida*. 2. Purple. 1793. B. C. t. 692.

Tacca'rum. (So named on account of a resemblance to the genus *Tacca*. Nat. ord., *Aroidæ*; Tribe, *Dieffenbachia*.)

Stove, tuberous perennial. For culture, see *STAUROSTIGMA*.

T. peregrinum. See *Lysistigma peregrinum*.

— *Warmingianum*. Spathe olive green, streaked with white, the interior flushed with pink; spadix pink. Winter. 1881. G. C. 1881, xvi. p. 654, fig. 134.

Tachia. (The Guianan name. Nat. ord., *Gentianeæ*; Tribe, *Chironieæ*.)

See **Leianthus**.

Stove, yellow-flowered evergreens, from Jamaica. Cuttings of half-ripened shoots in sand, under a bell-glass, in May; sandy, fibry peat, and a very little loam and leaf-mould. Winter temp., 55°, and kept in a dryish atmosphere; summer, 60° to 80°, and moist.

T. cordifolia. 2. 1816. Syn., *Leianthus cordifolius*.

— *longifolia*. 13. July. 1793. Syn., *Leianthus longifolius*.

— *Swa'tzikii*. 10. July. 1793. Syn., *Leianthus ezertus*.

Tachiade' nus. (From *Tachia*, the name of another genus, and *aden*, a gland; because the ovary is surrounded by a ring of glands as in *Tachia*. Nat. ord., *Gentianeæ*; Tribe, *Ecaceæ*.)

Stove shrub. Cuttings in sand under a hand-glass in heat. Peat, sand, and loam. Keep rather dry in winter.

T. carinata. Purple. October. Madagascar. 1858. B. M. t. 5094.

— *radia'tus*. Wien. Gart. Zeit. 1889, p. 113. Probably synonymous with *T. carinata*.

Tachigalia. (From the Guianese name, *Tachigali*. Nat. ord. *Leguminosæ*; Tribe, *Amherstieæ*. 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 hot-bed; sandy, fibry loam. Winter temp., 50° to 55°; summer, 60° to 80°.

T. bijuga. 20. Brazil. 1822.

— *panicula'ta*. 60. Guiana. 1827.

Tacso'nia. (From *tacso*, the name of one of them in Peru. Nat. ord., *Passifloraceæ*; Tribe, *Passiflorææ*.) Sometimes regarded as a section of **Passiflora**, from which it can be readily distinguished by the elongated calyx tube.

Half-hardy evergreen climbers. Cuttings of young shoots any time in summer; fibry loam and a little sandy peat and leaf-mould. Fruit of *T. mollissima* is eatable.

T. adulterina. New Grenada.

— *Andersoni*. Garden hybrid. G. C. 1875, p. 167.

— *Buchanani*. See *Passiflora vitifolia*.

— *eriantha*. See *T. mixta*, var. *eriantha*.

— *exoniensis*. Bright rosy-pink; throat violet. A hybrid between *T. mollissima* and *T. Van-Volzemii*. 1872.

— *igneæ*. See *T. manicata*.

— *insignis*. Crimson. Bolivia. 1873. Flor. Mag. n. s. t. 89. Syn., *Passiflora insignis*. B. M. t. 6069.

— *manicata*. Scarlet. July. Columbia. 1873. Syn., *Passiflora manicata*. B. M. t. 6129.

— *mixta*. Pink. August. Andes.

— *eriantha*. Pink. Plant covered with white pubescence. Syn., *T. eriantha*. B. M. t. 5750.

— *quite'nsis*. Rose-pink. July. Peru. 1867. Syn., *T. quitensis*, var. *eriantha*.

— *speciosa*. Rosy-red. Stem glabrous. Columbia. 1871. Syn., *T. speciosa*.

— *mollissima*. 20. Rose. September. Quito. 1844.

— *Parrictæ*. Rosy and rich orange. Tolima. 1882. G. C. 1882, xvii., p. 225.

— *peduncularis*. 10. Rose. Peru. 1815.

— *pinnatistipula*. 30. Pale rose. September. Chili. 1828. B. R. t. 1536. Syn., *Passiflora pinnatistipula*.

— *quadridentata*. } See *Passiflora quadri-*
— *quadriglandulosa*. } *glandulosa*.

— *quite'nsis*. Rosy. Peru. 1869.

— *eriantha*. See *T. mixta*, var. *quitensis*.

— *sanguinea*. Crimson. July. Trinidad. 1852.

— *speciosa*. See *T. mixta*, var. *speciosa*.

— *Smythiana*. Garden hybrid. 1892.

— *tomentosa*. Rosy-red. Columbia. 1870.

— *Van-Volzemii*. Crimson. New Grenada. 1866. B. M. t. 5571. One of the finest.

Tænio'psis. (From *tainia*, a fillet, and *opsis*, like; the resemblance of the leaf, or frond. Nat. ord., *Filices*.) See **Vittaria**.

Stove, brown-spored ferns. See **FERNs**.

T. lineata. See *Vittaria lineata*.

— *revoluta*. See *Vittaria revoluta*.

Tæni'tis. (From *tainia*, a fillet; the resemblance of the fronds, or leaves. Nat. ord., *Filices*.)

Stove, brown-spored ferns. See **FERNs**.

T. angustifolia. $\frac{1}{2}$. July. Jamaica. 1816.

— *blechnoides*. May. India.

— *interrupta*. Sori not continuous.

— *chinensis*. June. China. 1828.

— *furcata*. June. Trinidad. 1824.

— *graminifolia*. $\frac{1}{2}$. July. Trinidad. 1820.

— *lancoleta*. 1. August. W. Indies. 1818.

Tagetes. (Named after a Tuscan divinity. Nat. ord., *Compositæ*; Tribe, *Helenioideæ*.)

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. *T. lucida* is pretty either for a cool greenhouse or a bed on the lawn in summer.

T. angustifolia. 3. August. 1826.

— *caracasana*. 3. August. Caraccas. 1819.

— *clandestina*. 3. July. 1823.

— *corymbosa*. Swt. Fl. Gard. t. 151. See *T. patula*.

— *daucoi'des*. June.

— *ere'cta*. 3. July. 1596. African Marigold.

— *filifolia*. 3. August. 1826.

— *florida*. 1. August. 1827. Herbaceous.

Swt. Fl. Gard. ser. 2, t. 35.

— *gigantea*. 6-9. Bolivia. 1886.

— *glandulifera*. 6. October. 1826.

— *glandulosa*. 3. September. S. America. 1819.

— *lucida*. 1. August. S. America. 1798.

Herbaceous. B. M. t. 740.

— *micrantha*. 3. August. 1822.

— *minuta*. 2. August. Chili. 1728.

— *patula*. 2. August. 1573. B. M. t. 160.

Syn., *T. corymbosa*. B. M. t. 3830.

French Marigold.

— *lutea*. $1\frac{1}{2}$. August. 1825.

— *signata*. $1\frac{1}{2}$. Yellow. Mexico.

— *subvillosa*. 2. September. 1823.

— *tenuifolia*. 3. August. Peru. 1797. B. M. t. 2045.

Tail Flower. *Anthurium*.

Tainia. (From *tainia*, a band; in allusion to the shape of the lip. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Bletieæ*. Syn., *Ania*.)

Stove orchids. For culture, see **CALANTHE**.

T. bicornis. Green, reddish; lip yellow, blotched with red. March. Ceylon. 1842. Syn.,

Ania bicornis. B. R. 1844, t. 8.

— *latifolia*. 2. Green, brown. April. Sylhet.

1852. Syn., *Calanthe viridifusca*. B. M. t. 4669.

Talau'ma. (Its South American name. Nat. ord., *Magnoliaceæ*; Tribe, *Magnolieæ*.)

Stove evergreens. Cuttings of ripe shoots, thinly, in sand, under a large bell-glass, in heat;

grafting and inarching on *Magnolia obovata*; fibry peat and a little loam and sand. Winter temp., 45° to 55°; summer, 60° to 80°

T. Cando'llii. 15. Cream-colour. April. Java. 1827. B. M. t. 4251. Syn., *Magnolia odoratissima*.

— *Galeottiana*. Dull yellow. B. M. t. 6614.

— *Hodgeoni*. Creamy-white. Winter. Himalayas. 1857.

— *Plumieri*. 60. White. Antilles. 1829.

— *pu'nta*. 3. Cream. Java. 1786. Syn., *Magnolia pumila*. Andr. Rep. t. 226.

Talewort. *Bora'go officinalis*.

Talie'ra. (The Indian name. Nat. ord., *Palmeæ*; Tribe, *Corypheeæ*.) See **Corypha**.

Stove palm. Seeds; rich, turfy loam. Winter temp., 50° to 60°; summer, 60° to 90°.

T. bengale'nsis. See *Corypha Tali'era*.

Taliga'lea. (From the Guianese name. Nat. ord., *Verbenaceæ*.) A synonym of **Amasonia**.

Stove sub-shrubs.

T. campestris. A synonym of *Amasonia campestris*.

— *puni'cea*. A synonym of *Amasonia calycina*. B. M. t. 6916.

Talbotia. See **Vellozia**.

Tali'num. (From *thalia*, a green branch; its durable verdure. Nat. ord., *Portulacææ*.)

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 under-shrubs, 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, ETC.

T. purpureum. Purple. August. Mexico. 1826.

— *reflexum*. 1. Yellow. September. S. America. 1800. Biennial. B. M. t. 1543.

EVERGREENS, ETC.

T. Arno'tii. 1½. Yellow. S. Africa. 1867.

— *crassifolium*. 1. Red. August. 1800.

— *albiflorum*. White. July. S. America. 1819.

— *cuneifolium*. 1. Purple. August. Egypt. 1820.

— *pa'tens*. 1. Red. September. S. America. 1776. Herbaceous. Andr. Rep. t. 253.

— *teretifolium*. 1. Pink. August. N. America. 1823. Herbaceous. B. R. 1843. t. 1.

— *triangularis*. ¾. Yellow. August. W. Indies. 1739.

EXCLUDED SPECIES.

T. Anacampseros = *Anacampseros Telephiatrum*.

— *Andre'wsii* = *Calandrinia Andrewsii*.

— *ciliatum* = *Calandrinia ciliata*.

— *paniculatum* = *Calandrinia paniculata*.

— *pa'tens* = *Calandrinia Andrewsii*.

— *polyandra*, B. M. t. 4833, = *Calandrinia polyandra*.

Talipot Palm. *Cory'pha umbraculifera*.

Tali'sia. (From *Toulichis*, the name in Guiana. Nat. ord., *Sapindacææ*; Tribe, *Sapindeæ*.)

Stove evergreen shrubs. Cuttings of ripened wood, with leaves, thinly inserted in sand, under

a glass, in moist bottom-heat; sandy peat and fibry loam. Winter temp., 50° to 60°; summer, 60° to 85°.

T. gusané'nsis. 8. Rose. Guiana. 1824. Syn., *T. rosea*.

— *princeps*. Whitish. Leaves pinnate, six feet long. Venezuela. Syns., *Brounea erecta*, *B. princeps*, and *Theophrasta pinnata*.

Tallow Shrub. *My'rica cerifera*.

Tallow Tree, Chinese. *Stil'lingia sebifera*.

Tallow Tree, Sierra Leone. *Pentadé'sma butyro'cea*.

Tamarind Tree. *Tamari'ndus indica*.

Tamari'ndus. Tamarind-tree. (From *Tamarlindy*, the Arabic name. Nat. ord., *Leguminosæ*; Tribe, *Amherstiacæ*.)

Stove, yellow-flowered, evergreen trees. 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. indica. 60. July. Tropics. 1633. Lem. Jard. Fl. t. 133. Syns., *T. occidentalis* and *T. officinalis*.

— *occidentalis*. See *T. indica*.

— *officinalis*. B. M. t. 4563. 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., *Tamariscineæ*; Tribe, *Tamariscææ*.)

Hardy, by cuttings under a hand-light, or even in the open air, in spring or autumn, and in 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. davurica. A synonym of *Myricaria davurica*.

— *gallica*. 10. Flesh. July. England. Deciduous. Sibth. Fl. Gr. t. 291.

— *germanica*. A synonym of *Myricaria germanica*.

— *odessa'na*. Odessa. 1891.

— *Pallasii*. 8. Flame. July. Caucasus. 1827.

— *parviflora*. Pink. Summer. Levant. Syns., *T. africana* and *T. tetrandra* of some authors. Fl. Ser. t. 898.

— *tetrandra*. 6. White. July. Tauria. 1821. See also *T. parviflora*.

STOVE AND GREENHOUSE EVERGREENS.

T. articulata. 10. Pink. Arabia, Persia, and India. Syn., *T. orientalis*. Greenhouse.

— *dic'ca*. 6. East Indies. 1823.

— *indica*. 6. Pink. July. East Indies.

— *orientalis*. See *T. articulata*.

Tamone'a. (From *tamone*, the Guianan name. Nat. ord., *Verbenaceæ*; Tribe, *Verbeneæ*. Allied to *Lantana*.)

Tender, blue-flowered biennials. By seed in a hotbed in spring; pricked out, and potted off, and blossomed in the greenhouse.

T. Curassavica. 1. July. W. Indies. 1823. Syn., *T. verbenacea*.

— *mutica*. 1. July. Guiana. 1820.

— *spicata*. September. Trinidad. 1824.

— *verbenacea*. See *T. Curassavica*.

Ta'mus. (A name used by Pliny. Nat. ord., *Dioscoreacææ*.)

Hardy perennial twiner, whose leaves turn a beautiful bronze in autumn. Ordinary garden-soil. Seeds, or division of roots.

T. commutata. 10. Greenish; fruit bright scarlet. May to June. England. Eng. Bot. ed. 3, t. 1508. Black Bryony; Lady's Seal; Murrain Berries.
— *elephantipes*. B. M. t. 1347. See *Testudinaria elephantipes*.

Tan. See **Bark.**

Tanacetum. Tansy. (Derivation uncertain. Nat. ord., *Compositæ*; Tribe, *Anthemideæ*.)

Hardy herbaceous perennials. Divisions in spring, and cuttings under a hand-light in summer; any soil. *T. grandiflorum* requires a cool greenhouse or a cold pit in winter, and a sandy, fibry loam.

T. Balsamita. 2-3. Yellow. Autumn. Orient. Syn., *Balsamita vulgaris*.
— *elegantis*. See *T. huronense*.
— *flabelliforme*. B. M. t. 212. See *Pentzia flabelliformis*.
— *fruticosum bracteatum*. Yellowish. India. 1877.
— *grandiflorum*. 1½. Yellow. June. Cape of Good Hope. 1820.
— *huronense*. Yellow. July. California. 1857. Syn., *T. elegantis*. Fl. Ser. t. 1191.
— *leucophyllum*. ¾. Golden-yellow. Summer. Turkestan. Gh. t. 1064.
— *purpureum*. 1½. Pale red. June. Nepal. 1811.
— *vulgaris*. 2. Yellow. June. Britain. Eng. Bot. ed. 3, t. 716.
— — *variegatum*. 2. Yellow. July. Britain.

Tanghinia. (From *Tanghin*, the Madagascar name. Nat. ord., *Apocynaceæ*.) See **Cerbera**.

Stove, white-flowered evergreens, from the East Indies. Cuttings of half-ripened shoots in sand, under a bell-glass, in heat; peat and loam, with a little sand. Winter temp., 50° to 60°; summer, 60° to 90°. The nut of *veneniflua*, though not larger than an almond, is sufficient to poison a score of people.

T. dichotoma. See *Tabernaemontana dichotoma*.
— *laurifolia*. See *Cerbera laurifolia*.
— *Manghas*. Kn. and West. t. 78. See *Cerbera Manghas*.
— *Odollam*. Wight. Ic. t. 441. See *Cerbera Odollam*.
— *veneniflua*. Kn. and West. t. 67. See *Cerbera veneniflua*.

Tangier Pea. *Lathyrus tingitana*.

Tanner's Tree. *Cordia myrsinifolia*.

Tansy. *Tanacetum vulgare*.

Tape Grass. *Vallisneria spiralis*.

Tapeinanthus. (From *tapeinos*, low, and *anthos*, flower; a plant of dwarf habit. Nat. ord., *Amaryllidææ*.)

The only species of this genus is a hardy bulb, difficult of cultivation in this country.

T. humilis. ¾. Yellow. Spain and Tangiers. 1837.

Tapeinotes. (From *tapeinotes*, lowliness; very dwarf. Nat. ord., *Ges-*

neraceæ; Tribe, *Gesneraceæ*.) See **Sinningia**.

Stove plant. For cultivation, see **NEMATANTHUS**.

T. Carolinæ. B. M. t. 5623. See *Sinningia barbata*.

Tapogomea. (From the Guianese name, *tapogoma*. Nat. ord., *Rubiaceæ*; Tribe, *Psychotriaceæ*.) See **Cephaelis**.

T. purpurea. See *Cephaelis purpurea*.

— *violacea*. See *Cephaelis violacea*.

Taraxacum. (From *tarasso*, to alter; its supposed medicinal effect. Nat. ord., *Compositæ*; Tribe, *Cichoraceæ*.)

Hardy, perennial herbs, almost stemless. Ordinary garden-soil. Propagated by divisions. Although they will produce seeds readily, they should never be allowed to do so, as they spread with great rapidity, and on account of the depth to which the tap-roots descend are difficult to eradicate. *T. officinale* is grown as a salad plant; its roots are also dried and used as a kind of coffee.

T. montanum. Yellow. August. Armenia. 1834. Syn., *Lasiopus sonchoides*, Swt. Fl. Gard. ser. 2, t. 346.

— *officinale*. Yellow. March to October. Britain. Eng. Bot. ed. 3, t. 802. Common Dandelion.

Tarchonanthus. African Fleabane. (From *tarchon*, Arabic for tarragon, and *anthos*, a flower. Nat. ord., *Compositæ*; Tribe, *Inuloidææ*.)

Greenhouse, purple-flowered evergreens, from South Africa. Cuttings in sand, under a bell-glass, in the beginning of summer; fibry, sandy loam and a little leaf-mould. Winter temp., 40° to 48°.

T. camphoratus. 10. 1690. B. C. t. 382.

— *dentata*. A synonym of *Brachylaena nervifolia*.

— *ellipticus*. A synonym of *Brachylaena elliptica*.

Taro. *Colocasia antiquorum*. This plant forms one of the chief articles of diet in the Pacific Isles, where it is largely cultivated. The tubers are boiled or baked, or made into puddings or bread, and the young leaves may be eaten like Spinach; but, like the tubers, they require to be well cooked to destroy their poisonous properties and acidity. Several varieties are cultivated, some being better for one mode of cooking, some for another. Dr. Seemann relates that one kind, called "Kurilagi," was pointed out to him as having been eaten with nearly a whole tribe of people, in the island of Viti Levu. This tribe, having given great offence to the ruling chief of the district, was condemned to die. Every year the inmates of one house were baked and eaten, the empty dwelling burnt down, and its foundation planted with "Kurilagi." The next year, when this Taro was ripe, it was the signal for destroying the next house

and its inhabitants, and the planting of a fresh field of Taro. After many years the remaining few were pardoned, and allowed to die a natural death, and in 1860 one old woman was the only survivor of the tribe. See Seemann's "Flora Vitiensis."

Tarragon. (*Artemisia dracunculoides*). 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 end of May.

Plant ten inches apart, and, if dry weather, water must be given regularly every evening until the plants 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., *Magnoliaceae*; Tribe, *Winteraceae*. Allied to *Illicium*.)

The fruit of *T. aromatica* is used for pepper in Australia. Greenhouse, Australian, white-flowered evergreens. Cuttings of firm shoots in sand, under a bell-glass; kept cool at first, and then, when the base swells, placed in a sweet, mild bottom-heat. Fibry, sandy loam, with a little peat; require the protection of a cold pit in winter.

T. aromatica. B. R. 1845, t. 43. See *Drimys aromatica*.

Tasteless Mountain Currant. *Ribes alpinum*.

Tausche'ria. (In honour of Ignatius F. Vauscher, once Professor of Botany at Prague. Nat. ord., *Cruciferae*; Tribe, *Isatideae*.)

Hardy annual, of little horticultural value. *T. lasiocarpa*. Yellow. Central Asia.

Tavernie'ra. (After J. B. Tavernier, a traveller in the Levant, in the seventeenth century. Nat. ord., *Leguminosae*; Tribe, *Hedysareae*.)

Greenhouse undershrubs.

T. lappa'cea. Yellow. July. Arabia Felix. 1820.

— *nummularia*. 1-2. Red. June. India, 1826. East Indian Moneywort.

Taxa'nthema. (From *taxis*, arrangement, and *antheon*, a flower. Nat. ord., *Plumbaginaceae*; Tribe, *Staticeae*.) A synonym of **Statice**.

T. austr'alis. See *Statice australis*.

— *inca'na*. Swt. Fl. Gard. t. 272. See *Statice*

— *speciosa*. Swt. Fl. Gard. t. 105. See *Statice*

— *speciosa*.

— *tata'rica*. Swt. Fl. Gard. t. 37. See *Statice tatarica*.

Taxo'dium. Deciduous Cypress. (From *taxus*, the yew, and *oides*, like. Nat. ord., *Coniferae*; Tribe, *Taxodiaceae*. Syn. *Glyptostrobus*.)

Hardy or half-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 plants 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'nsis. See *Widdringtonia juniperoides*.

— *distichum*. 50. May. N. Amer. 1640.

— *denu'datum*. Syn., *T. denudatum*.

— *exce'lsum*. See *T. mucronatum*.

— *fastigia'tum*. Florida.

— *mexica'num*. See *T. mucronatum*.

— *microphyllum*. May. Syn., *T. distichum*, var. *pendulum*, *T. pendulum*, and *Glyptostrobus pendulus*, B. M. t. 5603.

— *na'num*. 10.

— *nuciferum*. See *Torreya nucifera*.

— *nutans*. 20. May.

— *pa'tens*. See *T. distichum*, var. *nutans*.

— *sempervi'rens*. 50. Yellow. New Zealand. 1843. Evergreen.

— *sine'nsis*. 20. May. N. China. Syn.,

T. sinense and *Glyptostrobus sinensis*.

— *heterophyllum*. 10. China. Embossed Cy-

press. Syn., *Glyptostrobus heterophyllus*.

— *japo'nicum*. See *Cryptomeria japonica*.

— *mexica'num*. See *T. mucronatum*.

— *mucrona'tum*. 120. Mexico. Syn., *T.*

distichum, var. *exce'lsum* and var. *mexi-*

canum, and *T. mexicanum*.

— *pe'ndulum*. See *T. distichum*, var. *micro-*

phyllum.

— *sine'nsis*. See *T. distichum*, var. *sinense*.

Taxus. The Yew. (From *taxon*, a bow; being used for bows. Nat. ord., *Coniferae*; Tribe, *Taxaceae*.)

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, ten 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. See *T. baccata*, var. *adpressa*.

— *bacca'ta*. 10-50. March. Britain. Common

Yew. There are numerous varieties,

such as:—

— *adpre'ssa*. S. Japan. 1844. Syn., *T.*

adpressa, *T. tardiva*, and *Cephalotaxus*

tardiva. Forms of this are:—*erecta*,

stricta, and *variegata*.

— *argentea*. Leaves silvery striped.

— *Barro'ni*. See *T. baccata*, var. *variegata*.

- T. baccata cheshuntensis*.
 — *Dovastoni*. Branchlets drooping.
 — *variegata*. Leaves edged with golden-yellow when young, with silvery-white when old.
 — *Elvastonensis*. Young leaves bright orange.
 — *epacrisoides*. Dwarf. Leaves light green.
 — *ereceta*. Fulham Yew; Upright Common Yew. There is a form *Crowderi*.
 — *ericoides*. 1-2. Leaves small, dark green.
 — *fastigiata*. 20. April. Ireland. 1780. Irish or Florence Court Yew.
 — *au-reo-variegata*. Golden-variegated form.
 — *variegata*. Silvery-white or straw-coloured variegated form.
 — *Foxtii*. 2. Leaves dark green.
 — *fructu-luteo* is a handsome yellow-berried variety.
 — *glauca*. Leaves bluish or greyish beneath.
 — *Jacksoni*. Leaves light green. Branches pendulous.
 — *naana*. 2. Leaves dark, glossy green.
 — *niopathensis*. A variety of columnar habit.
 — *procumbens*. 8. February. Europe.
 — *recurvata*. Margins of leaves involute.
 — *sparsifolia*. March. Branches spreading.
 — *variegata*. Leaves edged with golden-yellow. *Barroni* is a freely fruiting form of this.
 — *Wallichiana*. See *T. Wallichiana*.
 — *brevifolia*. 40. California. Syn., *T. Lindleyana*. Western or California Yew.
 — *canadensis*. 4. North America. 1800. American Yew; Ground Hemlock.
 — *variegata*. Leaves variegated with white.
 — *cuspidata*. 20. Japan.
 — *empetrifolia*. See *T. baccata*, var. *ericoides*.
 — *Fortunei*. See *Cephalotaxus Fortunei*.
 — *globosa*. Mexico. Mexican Yew.
 — *Harringtonii*. See *Cephalotaxus pedunculata*.
 — *Inukaja*. See *Cephalotaxus pedunculata*.
 — *Lindleyana*. See *T. brevifolia*.
 — *Makoya*. See *Podocarpus chinensis*.
 — *nucifera*. See *Torreya nucifera*.
 — *taraii*. See *T. baccata*, var. *adpressa*.
 — *Wallichiana*. Nepaul. Syn., *T. baccata*, var. *Wallichiana*.

Tea. The dried leaves of *Came'llia theifera*.

Tea Berry or Canada Tea. *Qualthe'ria procumbens*.

Tea, Botany Bay. *Smit'ia glycyphylla*.

Tea, Paraguay. *Ilex paraguariensis*.

Tea Tree. *Ly'cium ba'rbarum*.

Teak Tree, African. *Oldfie'ldia africa'na*.

Teak Tree, Indian. *Te'ctona gr'andis*.

Teak Tree, New Zealand. *Vitex littoralis*.

Teasel, Teazel, or Teazle. *Dipsac'us*.

Te'coma. (A contraction of the Mexican name, *Tecomacochili*. Nat. ord., *Bignoniaceae*; Tribe, *Tecomae*.)

Mostly by cuttings; the hardy *radicans* 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 *capensis* makes a neat pot-plant. Under the article *BIGNONIA* several species have been referred to this genus, which should have been placed in *TABEBUIA*.

HARDY EVERGREEN CLIMBERS.

- T. radicans*. 30. Orange. July. N. America. 1640. Syn., *Bignonia radicans*, B. M. t. 485.
 — *major*. 30. Orange. July. N. America. 1640.
 — *minor*. 20. Scarlet. July. N. America. 1640.

GREENHOUSE EVERGREEN CLIMBERS, ETC.

- T. australis*. Orange. June. N. S. Wales. 1793. Syn., *T. diversifolia*, *Bignonia meonantha* and *B. Pandorea*.
 — *capensis*. 8. Orange. August. Cape of Good Hope. 1823. B. R. t. 1117.
 — *diversifolia*. See *T. australis*.
 — *grandiflora*. 30. Orange. July. China. 1800. Deciduous. Syn., *Bignonia chinensis* and *B. grandiflora*.
 — *jasmifolia*. Pink. August. N. S. Wales. Syn., *Bignonia jasmifolia*.
 — *Mackeei*. See *T. Ricasoliana*.
 — *meonantha*. 12. Blush. April. Australia. 1815.
 — *molle*. 6. Yellow. Mexico. 1824. Deciduous.
 — *Ricasoliana*. Rose-pink, with darker veins. South Africa. 1887. Bull. Soc. Tosc. 1887, xviii. p. 17, t. 1-2. Syn., *T. Mackeei*.
 — *Smit'ia*. Garden hybrid between *T. velutina* and *T. capensis*, raised in South Australia.

STOVE EVERGREEN SHRUBS.

- T. amboinensis*. Orange-red. Amboina. Climber.
 — *au'stro-caledonia*. White. New Caledonia. Syn., *Pandorea austro-caledonica*.
 — *chilensis*. Scarlet. Spring. Chili. 1870. Syn., *Campsidium chilense*.
 — *chrysantha*. See *Tabebuia chrysantha*.
 — *digitata*. 6. Yellow. South America. 1818.
 — *filicifolia*. Fiji Islands. 1873. Syn., *Campsidium filicifolium*.
 — *fulva*. Red. Yellow. November. Peru. B. M. t. 4896.
 — *incisa*. See *T. stans*, var. *apifolia*.
 — *leucoxylon*. 12. Pink. West Indies. 1759. Syn., *Bignonia leucoxylon*.
 — *mira'bilis*. See *T. valdiviana*.
 — *pentaphylla*. See *Tabebuia pentaphylla*.
 — *roseifolia*. 6. Yellow. Peru.
 — *sambucifolia*. 6. Yellow. Peru. 1824.
 — *serratifolia*. See *Tabebuia serratifolia*.
 — *sorbifolia*. 6. Yellow. South America.
 — *spectabilis*. See *Tabebuia spectabilis*.
 — *splendida*. 6. Yellow. Brazil. 1820. Syn., *Esterhazyia splendida*.
 — *stans*. 12. Yellow. August. S. America. 1780. B. M. t. 3191. Syn., *Bignonia stans*.
 — *apifolia*. 10. Yellow. August. S. America. 1820. Syns., *T. incisa*, *T. stans*, var. *incisa*, and *Bignonia incisa*.
 — *undulata*. Orange. Summer. India. Syn., *Bignonia undulata*.
 — *valdiviana*. Orange. Spring. Chili. 1870. Syn., *T. mirabilis*.
 — *xylocarpa*. See *Stereospermum xylocarpum*.

Tecophilæa. (Named after *Tecophila*, a daughter of Bertero. Nat. ord., *Hæmodoraceæ*; Tribe, *Conanthe-reæ*.)

Greenhouse bulbs. Seeds; offsets. Rich sandy loam; the bulbs should be kept dry during their period of rest. Summer temp., 60° to 86°; winter, 45° to 55°. This genus is remarkable for its half-inferior ovary, which peculiarity renders its position somewhat doubtful, being in this respect exactly intermediate between the *Amaryllidaceæ*, which are characterized by their inferior ovary, and the *Liliaceæ*, which have a superior ovary.

T. cyanocrocus. Blue; throat whitish. Juan Fernandez. 1872.
— — *Leichtlinii.* Deep blue. 1882. Syn., *T. Leichtlinii.*
— — *Regei.* Blue. Perianth segments narrower than in the type. Syn., *T. cyanocrocus* of Gf. t. 718.

Te'ctona. Teak-tree. (The Malabar name is *tekka*. Nat. ord., *Verbenaceæ*; Tribe, *Viticeæ*.)

For ship-building 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 fibry peat. Winter temp., 50° to 55°; summer, 60° to 85°. *T. grandis.* 100. White. E. Indies. 1777.

Teedia. (Named after J. G. Teede, a German botanist and traveller. Nat. ord., *Scrophulariaceæ*; Tribe, *Cheloneæ*. Alliance near to *Phygellus*.)

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. lucida. 2. April. 1774. B. R. t. 209.
— *pubescens.* 2. May. 1816. B. R. t. 214.

Teesdalia. (Named after R. Teesdale, author of a Flora of Castle Howard. Nat. ord., *Cruciferaæ*; Tribe, *Thlasvideæ*. Allied to Candytuft.)

Hardy, white-flowered annuals. Seeds; common soil.

T. Iberis. See *T. nudicaulis*.
— *Lepidium.* †. March. South Europe. 1824.
— *nudicaulis.* †. May. Britain. Syn. *T. Iberis*. Pepper Cress.

Tela'nthera. (From *teleois*, complete, and *anthera*, an anther. Nat. ord., *Amarantaceæ*; Tribe, *Gomphreneæ*.)

Half-hardy herbaceous plants, chiefly used for carpet bedding. Divisions and cuttings. To obtain the latter, trim back old plants about March, and plunge in a hotbed, when they soon produce cuttings, which will root freely in leaf-mould and sand in heat; box off in rich light soil and keep in heat until well established, then gradually shift them to houses of lower temperature, so as to be ready for bedding out. They are cultivated under the name of ALTERNANTHERA.

T. amœna. Leaves variegated with rose, brown, and green. Brazil. 1865.
— — *ambilis.* Leaves green, red, and rose. Brazil. 1868.
— — *tricolor.* Leaves dark green, variegated with rose, purple, and orange-yellow. Brazil. 1862.

T. Bettziehiana. Leaves olive and red. Brazil. 1862.

— — *spathulata.* Stem and leaves red. Brazil. 1865.

— *cane-scens.* 1. White. July. Cumana. 1825. Syn., *Alternanthera canescens*.

— *caracasana.* 1. White. July. Caraccas. 1819. Syn., *Alternanthera caracasana*.

— *ficolor.* Leaves variegated with green, rose, and red. India. 1865. Useful as a bedding plant.

— *polygonoïdes.* 1. White. July. S. America. 1731. Syn., *Alternanthera polygonoïdes*.
— *versicolor.* Leaves rose, green, and dark blood-red. Brazil. 1865.

Telegraph-Plant. *Desmodium gy-rans.*

Tele'kia. (Name not explained. Nat. ord., *Compositæ*; Tribe, *Inuloideæ*.) A synonym of *Bupthalmum*.

Hardy herbaceous. Seeds, and divisions of the root in spring; common soil.

T. speciosa. B. M. t. 3466. See *Bupthalmum cordifolium*.

Telfairia. (Named in honour of Mrs. Telfair. Nat. ord., *Cucurbitaceæ*; Tribe, *Cucumerineæ*.)

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. occidentalis. White, purple. Autumn. W. Tropical Africa. 1870. B. M. t. 6272.

— *pedata.* 20. Pink. July. Zanzibar. 1825. B. M. t. 2751-2. Syns., *Fevillea pedata*, B. M. t. 2681, and *Joliffia africana*.

Telip'ogon. (From *telos*, the summit, and *pogon*, a beard; the column is bearded to its summit. Nat. ord., *Orchideæ*; Tribe, *Vandæ-Notylieæ*. Allied to *Acropis*.)

Stove epiphytal orchid. Should be grown on blocks. See ORCHIDS.

T. Croesus. Yellow, with dark network. Columbia. 1877.

Te'llima. (An anagram of *Mitella*; separated from the genus *Mitella*. Nat. ord., *Saxifragaceæ*; Tribe, *Saxifrageæ*.)

Hardy herbaceous. Division; sandy loam and peat.

T. grandiflora. 1. Pink. April. North West America. 1826. B. E. t. 1178.

Telo'pea. Warratah. (From *telo-pas*, seen at a distance; conspicuous flowers. Nat. ord., *Proteaceæ*; Tribe, *Embothriæ*.)

This is the finest of all the *Proteaceæ*. Greenhouse evergreen. Cuttings of ripe shoots with leaves on, except 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. speciosissima. 10. Scarlet. June. N. S. Wales. 1789. Syn., *Embothrium spathulatum*, B. M. t. 1128, and *E. speciosum*.

Temasia *Woeberana*. See **Py-rus**.

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 respire 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., *Leguminosæ*; Tribe, *Genisteæ*. Allied to *Boissiaea*.)

Greenhouse, red-flowered evergreens, from Australia. Cuttings of half-ripened wood in sand, under a bell-glass; fibry peat and sandy loam, most of the first, with a little charcoal. Winter temp., 40° to 48°.

T. glauca. B. M. t. 2088. See *T. retusa*.
— *retusa*. 2. May. 1803. B. M. t. 2334. Syn., *T. glauca*.

Te'naris. (Probably derived from the South African name. Nat. ord., *Asclepiadaceæ*; Tribe, *Marsdeniææ*.)

Greenhouse, perennial herbs. For culture, see **CEROPEGIA**.

T. rostrata. 1½. Whitish, with minute purple dots. East Tropical Africa. 1885.

Teno'ria. (After *Prof. Tenore*, of Naples. Nat. ord., *Umbelliferae*; Tribe, *Ammineæ*.) A synonym of **Bupleurum**.

T. arbore'scens. See *Heteromorpha arbore'scens*.
— *canad'e'nsis*. See *Crithmum latifolium*.
— *cori'cea*. See *Bupleurum gibraltarium*.
— *frut'scens*. See *Bupleurum frutescens*.
— *frutico'sum*. See *Bupleurum fruticosum*.
— *plantagi'neum*. See *Bupleurum plantagineum*.

Tentaculate, furnished with thread-like appendages.

Tepals. A name used by Prof. H. G. Reichenbach to designate the inner perianth segments, or petals, of Orchids.

Tephro'sia. (From *tephros*, ash-grey; colour of some of the species.

Nat. ord., *Leguminosæ*; Tribe, *Galegeæ*. 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, fibry loam and peat. Greenhouse or stove temperatures.

GREENHOUSE EVERGREENS, ETC.

T. cape'nsis. 1. Purple. July. Cape of Good Hope. 1825.
— *chine'nsis*. Purple. July. China. 1822.
— *grandiflo'ra*. 4. Pink. June. Cape of Good Hope. 1774. B. R. t. 769.
— *micron'data*. 2. Pale red. June. Cape of Good Hope. 1823.
— *seri'cea*. 1. Red. July. Cape of Good Hope. 1800.
— *stri'cta*. 3. Pink. June. Cape of Good Hope. 1774. Syn., *Indigophora stricta*. Jacq. H. Schoenb. t. 236.

STOVE EVERGREENS, ETC.

T. Apoll'i'nea. 2. Blue. July. Egypt. 1816.
— *biflo'ra*. 2. Purple. July. 1816.
— *ca'ndida*. 4. Pale red. Bengal. 1816.
— *capitula'ta*. 1½. Red. July. Owhyhee. 1823. Herbaceous.
— *caribæ'a*. 3. Red, white. June. W. Indies. 1786.
— *Coloni'la*. 3. Purple. July. E. Ind. 1818.
— *alkfo'lia*. Red. July. Cape of Good Hope. 1824.
— *frutic'o'sa*. 6. Red. July. E. Indies. 1816.
— *Heyne'dna*. 3. Purple. June. E. Indies. 1822.
— *lancea'fo'lia*. 3. Pale yellow. July. 1820.
— *linea'ris*. 1. Red. July. W. Indies. 1823.
— *litora'lia*. 1. Purple. July. W. Indies. 1824.
— *longifo'lia*. 3. Red. June. S. America. 1820.
— *obcorda'ta*. 1. Yellow. July. Senegal. 1825. Syn., *Regu'enia obcordata*.
— *ochroleu'ca*. 3. Cream. W. Indies. 1789.
— *sphæro'sperma*. 1. Yellow. April. South Africa. 1816. Syn., *Regu'enia sphæro-sperma*.
— *toxic'a'ria*. 3. Pale red. W. Indies. 1791.
— *villo'sa*. 2. White. July. E. Indies. 1779.

Termina'lia. (From *terminus*, limit or end; leaves in clusters at the end of the branches. Nat. ord., *Combretaceæ*. Syn., *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 fibry peat. Winter temp., 55° to 60°; summer, 65° to 85°. The juice of *T. Cata'ppa* is a chief ingredient in India-ink.

T. angustifo'lia. Jacq. Vind. iii. t. 100. See *T. Benzoin*.
— *arbu'scula*. 1. White, green. S. America. 1822.
— *Arju'na*. 70. Greenish. India. Syn., *Pentaptera Arjuna*.
— *belle'rica*. 20. Yellow, green. E. Indies. 1818.
— *bengal'e'nsis*. White. June. E. Indies. 1826.
— *Benzo'in*. 40. Whitish. Mauritius. 1824. Syns., *T. angustifolia* and *T. mauritiana*.
— *Bitica'ria*. 20. Yellow, green. E. Indies. 1823.
— *buc'ceras*. 25. Yellow, white. August. Jamaica. 1793. Syn., *Bucida buceras*. B. R. t. 907.
— *Cata'ppa*. 20. White. E. Indies. 1778. B. M. t. 3004.

- T. Cata'ppa subcorda'ta.* 20. Yellow, green. South America. 1796.
 — *Che'bula.* 20. White. E. Indies. 1796.
 — *citri'na.* 20. Yellow, green. E. Indies. 1823.
 — *disticha.* 20. Yellow, green. E. Indies. 1823.
 — *elegans.* See *Polyscias paniculata.*
 — *Fatré'a.* 20. Yellow, green. Madagascar. 1826.
 — *gange'tica.* 20. Yellow, green. E. Indies. 1820.
 — *latifolia.* 25. W. Indies. 1800.
 — *mauritia'na.* See *T. Benzoin.*
 — *molucca'na.* 20. White, green. E. Indies. 1804.
 — *proc'era.* 40. Yellow, green. E. Indies. 1818.
 — *rotundifolia.* 20. Yellow, green. E. Indies. 1824.
 — *seri'ca.* 6. White. South Africa. 1816.
 — *Tanibou'ca.* White. June. Guiana. 1826.

Ternströ'mia. (Named after *M. Ternström*, a Swedish botanist. Nat. ord., *Ternströmiaceæ*; Tribe, *Ternströmiææ.*)

Stove evergreen shrubs. Cuttings of ripe young shoots in sandy soil, under a bell-glass, in heat; fibry loam and sandy peat. Winter temp., 55° to 60°; summer, 65° to 85°.

- T. bre'vipes.* 6. Red. July. S. America. 1818.
 — *ellipti'ca.* 6. White. July. West Indies. 1818. Syn., *T. peduncularis.*
 — *peduncula'ris.* See *T. elliptica.*
 — *puncta'ta.* 6. Yellowish. July. W. Indies. 1820.
 — *serra'ta.* White. June. E. Indies. 1820.
 — *syllva'tica.* Green, purple. February. Mexico.
 — *veno'sa.* 6. White. July. Brazil. 1824.

Terpna'nthus. (From *terpnos*, delightful, and *anthos*, flower. Nat. ord., *Rutaceæ*; Tribe, *Cuspariææ.*) See **Spiranthera.**

T. jasmino'des. A synonym of *Spiranthera odoratissima.*

Terraces are not permissible anywhere but around the mansion, and they are noble and effective almost in proportion to their breadth.

Testace'la halio'ti'dea. The Ear-shelled Slug is a slug that the gardener should make himself well acquainted with, and not only that, but should endeavour to get his garden well stocked with them; for, unlike other slugs, this one is a real friend to the gardener, since it does not feed upon vegetable matter at all, but is strictly carnivorous, feeding principally upon worms and other species of slugs, of which it destroys considerable quanti-



ties. It should, therefore, never be killed. This slug is readily recognized by its yellow colour, and the small ear-shaped external shell it carries upon its tail: no other British slug has an external shell. It is nocturnal in its habits, and has the power of burrowing to a considerable depth in the ground. See the *Gardeners' Chronicle* for 1877.

Testudina'ria. Elephant's Foot. (From *testudo*, a tortoise; the hard, outside covering of the corm, or root. Nat. ord., *Dioscoreaceæ.*)

Greenhouse, yellow-flowered deciduous climber, 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, fibry loam and turfy peat. Winter temp., 43° to 48°, and kept rather dry.

- T. elepha'ntipes.* 8. July. 1774. B. R. t. 921. Syn., *Tamus elephantipes.* B. M. t. 1347.
 — *monta'na.* 8. July. 1816.

Tetra'cera. (From *tetras*, four-fold, and *keras*, a horn; the four capsules, or divisions of seed-pod, recurved. Nat. ord., *Dilleniaceæ*; Tribe, *Delimeæ.* 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 fibry peat. Winter temp., 55°; summer, 65° to 85°.

- T. alnifolia.* 20. Guinea. 1798.
 — *Caline'a.* A synonym of *Dolichoarpus Caline'a.*
 — *obova'ta.* February. Guinea. 1822.
 — *potato'ria.* 20. Sierra Leone. 1822.
 — *vohu'bilis.* 12. S. America. 1818.

Tetra'dium. (From *tetradeion*, a quaternion; and the parts of the flowers are arranged in fours. Nat. ord., *Rutaceæ*; Tribe, *Zanthoxyloæ.*) Now united with **Evodia.**

- Stove, evergreen tree.
T. tricho'tomum. 20. Whitish. April. Cochinchina. 1822. A synonym of *EVODIA FRAXINIFOLIA.*

Tetrago'nia. New Zealand Spinach. (From *tetra*, four, and *gonia*, an angle; fruit four-angled. Nat. ord., *Ficoideæ*; Tribe, *Mesembryææ.*)

See **NEW ZEALAND SPINACH.** A genus allied to **MESEMBRYANTHEMUM**, from which it differs in the absence of petals.

- T. expa'nsa.* Yellow. August. New Zealand. 1772. Annual. B. M. t. 2362.

Tetragono'lobus. (From *tetra*, four, *gonia*, an angle, and *lobos*, a pod; shape of seed-pod. Nat. ord., *Leguminosæ*; Tribe, *Lotææ.*) See **Lotus.**

Seeds in April, in common soil; the perennials, also, by division and cuttings. Good for the fronts of flower-borders and rock-works.

- T. biflo'rus.* See *Lotus biflorus.*
 — *conjuga'tus.* See *Lotus Requienii.*
 — *maritimus.* See *Lotus siliquosus.*

- T. purpureus*. See *Lotus Tetragonolobus*.
 — *Requienii*. See *Lotus Requienii*.
 — *siliquosus*. See *Lotus siliquosus*.

Tetragonotheca. (From *tetra*, four, and *gonos*, quadrangular, and *theka*, a capsule; the achenes are four-sided. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)

Tall, hardy, perennial herb. Rich, light soil. Divisions or seeds.

T. helianthoides. 3. Pale yellow. August. North America. 1726.

Tetrame'rium. (From *tetra*, four, and *meros*, a part. Nat. ord., *Rubiaceæ*; Tribe, *Coussareæ*.) A synonym of *Faramea*.

T. odoratissimum. A synonym of *Faramea odoratissima*.

— *paniculatum*. A synonym of *Coffea paniculata*.

Tetrami'era. (From *tetra*, four, and *micros*, small; in allusion to the pollen masses. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Lælicæ*.)

Stove, or greenhouse orchids. For culture, see ORCHIDS.

T. bicolor. White, with purple streaks. Winter. Brazil. 1831. Syn., *Leptotes bicolor*. B. R. t. 1625; B. M. t. 3734.

— *minuta*. A species scarcely two inches high.

— *rigida*. See *Brassavola elegans*. B. M. t. 3098.

— *serrulata*. Greenish; lip white. April. Brazil. Syn., *Leptotes serrulata*.

Tetrane'ma. (From *tetra*, four, and *nema*, a filament; four stamens instead of five, as in *Pentstemon*, which it much resembles. Nat. ord., *Scrophulariaceæ*; Tribe, *Cheloneæ*.)

Stove herbaceous. Seed sown in a slight hot-bed 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. mexicana. 1. Purple, white. June. Mexico. 1843. B. R. 1843, t. 52; B. M. t. 4070.

Tetranthe'ra. (From *tetra*, four, and *aner*, anther; four out of nine stamens fertile. Nat. ord., *Lauraceæ*; Tribe, *Litsæaceæ*.)

Cuttings of young shoots, nearly ripe, in sand, under a bell-glass, and the stove ones in bottom-heat; fibry, sandy loam and turfy peat. Greenhouse and stove temperatures.

GREENHOUSE EVERGREENS.

T. apetalata. See *Litsæa Tetranthera*.

— *geniculata*. See *Litsæa geniculata*.

— *japonica*. See *Litsæa japonica*.

— *laurifolia*. B. R. t. 893. See *Litsæa Tetranthera*.

— *Lhu'ysii*. Japan. 1869.

STOVE EVERGREENS.

T. involucreta. See *T. sebifera*.

— *sebifera*. 10. Yellow, green. May. E. Indies. 1820.

— *trinervis*. 10. Yellow, green. May. Ceylon. 1821.

Tetra'nthus. (From *tetra*, four, and *anthos*, a flower; four-flowered.

Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)

Stove evergreen trailer. Division and cuttings; sandy loam and a little peat; requires the stove in winter.

T. litorea. 1. White. August. W. Indies. 1820.

Tetrape'litis. (From *tetra*, four, and *pelte*, a small shield; form of flower. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Cælogyneæ*.) See *Otochilus*.

Stove orchid, grown in a basket. See ORCHIDS.

T. fragrans. B. M. t. 3921. See *Otochilus fragrans*.

Tetrapo'gon. (From *tetra*, four, and *pogon*, a beard; the flowers are bearded. Nat. ord., *Gramineæ*; Tribe, *Chlorideæ*.)

Hardy, perennial grass, of little horticultural value.

T. villosus. 1. Pale yellow. North Africa.

Tetra'pterys. (From *tetra*, four, and *pteron*, a wing; the carpels four-winged. Nat. ord., *Malpighiaceæ*; Tribe, *Hirææ*. Allied to *Hiræa*.)

Stove, evergreen, yellow-flowered climbers. For culture, see MALPIGHIA.

T. acapulcensis. May. Mexico. 1824.

— *acutifolia*. May. Cayenne. 1826.

— *citrifolia*. See *T. inæqualis*.

— *discolor*. May. Guiana. 1827.

— *inaequalis*. Yellow. May. Brazil. 1818. Syn., *T. citrifolia*.

Tetrathe'ca. (From *tetra*, four, and *theka*, a cell; and others four-celled. Nat. ord., *Tremandrea*.)

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; fibry 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. ciliata. Pink. Australia.

— *ericifolia*. 1. Rose. July. 1820. Linn.

Trans. viii. t. 11.

— *ericoides*. 2. Pink. Tasmania. 1854.

— *glandulata*. 1. July. 1822. Linn. Trans. viii. t. 10.

— *hirsuta*. 2. Pink. March. 1843. B. R. 1844, t. 67.

— *ju'ncea*. 2. July. 1803.

— *nu'da*. 2. Crimson. May. 1843.

— *pilifera*. 2. June.

— *pilosula*. 1. July. 1823.

— *rubroides*. 1. July. 1825.

— *thyrise'ca*. 2. Rose. July. 1834.

— *rhymifolia*. 1. July. 1824.

— *verticillata*. 2. June. 1845. Paxt. Mag. xiii. p. 171.

— *vimi'nea*. 2. July.

Tetrazy'gia. (From *tetra*, four, and *zygos*, a yoke; the parts of the flower in fours. Nat. ord., *Melastomaceæ*; Tribe, *Miconiæ*. Allied to *Miconia*.)

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 fibry peat. Winter temp., 55° to 60°; summer, 65° to 85°.

- T. angustifolia*. 5. May. 1823. Syn., *T. eleagnoides* of B. M. t. 4383.
— *discolor*. 5. May. 1793.
— *eleagnoides*. 4. March. See also *T. angustifolia*.
— *tetra'nara*. 3. March. 1815.

Tettigonia spumaria of some entomologists, and the *Cercopis*, *Cicada*, or *Aphrophora spumaria* of others, Froth insect, Cuckoo-spit, Froth-hopper, or Frog-hopper. The 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, aphid-like insects are detected. These are the larvæ 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 carna-

tion 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.

Teucrium. Germander. (Named after *Teucer*, a Trojan prince, who first used it medicinally. Nat. ord., *Labiatae*; Tribe, *Ajugoideæ*. Syn., *Leucoscepttrum*.)

Annuals by seeds in the open ground in April; perennials, by seeds and divisions; 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. angustissimum*. 2. Purple. June. Spain. 1818.
— *brevifolium*. 1. Pink. June. Crete. 1824.
— *orientale*. 1. Blue. July. Levant. 1725. B. M. t. 1279.
— *palatum*. 1. Pale. August. South Europe. 1562. Sibth. Fl. Gr. t. 535.
— *angustifolium*. Purple. July. Spain. 1732.
— *flavescens*. Yellow. July. South Europe. 1731.
— *saxatile*. $\frac{1}{2}$. Pale yellow. July. Valentia. 1820.
— *Scordonia*. 1. Yellowish. June. Britain.
— *crispum*. Garden variety. 1865.
— *thymifolium*. $\frac{1}{2}$. Reddish. August. Spain. 1816.

HARDY HERBACEOUS.

- T. campanulatum*. 1. Blue. July. Levant. 1728.
— *canadense*. 2. Purple. August. N. Amer. 1768.
— *chamaedrys*. $\frac{1}{2}$. Purple. July. England.
— *hyrcanicum*. $\frac{1}{2}$. Purple. September. Persia. 1763. B. M. t. 2013.
— *Lacina'nii*. 1. Variegated. July. Siberia. 1800.
— *lucidum*. $\frac{1}{2}$. Purple. August. South Europe. 1730. Sibth. Fl. Gr. t. 532.
— *lusitanicum*. $\frac{1}{2}$. Purple. August. Portugal. 1822.
— *massiliense*. 2. Purple. France. 1732. Jacq. Vind. i. t. 94.
— *multiflorum*. 1. Light red. August. Spain. 1732.
— *pycnophyllum*. $\frac{1}{2}$. Purple. July. Spain. 1816.
— *virginicum*. 2. Blue. N. Amer. 1768.

GREENHOUSE HERBACEOUS.

- T. inflatum*. 2. Red. September. Jamaica. 1778. Stove.
— *nissolia'nium*. 1. Purple. July. Spain. 1752.

GREENHOUSE EVERGREENS.

- T. abutiloides*. $\frac{1}{2}$. Yellow. April. Madeira. 1777. Jacq. H. Schoenb. t. 358.
— *Ardu'nii*. See *T. bicolor*.
— *asiaticum*. 2. Pink. August. 1777. Jacq. Vind. iii. t. 41.
— *betonicum*. $\frac{1}{2}$. Lilac. July. Madeira. 1775. B. M. t. 1114.
— *bicolor*. 1. Pink. July. Chili. 1826. B. R. t. 1255. Syns., *T. Ardu'nii* and *T. archideum*. B. R. t. 1255.
— *ca'num*. $\frac{1}{2}$. Purple. Armenia. 1836.

- T. creticum*. 1½. Purple. July. Crete. 1824.
Sibth. Fl. Gr. t. 529.
— *flavum*. 2. Yellow. August. South Europe.
1640. Sibth. Fl. Gr. t. 533.
— *fruticans*. 2-3. Blue. S. Europe. 1869.
Sibth. Fl. Gr. t. 527. Syn., *T. latifolium*.
B. M. t. 245.
— *heterophyllum*. 2. Purple. June. Madeira.
1759.
— *latifolium*. See *T. fruticans*.
— *macrostachyum*. India. Syn., *Leucosceptrum*
canum.
— *maurum*. 1½. Pale purple. August. Spain.
1640.
— *orchideum*. See *T. bicolor*.
— *pseudochamæpitys*. ½. Purple. June. South
Europe. 1820.
— *puñilum*. ½. Purple. July. Spain. 1816.
— *regium*. 1½. Purple. July. Spain. 1699.
— *reticulatum*. 1½. Purple. July. Cape of Good
Hope. 1791.

Teysmannia. (In honour of *J. E. Teysmann*, a Dutch gardener. Nat. ord., *Palmeæ*; Tribe, *Corypheæ*.)

Dwarf, stove palm, requiring the same treatment as *CORYPHA*.

- T. altifrons*. 10. Yellowish. Sumatra.

Thalamia. (From *thalamus*, a receptacle. Nat. ord., *Coniferæ*; Tribe, *Taxææ*.) A synonym of **Phyllocladus**.
T. asplenifolia. A synonym of *Phyllocladus rhomboidalis*.
— *nucifera*. A synonym of *Torreya nucifera*.

Thalia. (Named after *J. Thalius*, a German physician. Nat. ord., *Scitamineæ*; Tribe, *Marantææ*. Allied to *Maranta*.)

Blue-flowered evergreens. Divisions; rich-sandy loam. *T. geniculata* requires a cool plant stove in winter; *dealbata*, 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. dealbata*. 4. July. Carolina. 1791. B. M. t. 1690.
— *geniculata*. 2. August. W. Indies. 1823.
— *sanguinea*. Lem. Jard. Fl. iii. t. 268. A synonym of *Maranta sanguinea*.

Thalictrum. Meadow Rue. (From *thallo*, to grow green; the bright green colour of the young shoots. Nat. ord., *Ranunculaceæ*; Tribe, *Anemoneæ*.)

Hardy herbaceous perennials. Divisions of the plant in spring; sandy loam and a little leaf-mould. Beautiful for the back of herbaceous borders.

- T. acutilobum*. 1½. Pale yellow. June. Siberia. 1820.
— *adiantifolium*. See *T. minus*.
— *alpinum*. ½. White, yellow. June. Britain. B. M. t. 2237.
— *anemonoides*. 3. April. N. America. 1768. Swt. Fl. Gard. ser. 2, t. 150. Syn., *Anemone thalicroides*. B. M. t. 866.
— — *florople* no. ½. April. N. America. 1768.
— *angustifolium*. 3. Pale yellow. June. Germany. 1793. Jacq. Vind. iii. t. 43.
— *apiculatum*. Yellow. June. 1838.
— *appendiculatum*. Russia. 1832.
— *aquilegifolium*. 3. Light purple. June. Austria. 1731. B. M. t. 1818.
— — *atro-purpureum*. 3. Dark purple. June. Austria. 1731.
— — *formosum*. 3. Purple. June. South Europe. 1890.

- T. aquilegifolium roseum*. Rose. June. 1820.
— *calabriculum*. 3. Yellow. July. Sicily. 1800.
— *carolinianum*. 1. White. June. N. America. 1808.
— *chelioides*. 2. Purplish. June. Nepal. 1823.
— *cineereum*. 2. Yellow. June. 1810.
— *clavatum*. 2. White. June. N. America. 1720.
— *colibicum*. 1½. Pale yellow. June. Europe. 1800.
— *concinnum*. 3. White. Green. June.
— *contortum*. 2. White. June. Siberia. 1796.
— *Cornuti*. 3. White. Yellow. May. N. America. 1806.
— — *revolutum*. 1½. Light yellow. June. N. America. 1806.
— *crenatum*. 5. Yellow. July. Europe. 1800.
— *cultratum*. Green, yellow. June. Himalayas.
— *cynapiifolium*. 2. Purple, yellow. June. Siberia. 1823.
— *Delavayi*. 3. Pale purple. Summer. Yunnan, China. 1890. B. M. t. 7152.
— *dioicum*. 1. Light yellow. June. N. America. 1759.
— *divaricatum*. 1½. Yellowish. June. Europe. 1819.
— *divegens*. 2. Yellow. June. Siberia. 1819.
— *elatium*. 4. Light yellow. August. Hungary. 1794. Jacq. Vind. iii. t. 85.
— — *ambiguum*. 2. Pale yellow. June. Switzerland. 1819.
— *exultans*. Siberia. 1832.
— *flavum*. 4. Orange. June. Britain. Eng. Bot. ed. 3, t. 8.
— — *vaginatum*. 2. Yellow. June. Siberia. 1810.
— *flexuosum*. 1½. Yellow. June. Germany. 1820.
— *foetidum*. ¾. White, yellow. June. France. 1640.
— *foliolosum*. 2. Purple, yellow. June. Nepal. 1819.
— *galioides*. 1. Yellow. June. Alsace. 1816.
— *glaucescens*. 2. Green, yellow. June. Russia. 1818.
— *glaricum*. 8. Yellow. June. Spain. 1798.
— *laserpitifolium*. 3. Yellow. June. Europe. 1810.
— *lividum*. 4. Yellow. June. Spain. 1739.
— *microcarpum*. Russia. 1832.
— *minus*. 1. Pale yellow. June. Britain. Eng. Bot. ed. 3, t. 3.
— *oblongorum*. 2. Purple, yellow. June. Siberia. 1820.
— *petaloides*. 3. White, yellow. June. Daburia. 1799. B. C. t. 891.
— *pubescens*. 1½. Pale yellow. June. Switzerland. 1819.
— *purpurea*. 3. Light purple. June. N. America. 1699.
— *rosarinifolium*. 2. Purple, yellow. June. South Europe. 1816.
— *rugosum*. 4. White, yellow. July. N. America. 1774.
— — *discolor*. 6. Yellow. June. N. America. 1810.
— *saxatile*. 1½. White, red. June. Europe. 1819.
— *Schweiggeri*. Yellow. June.
— *sibiricum*. 1. Lilac, yellow. June. Siberia. 1775.
— *simplex*. 1. Lilac, yellow. May. Sweden. 1778.
— *sparsiflorum*. Yellow. June. Siberia. 1838.
— *squarrosum*. 1. Yellow. June. Siberia. 1806.
— *stipulaceum*. 2. White, yellow. June. Europe. 1820.

Tha'mnea. (From *thamos*, a shrub. Nat. ord., *Bruniaceæ*.)

Greenhouse evergreen shrub. Cuttings of the young shoots in sand, under a bell-glass, in April, and then set in a close pit; fibry, sandy peat, and a little charcoal and freestons. Winter temp., 40° to 48°.

T. uniflora. White. April. South Africa. 1810.

Tha'psia. (The Greek name of *T. gargarica*. Nat. ord., *Umbelliferae*; Tribe, *Laserpiticeæ*.)

The species to which the ancient Greeks gave the name of THAPSIA, has been long celebrated for its healing powers, the root being used externally as a remedy for all kinds of pain, and for the reduction of tumours, by the Moors. Greenhouse perennials, with a thick carrot-like root. Seeds, or breaks from the root. Loam. Summer temp., 60° to 85°; winter, 48° to 60°.

T. decipiens. 6. White. Madeira. 1867.

— edulis. 4. White. May. Madeira. 1857. Syn., *Monizia edulis*. B. M. t. 5724.

— gargarica. Yellow. Mediterranean region. 1683. Sibth. Fl. Gr. t. 287.

— villosa. 4. Yellow. June. South Europe. 1710.

Thatch Palm. *Euterpe*, *Sabal*, and *Thrinax*.

The'a. Tea. (From *tea*, the Chinese name for tea. Nat. ord., *Ternstroemiae*; Tribe, *Gordoniaceæ*.) Now united with **Camellia**.

Greenhouse, white-flowered, evergreen shrubs. Cuttings of ripened young shoots, taken off at a joint, 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. Equal parts of fibry 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. Bohea, B. M. t. 998, and *T. viridis*, B. M. t. 3148, are forms of *Camellia Thea*.

— maliflora. A synonym of *Camellia roseiflora*.

Theezan Tea. *Rhad'nurus thee'zans*.

Thelymitra. (From *thelys*, a woman, and *mitra*, a cap; in allusion to the hood-shaped column. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Spirantheæ*.)

Greenhouse, terrestrial orchids.

T. carnea. 1-1. Pink. May. Australia. 1820.

— Forsteri. } See *T. longifolia*.

— graminea. }

— zivoides. 1. Blue. May. Australia. 1810.

— longifolia. 1. Blue to Pink. May. Australia. 1824. Syns., *T. Forsteri*, *T. graminea* and *T. pauciflora*.

— pauciflora. See *T. longifolia*.

— variegata. 1. Purple. May. Australia. Syns., *Macdonaldia spiralis* and *M. variegata*.

— venosa. 1-2. Blue. April. Australia. 1826. Syn., *Macdonaldia venosa*.

Themistocle'sia. (After *Themistocles*, a Grecian statesman. Nat. ord., *Vacciniaceæ*; Tribe, *Euvaccinieæ*.)

Stove, evergreen shrub. Turfy loam, peat and sand. Cuttings.

T. coronilla. Red. Columbia. 1866. Syns., *Ceratostemma coronarium* and *Thibaudia coronaria*. B. M. t. 5575.

Thenard'sia. (Named after *M. Thenard*, a French chemist. Nat. ord., *Apocynaceæ*; Tribe, *Echitideæ*.)

Stove evergreen climber. Cuttings of stubby side-shoots in sand, under a bell-glass, and in heat; sandy, fibry loam and peat, with a little charcoal. Winter temp., 55° to 60°; summer, 65° to 85°.

T. floribunda. 10. Blue. Mexico. 1823.

Theobroma. Chocolate-tree. (From *theos*, a god, and *broma*, food; poetically, food for the gods. Nat. ord., *Sterculiaceæ*; Tribe, *Buettnerieæ*. Syn., *Cacao*.)

The seed of *T. Cacao* is the chief ingredient in chocolate and cocoa. Stove evergreen trees. Cuttings of half-ripened shoots in sand, under a bell-glass, in heat; fibry loam and sandy peat. Winter temp., 55° to 65°; summer, 65° to 88°.

T. bicolor. 16. Brown. New Grenada. 1820.

— Cacao. 16. Brown. S. America. 1739. B. C. t. 645.

— caribæa. Yellow. W. Indies. 1821.

— Guazuma. A synonym of *Guazuma ulmifolia*.

— guianensis. 16. Yellow. Guiana. 1803.

Theophrasta. (Named after *Theophrastus*, the father of natural history. Nat. ord., *Myrsineæ*; Tribe, *Theophrasteæ*.)

Stove white-flowered evergreens. Cuttings of ripe young shoots in sand, under a bell-glass, in heat; sandy loam and fibry peat. Winter temp., 50° to 58°; summer, 60° to 85°.

T. argyrea. 1860.

— imperialis. B. M. t. 6823. See *Chrysophyllum imperiale*.

— Jussieui. 3. St. Domingo. 1818. B. M. t. 4239.

— latifolia. S. America.

— longifolia. Jacq. H. Schoenb. t. 116. A

synonym of *Clavija ornata*.

— macrophylla. Brazil.

— pinna'ta. See *Talisia princeps*.

— smaragdina. See *Deherainia smaragdina*.

— umbrosa. See *Clavija umbrosa*.

There'sia. (Commemorative, but of whom not explained. Nat. ord., *Liliaceæ*; Tribe, *Tulipeæ*.) See **Fritillaria**. Hardy bulb. For cultivation, see **LILIUM CANDIDUM**.

T. persica. A synonym of *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. Multiply 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 intrusted.

Bregazzi's bark-bed thermometer is an excellent instrument for ascertaining the bottom-heat of hot beds, bark-pits, etc. 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 shrub. Nat. ord., *Leguminosæ*; Tribe, *Podalyriæ*. Allied to *Piptanthus*.)

Hardy herbaceous yellow-flowered perennials. Chiefly by seeds sown in April; light, sandy loam.

- T. barba'ta*. 1½. Purple. June. Himalaya. 1855.
 — *corgone'nsis*. 1. July. Altaia. 1820. Syn., *Sophora alpina*.
 — *fabace'a*. 2. June. N. America. 1811. B. M. t. 3611. Syn., *Sophora fabacea*.
 — *laburnifo'lia*. B. C. t. 1095. A synonym of *Piptanthus nepalensis*.
 — *lanceola'ta*. 1. June. Siberia. 1779. Syn., *Podalyria lupinoides*.

- T. monta'na*. 1. June. N. America. 1818.
 — *nepale'nsis*. See *Piptanthus nepalensis*.
 — *au'rea*. See *Piptanthus nepalensis*, var. *aurea*.

Theropo'gon. (Compounded from *theros*, summer, and the termination of *Ophiopogon*; in allusion to its resemblance to *Ophiopogon*, and the annual renewal of its leaves in summer. Nat. ord., *Liliacæ*; Tribe, *Convallariæ*. Allied to *Polygonatum*.)

Greenhouse herbaceous perennial, of tufted habit with grass-like leaves. Seeds sown in a slight hotbed in spring; divisions of the plant. Sandy loam and leaf-mould. Summer temp., 55° to 75°; winter, 40° to 50°.

- T. pallidus*. ½. Pink. Himalaya. 1875. B. M. t. 6154.

The'sium. (From *Thession*, a name used by Theophrastus. Nat. ord., *Santalacæ*.)

A large genus of herbaceous plants, scarcely worth cultivation.

- T. drupa'ceum* is a synonym of *Leptomeria Billardieri*.

Thespe'sia. (From *thespesios*, divine; one of the trees often planted round places of worship in India. Nat. ord., *Malvacæ*; Tribe, *Hibiscæ*.)

Stove evergreen trees. Cuttings of stubby side-shoots in sand, in May, under a bell-glass, in bottom-heat; fibry, sandy loam, and a little leaf-mould. Winter temp., 48° to 55°; summer, 65° to 85°.

- T. grandiflo'ra*. 30. Scarlet. Porto Rico. 1837.
 — *populnea*. 30. White. Tropics of the Eastern Hemisphere. 1770. Wight, Ic. t. 8.
 — *gadalupe'nsis*. 30. Cultivated in Guadeloupe.

Theve'tia. (In honour of *M. Thevet*. Nat. ord., *Apocynacæ*; Tribe, *Plumariæ*.)

Stove evergreen shrubs. Cuttings in sand, under a bell-glass in heat. Fibrous loam. Summer temp., 60° to 80°; winter, 55° to 60°.

- T. Ahou'ei*. 20. Yellow. June. Brazil. 1739. Syn., *Cerbera Ahouai*. Andr. Rep. t. 231; B. M. t. 737.
 — *neriifo'lia*. 12. Yellow. June. S. America. 1785. Syn., *Cerbera Thevetia*. B. M. t. 2309.
 — *Ycco'tli*. 8. Yellow. June. Mexico. 1800. Syn., *Cerbera thevetioides*.

Thibau'dia. (Named after *Thiebaud de Berneaud*, a French botanist. Nat. ord., *Vacciniacæ*; Tribe, *Thibaudiæ*.)

Stove evergreens. Cuttings of half-ripe shoots in sand, under a bell-glass, and in moist heat; sandy loam and fibry peat. Winter temp., 50° to 60°; summer, 60° to 85°.

- T. acumina'ta*. B. M. t. 5752. See *Cavendishia acuminata*.
 — *angustifo'lia*. Peru. Ic. Pl. t. 110.
 — *cordifo'lia*. B. M. t. 5559. See *Cavendishia cordifolia*.
 — *corona'ria*. See *Themistoclesia coronilla*.
 — *floribu'nda*. Scarlet. New Grenada.
 — *Jé'ssica*. B. M. t. 5647. See *Psammissia Jessicæ*.
 — *macra'ntha*. B. M. t. 4566. A synonym of *Agapetes macrantha*.
 — *macrophy'lla*. White. East Indies.

- T. microphylla*. 2. September. Peru. 1847. Fl. Ser. t. 332.
 — *ocane'nsis*. Ocana. 1865.
 — *penduliflora*. Red, green. Caraccas.
 — *pinchine'nsis*. 12. Scarlet. Pinchincha. 1849.
 — *glabra*. B. M. t. 4344. See *Psammisia hookeriana*.
 — *pulcherrima*. B. M. t. 4303. A synonym of *Agapetes pulcherrima*.
 — *saraceniha*. B. M. t. 5450. See *Psammisia sarcantha*.
 — *scabriuscula*. 5. Crimson. April. New Grenada. 1850.
 — *setigera*. Scarlet. Khasia. 1837.
 — *vaccinacea*. Scarlet. Khasia. 1837.
 — *variegata*. See *Agapetes variegata*.

Thinning. The exhaustion consequent upon the excessive production of seed is one of the many causes 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 of nutriment, and check each other's growth. Thinning in the seed bed is generally applied with too timid a hand.

Thistle. Various species of *Carduus*, *Cnicus*, etc.

Thistle, Blessed. *Silybum Maria-num*.

Thistle, Cotton. *Oenopordon Acanthium*.

Thistle, Globe. *Echinops*.

Thistle, Golden. *Scolymus hispanicus*.

Thistle, Hedgehog. *Echinocactus*.

Thistle, Holy. *Silybum Maria-num*.

Thistle, Melon. *Melocactus*.

Thistle, Our Lady's Milk. *Silybum Maria-num*.

Thistle, Sow. *So'nchus*.

Thladiantha. (From *thladias*, a enunch, and *anthos*, a flower. Nat. ord., *Cucurbitaceæ*; Tribe, *Cucumerineæ*.)

Greenhouse climber. For cultivation, see **SECIUM**.

T. du'bia. Yellow. China. 1864. B. M. t. 5469.

Thlaspi. Penny Cress. (From *Thlaspis*, a name for Cress used by Dioscorides. Nat. ord., *Cruciferae*; Tribe, *Thlaspidæ*.)

Hardy, annual or perennial herbs.

T. arabicum. A synonym of *Æthionema Buxbaumii*.

— *cepecefolium*. ½. Pink. July. Carinthia. 1824. Syn., *Hutchinsia cepecefolia*.

— *luteum*. A synonym of *Bivonæa lutea*.

— *pumilum*. June. Caucasus. 1821. Syn., *Hutchinsia pumila*.

— *rotundifolium*. ½. White. Purple. June. South Europe. 1759. Syn., *Hutchinsia rotundifolia*.

— *saxatile*. A synonym of *Æthionema saxatile*.

Thomasia. (Named after Messrs. Thomas, two brothers, collectors of Swiss plants. Nat. ord., *Sterculiaceæ*; Tribe, *Lasiopetalæ*. Allied to *Lasiopetalum*.)

Greenhouse, Australian, evergreen shrubs. Cuttings of firm, stubby, young side-shoots in sand, under a bell-glass, in April; sandy, fibry loam and peat, with a little charcoal and broken pots, and the pots extra well-drained. Winter temp., 40° to 48°; a sheltered, airy place in summer.

T. canescens. Purple. June. 1835.

— *diffusa*. White. April. 1822.

— *dumosa*. 2½. White. May. 1826.

— *foliosa*. 3. June. 1823.

— *glutinosa*. Red. May. 1842.

— *latifolia*. Pink. Summer. 1885. Gf. t. 1186.

— *grandiflora*. Red. 1840.

— *macrocarpa*. 3. Red. June. 1842.

— *paniculata*. Red. June. 1842.

— *pauciflora*. Red. June. 1848.

— *purpurea*. 3. Purple. June. 1803. Syn., *Lasiopetalum purpurcum*. B. M. t. 1755.

— *quercifolia*. 3. Purple. May. 1803. Syn., *Lasiopetalum quercifolium*. B. M. t. 1485.

— *solanacea*. 3. White. June. 1803.

— *stipulacea*. 3. Red. 1842. B. M. t. 4111.

— *triphylla*. 3. June. 1824. Syn., *Lasiopetalum triphyllum*.

Thomsonia. (In honour of Dr. A. T. Thomson, 1778-1849. Nat. ord., *Aroideæ*; Tribe, *Pythoniæ*.)

Stove, tuberous, perennial herbs. For culture, see **CALADIUM**.

T. hookeri. 2. Churra, India. 1840.

— *nepalensis*. 2. Green, purple, yellow. Nepal. 1816.

Thorn. Various species of *Cratægus*, etc.

Thorn Apple. *Datu'ra Stramo'-nium.*

Thorn Bloom. *U'lex europæ'us.*

Thorn, Christ's. *Paliu'rus aculea'-tus* and *Zi'zyphus Spi'na-Chri'sti.*

Thorn, Garland. *Paliu'rus aculea'tus.*

Thorn, Jerusalem. *Parkinsonia aculea'ta.*

Thorough-Wax. *Bupleu'rum rotundifo'lium.*

Thou'nia. (Named after *A. Thouin*, professor of agriculture, etc., in Paris. Nat. ord., *Sapindacæ*; Tribe, *Sapindacæ*. Allied to *Talisia*.)

Stove evergreen shrub. Cuttings of firm side-shoots in sand, under a bell-glass, in heat; sandy, fibry loam and a little peat or leaf-mould. Winter temp., 50° to 53°; summer, 60° to 85°.

T. pinna'ta. 8. White. New Spain. 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., *Palmeæ*; Tribe, *Coryphææ*.)

Stove palms. Seeds in a moist, sweet hotbed, in spring; rich, loamy soil. Winter temp., 55° to 60°; summer, 60° to 90°.

T. arge'ntea. 16. W. Indies. 1830.

— *barbade'nsis.* 12. Barbados. 1875.

— *el'egans.* Central America. 1861. Very dwarf.

— *elegant'i'ssima.* 1871.

— *exce'l'sa.* W. Indies. 1800.

— *ferrugi'nea.* Jamaica. 1840.

— *gra'cilis.* Trinidad. 1824.

— *graci'lisma.* 1877.

— *graminifo'lia.* See *T. multiflora*.

— *gra'ndis.* 1870.

— *havane'nsis.* West Indies. 1869.

— *Morri'sii.* 3. Anguilla, West Indies. G. C.

1891, ix. p. 700, fig. 134.

— *multifo'ra.* 8. Haiti. 1847. Syn., *T.*

graminifolia. III. Hort. n. s. t. 187.

— *parvifo'ra.* 15. White, green. Jamaica.

1778.

— *pu'milio.* Jamaica. 1738.

— *radia'ta.* Trinidad. 1838.

— *stella'ta.* Cuba. 1852.

Thrips. *Heliothrips 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.

Thrips 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 *Heliothrips Adonidum*.

Thrixsper'mum. (From *thrix*, a hair, and *sperma*, a seed; in allusion to the slender hairlike seeds. Nat. ord., *Orchidæ*; Tribe, *Vandææ-Sarcantheæ*.) A synonym of **Sarcochilus**.

Stove epiphytal orchid. Should be grown on blocks. See ORCHIDS.

T. Berkele'yi. A synonym of *Sarcochilus Berkele'yi*.

— *Freema'nii.* See *Sarcochilus Freemanii*.

— *Hartma'nni.* See *Sarcochilus Hartmanni*.

— *indusa'tum.* See *Sarcochilus indusiatum*.

— *lunif'erum.* Ochre, white, brown. Burmah.

1868.

— *Moo'rei.* ♂. Yellow, brown. Solomon Islands.

1880.

— *muricula'tum.* Pale ochre, purple. India.

1881.

— *Sillema'num.* A synonym of *Sarcochilus*

Sillemanum.

— *unguicula'tum.* See *Sarcochilus unguiculatum*.

Thrya'llis. (A name used by Theophrastus. Nat. ord., *Malpighiaceæ*; Tribe, *Malpighiææ*.) A synonym of **Galphimia**.

T. brachysta'chys. 4. August. Rio Janeiro. 1823. B. R. t. 1162.

Thrypto'mene. (From *thrypto*, to break or crush; in allusion to the fragile appearance of the plant. Nat. ord., *Myrtaceæ*.)

Heath-like, greenhouse shrub. For culture, see BÆCKEA.

T. saxicola. 3. White. July. Australia. 1824. Syn., *Bæckea saxicola*. B. M. t. 3160.

Thu'ja. See **Thuya**.

Thujo'psis. See **Thuyopsis**.

Thunbe'rgia. (Named after C. P. Thunberg, the celebrated botanist. Nat. ord., *Acanthaceæ*; Tribe, *Thunbergiæ*.)

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; fibry 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. affinis. Violet; throat yellow. September. Zanzibar. 1837. B. M. t. 6975.

— *alata*. 4. Yellow. June. South Africa. 1823. B. M. t. 2591.

— *alba*. 4. White. May. Madagascar. Swt. Fl. Gard. ser. 2, t. 392.

— *aurantiaca*. 4. Orange. May.

— *Doddii*. Yellowish-orange, purplish-violet. 1848. Fl. Ser. t. 415. Syn., *T. Doddii*.

— *angulata*. 4. June. Madagascar. 1823. B. C. t. 1044.

— *capensis*. 3. Yellow. June. South Africa. 1824. B. C. t. 1529.

— *chrysops*. 3. Blue, violet. June. Sierra Leone. B. M. t. 4119.

— *coccinea*. 4. Scarlet. June. India. 1823. B. C. t. 1195.

— *cordata*. 3. White. June. E. Indies. 1820.

— *Doddii*. Paxt. Mag. xv. p. 221. See *T. alata*, var. *Doddii*.

— *erecta*. 6. Dark blue, orange. July. West Africa. 1857. Syn., *Meyenia erecta*. B. M. t. 5013.

— *alba*. White, yellow.

— *fragrans*. 4. White. June. India. 1796. B. C. t. 1913.

— *laevis*. Not fragrant as in the type. Syn., *T. fragrans* of B. M. t. 1881.

— *grandiflora*. 6. Blue. July. India. 1820. B. M. t. 2366.

— *Harrisii*. See *T. laurifolia*.

— *Hawtayneana*. 10. Scarlet. June. Nepal. 1826. Paxt. Mag. vi., p. 147. Syn., *Meyenia Hawtayneana*.

— *Kirkii*. 3. Bluish-violet. September. East Tropical Africa. 1876. B. M. t. 6677.

— *laurifolia*. Blue. Malay Islands. 1856. B. M. t. 4985. Syn., *T. Harrisii*. B. M. t. 4998.

— *mysorensis*. Yellow, purplish. Spring. Mysore. 1854. Syn., *Hexacentris mysorensis*. B. M. t. 4786. and var. *tutea*, Fl. Ser. t. 942.

— *natalensis*. 2½. Blue. July. Natal. 1853. B. M. t. 5082.

— *Vogelia*. Bluish-violet. Summer. Fernando Po. 1863. Syn., *Meyenia Vogeliana*. B. M. t. 5339.

Thunder Plant. *Sempervivum tectorum*.

Thu'nia. (Derivation not stated. Nat. ord., *Orchidæ*; Tribe, *Epidendrea-Bleticæ*.) Now regarded as a section of **Phaius**.

T. alba. See *Phaius albus*.

— *Bensoniæ*. See *Phaius Bensoniæ*.

— *candidissima*. See *Phaius candidissimus*.

— *Marshalliæ*. See *Phaius Marshalliæ*.

— *Mastersiana*. 4. Moulmein. G. C. 1891, x., p. 420.

— *nivalis*. See G. C. 1888, iv., p. 62.

— *pulchra*. A synonym of *Phaius albus*.

— *Veitchiana*. See *Phaius Veitchianus*.

Thu'ya. Arbor Vitæ. (From *thyon*, a sacrifice; the resin used as incense in eastern sacrifices. Nat. ord., *Coniferæ*; Tribe, *Cupressinæ*. Syn., *Thuja*.)

Hardy evergreen shrubs or 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. acuta. See *T. orientalis*.

— *chilensis*. See *Libocedrus chilensis*.

— *Doniana*. See *Libocedrus Doniana*.

— *gigantea*. 50-150. North West America. White Cedar. *T. gigantea* of Carrière is *Libocedrus decurrens*.

— *atrovirens*. Leaves dark glossy-green.

— *erecta*. A variety with stricter habit.

— *pyramidalis*. A dwarf variety.

— *variegata*. Young branchlets pale yellow.

— *latevirens*. See *Thuyopsis dolabrata*, var. *latevirens*.

— *occidentalis*. 50. North America. American Arbor Vitæ; White Cedar. Wats. Dendr. t. 150.

— *alba*. Tips of young branchlets silvery-white.

— *argentea*. Branchlets silvery-white.

— *aurea*. A golden variety.

— *compacta*. A variety of conical habit.

— *cristata*. Branchlets densely arranged at the ends of the branches.

— *Etwangeriana*. A dwarf bush.

— *globosa*. A dwarf globular bush.

— *gracilis*. Branches slender, drooping.

— *Hoveyi*. A compact bush. Branches flat.

— *pendula*. Primary branches drooping.

— *Spathii*. Young shoots thread-shaped; feathered the second year. 1890.

— *variegata*. Some branchlets pale yellow.

— *walthamensis*. 8. Pyramidal.

— *orientalis*. 20. China and Japan. 1860. Pyramidal. Syns., *T. acuta* and *Biota orientalis*.

— *argentea*. Branchlets variegated with white.

— *ascotensis*. Branches bright golden.

— *athrotaxoides*. Dwarf variety.

— *aurea*. 3. Golden-yellow.

— *elegantissima*. Tips of young shoots golden-yellow.

— *falcatula*. Pyramidal.

— *funiculata*. Branchlets bright green.

— *glauca*. Covered with a silvery powder.

— *gracilis*. A slender variety. Nepal.

— *macrocarpa*. Branches drooping. Cones large.

— *monstrosa*. Branches few, contorted.

— *pekinensis*. 60. Pekin. 1861.

— *pendula*. 15. Japan. Syn., *Biota pendula*. Weeping Arbor Vitæ.

- T. orientalis pyramidalis*. 30. Pyramidal.
 — *sempervirens*. Golden throughout the year.
 — *Sieboldii*. Conical, dwarf, bright green.
 — *triangularis*. Branchlets arranged in a triangular manner.
 — *variegata*. Branchlets bright golden and green.
 — *Zuccariniana*. Dwarf, bright green.
 — *plicata*. 20. Nootka Sound. 1796.
 — *minima*. A dwarf, slow-growing variety.
 — *variegata*. Variegated with pale yellow.
 — *Standishii*. Japan. 1862. Syn., *Thuyopsis Standishii*.
 — *tatarica*. 10. Syn., *T. Wareana*.
 — *compacta*. Compact, conical. 1886.
 — *tetragona*. See *Libocedrus tetragona*.
 — *Wareana*. See *T. tatarica*.

Thuyopsis. (From *Thuya*, the arbor-vitæ, and *opsis*, resemblance. Nat. ord., *Coniferae*; Tribe, *Cupressineæ*. Syn., *Thuyopsis*.)

Hardy evergreens.

- T. borealis nidiifera*. A seedling variety with plume-like branches.
 — *dotabrata*. 50. Japan. There is a variety with white-blotched twigs.
 — *latevirens*. Japan. 1862. Syn., *Thuya latevirens*.
 — *variegata*. Variegated with pale yellow.
 — *Standishii*. See *Thuya Standishii*.

Thymbra. (An ancient name applied to a thyme-like plant. Nat. ord., *Labiatae*; Tribe, *Satureineæ*. Allied to *Melissa*.)

Half-hardy evergreens. Seeds in April, or cuttings under a hand-light in June; sandy, gravelly loam. Nice rock-work plants, requiring a cold pit in winter.

- T. caroliniana*. A synonym of *Macbridea pulchra*.
 — *ciliata*. See *Thymus ciliatus*.
 — *spicata*. 1½. Pale purple. June. Levant. 1699. Sibth. Fl. Gr. t. 546.

Thyme. *Thymus*.

Thyme, Basil. *Calamintha Afcinos*.

Thyme, Water. *Eloëa*.

Thymelæa. (From *thymos*, thyme, and *elaia*, olive; the leaves resemble those of thyme, the fruits those of the olive. Nat. ord., *Thymelacæe*.)

Hardy, or half-hardy shrubs. Loam and peat in equal parts. Cuttings.

- T. arvensis*. 1½. Yellowish. Syn., *Stellera Passerina*. Jacq. Ic. t. 68.
 — *hirsuta*. 2. White. July. Mediterranean region. 1759. Syn., *Passerina hirsuta*. B. M. t. 1949. Half-hardy.
 — *Tartonnæra*. See *Daphne Tartonnæra*.

Thymus. Thyme. (From *thuo*, to perfume. Nat. ord., *Labiatae*; Tribe, *Satureineæ*.)

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. vulgaris* is our common pot-herb thyme. For culture, see SAGE.
T. alpinus. B. M. t. 2153. A synonym of *Calamintha alpina*.

- T. angustifolius*. ½. June. South Europe. 1771.
 — *azoricus*. July. Azores. 1820. B. C. t. 1530.
 — *azureus*. ½. June. South Europe. 1830.
 — *capitata*. June. South Europe. 1596.
 — *cephalotes*. ¾. July. Portugal. 1759.
 — *Chamaëdryas*. Pale purple. Summer. Britain. Eng. Bot. ed. 3, t. 1044.
 — *lanuginosus*. Young shoots woolly.
 — *montanus*. A large variety. Syn., *T. nummularius*. B. M. 2666.
 — *ciliata*. Violet. July. N. Africa. 1824.
 — *citriodorus*. See *T. serpyllum*, var. *vulgaris*.
 — *coarsicus*. Lilac. Corsica. 1831.
 — *croaticus*. 1. July. Hungary. 1802.
 — *elongatus*. 1. August. 1816.
 — *ericeifolius*. ½. July. Spain. 1806.
 — *fruticulosus*. 1. July. Sicily. 1822.
 — *glabra*. ¾. July. South Europe. 1823.
 — *grandifolius*. B. M. t. 997. A synonym of *Calamintha grandiflora*.
 — *hirsutus*. ½. July. Spain. 1821.
 — *lanceolata*. ¾. July. N. Africa. 1823.
 — *nummularius*. B. M. t. 2666. See *T. Chamaëdryas*, var. *montanus*.
 — *pannonicus*. ½. July. Crimea. 1817.
 — *patavinus*. B. C. t. 499. A synonym of *Calamintha patavina*.
 — *piperefolia*. ¾. July. Spain. 1810.
 — *rotundifolius*. ¾. Pale pink. Pyrenees. 1879.
 — *serpyllum*. ¾. July. Britain. Eng. Bot. ed. 3, t. 1043.
 — *albus*. ½. White. July. Britain.
 — *atropurpureus*. Deep purple. North of England. 1888.
 — *citratus*. July.
 — *variegatus*. ¾. July. Britain.
 — *vulgaris*. July. Tauria. 1820. Syn., *T. citriodorus*.
 — *aureo-marginatus*. Garden variety. 1871.
 — *aureus*. Garden variety. 1870.

- spicatus*. 1. June. Pyrenean. 1832.
 — *stria*. Greece. Syn., *T. Zygis*. Sibth Fl. Gr. t. 574.
 — *vulgaris*. 1. June. South Europe. 1548.
 — *latifolius*. 1. June.
 — *variegatus*. 1. July. Britain.
 — *Zygis*. See *T. striatus*.

Thysacanthus. (From *thyrse*, a thyrse, and *Acanthus*; thyrse-flowered *Acanthus*. Nat. ord., *Acanthaceæ*; Tribe, *Justicieæ*.)

Stove evergreen shrubs. For culture, see GEISOMERIA. They must be spurred in closely. Flowers nearly all the year.

- T. barlerioides*. Red. Minas Geraes. Fl. Ser. t. 986.
 — *bracteolata*. 2. Red. July. New Grenada. 1823. B. M. t. 4441. Syn., *Justicia bracteolata*. Jacq. Ic. t. 205.
 — *callistachyus*. 2. Red. Mexico. Syn., *T. lilacinus*. Paxt. Fl. Gard. t. 53, and *Justicia lilacina* of gardens.
 — *coccineus*. See *T. Lemaireanus*.
 — *indicus*. B. M. t. 5062. A synonym of *Asystasia Thysacantha*.
 — *Lemaireanus*. 3. Red. February. Honduras 1840. Syn., *T. coccineus*, *T. strictus*. B. M. t. 4378, *Aphelandra longiscapa*, *Branthemum coccineum*, Fl. Ser. t. 240, and *Justicia longiracemosa*.
 — *lilacinus*. See *T. callistachyus*.
 — *nitidus*. 4. Red. West Indies. Syn., *Justicia nitida*. Andr. Rep. t. 570.
 — *rutilans*. 2. Deep red. Winter. Columbia. 1851. See also *T. Schomburgkianus*.
 — *Schomburgkianus*. 3. Bright crimson. Winter. New Grenada. 1855. B. M. t. 4851. Syn., *T. rutilans* of Fl. Ser. t. 732.
 — *strictus*. See *T. Lemaireanus*.

Thyrso'pteris. (From *thyrsus*, a staff, and *pteris*, a fern; alluding to the contracted fertile portion of the fronds. Nat. ord., *Filices*—*Polypodiaceae*.)

T. elegans. 15. Juan Fernandez.

Thysano'tus. (From *thysanotos*, fringed: the flower much fringed. Nat. ord., *Liliaceae*; Tribe, *Asphodeleae*.)

Greenhouse, purple-flowered, from Australia. By division of the plant in the herbaceous, and dividing the tuberous-rooted kinds; sandy loam and leaf-mould. Winter temp., 38° to 45°, and very little water.

GREENHOUSE HERBACEOUS.

T. intricat'us. ‡. July. 1838. B. R. 1840, t. 4.
— *ju'nceus*. †. 1804. B. R. t. 656.
— *proli'ferus*. 1. August. B. R. 1838, t. 8.
— *te'nais*. Lilac. May. 1836. B. R. 1838, t. 50.

GREENHOUSE TUBERS.

T. elat'ior. 1. August. 1823.
— *isanthe'rus*. ‡. August. 1822. B. R. t. 655.
— *tuberos'us*. 1. June. 1825.

Tiare'lla. (From *tiara*, a little diadem; form of seed-pod. Nat. ord., *Saxifragaceae*; Tribe, *Saxifrageae*.)

Hardy, white-flowered herbaceous plants. Divisions of the root; common soil; dry borders, and the front of them, or elevated places in rock-works.

T. cordifo'lia. †. April. N. America. 1731. B. M. t. 1589.
— *Menzie'sii*. See *Tolmiea Menziesii*.
— *polyphy'lla*. 1. April. Nepaul. 1820.

Tiari'dium. (From *tiara*, a diadem, and *eidos*, like; form of seed-pod. Nat. ord., *Boraginaceae*; Tribe, *Heliotropiceae*.) This genus is now united with **Heliotropium**.

Annuals. Seeds in a slight hotbed at the end of March, pricked off, and planted out towards the end of May. Perhaps *anisophyllum* will require a warm corner, or to be bloomed in a pot, in the greenhouse.

T. anisophy'llum. White. June. Africa. 1822.
— *indicum*. 1. Blue. June. W. Ind. 1820.
A synonym of *Heliotropium indicum*.
— *veluti'num*. 1. Blue. June. W. Ind. 1820.

Tibouchi'na. (The native name in Guiana. Nat. ord., *Melastomaceae*; Tribe, *Osbeckieae*.) See **Pleroma**.

Stove evergreen. Cuttings of firmish side-shoots in sand, under a bell-glass, and in a mild bottom-heat, any time between April and August; fibry 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. Matho'i. See *Pleroma barbigerum*, var. *lepidotum*.

Tico'rea. (The native name of *T. foetida*. Nat. ord., *Rutaceae*; Tribe, *Cusparieae*. Allied to *Galipea*.)

Stove, white-flowered, evergreen trees. Cuttings of ripe young shoots in sand, under a bell-glass, in heat, in March; fibry loam and sandy peat. Winter temp., 50° to 55°; summer, 60° to 80°.

T. foetida. 10. Guiana. 1825.
— *jasmiflora*. 20. Brazil. 1827.

Tiga'rea. (From the Guianese name. Nat. ord., *Rosaceae*; Tribe, *Potentilleae*.) A synonym of **Purshia**.
T. tridentata. A synonym of *Purshia tridentata*.

Tiger Iris. *Tigri'dia*.

Tiger Lily. *Lilium tigri'num*.

Tigri'dia. Tiger Flower. (From *tigris*, a tiger, and *eidos*, like; resemblance of the spotted flowers. Nat. ord., *Irideae*; Tribe, *Moraceae*. Syns., *Beatonia* and *Hydrotenia*.)

Having yielded to cross-breeding, this genus may be expected to run into varieties of very gay colours. Half-hardy or greenhouse bulbs, from Mexico. 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. 2. Dark purple. August. Mexico. 1843. Syn., *Beatonia atrata*.
— *bucci'fera*. 1. Greenish-yellow, with purple dots at the base. Jalisco Mts., Mexico. Gard. and For. 1889, p. 412, fig. 125.
— *conchifo'ra*. Swt. Fl. Gard. t. 128. See *T. pavonia*, var. *conchiflora*.
— *curva'ta*. Purple. April. Del Monte. 1843. Syn., *Beatonia curva'ta*.
— *grandiflora a'lba*. White, base of segments yellowish with reddish-brown spots. 1882.
— *Herberti*. B. M. t. 2599. A synonym of *Cypella Herberti*.
— *lu'tea*. ‡. Yellow. June. Peru. 1843. B. M. t. 6295. Syn., *Beatonia lutea*.
— *meale'dgris*. 1‡. Purple. Spring. Mexico. Syn., *Hydrotenia meleagris*, B. R. 1842, t. 39.
— *pavonia*. 1-2. Orange, red. June. Mexico. 1796. Red. Lil. t. 6. Syns., *Ferraria pavonia*, Andr. Rep. t. 178, and *F. Tigridia*, B. M. t. 532.
— *albiflora*. White.
— *conchifo'ra*. Deep yellow. Syn., *T. conchiflora*, Paxt. Mag. xiv. p. 53.
— *speciosa*. A brightly coloured variety. Fl. Ser. t. 908, fig. 1.
— *Pringlei*. 1-2. Scarlet, orange, blotched with crimson. Chihuahua. Gard. and For. 1888, p. 388, fig. 61.
— *Van-Houttei*. 1. Yellow, lilac. Spring. South Mexico. 1875. Fl. Ser. t. 2174.
— *viola'cea*. 1. Rose-purple, white. May. South Mexico. 1838. Syn., *Beatonia purpurea*.

Tigris, Flower of. *Tigri'dia pavonia*.

Tile-Root. *Geissorhi'za*.

Tilia. Lime or Linden-tree. (A name used by Virgil for the Lime. Nat. ord., *Tiliaceae*; Tribe, *Tiliceae*.)

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. americana* and its many varieties are very ornamental, but not so hardy as the European in our moist climates.

- T. alba*. Wats. Dendr. t. 71. See *T. argentea*.
 — *pe'ndula*. See *T. petiolaris*.
 — *america'na*. 60. June. N. Amer. 1752. Wats. Dendr. t. 134.
 — *heterophylla*. 30. July. N. America. 1811.
 — *lacino'stra*. 50. White. June. N. Amer. 1820.
 — *pe'ndula*. See *T. petiolaris*.
 — *pube'scens*. 20. July. N. Amer. 1726.
 — *pube'scens leptophylla*. 20. Yellow. July. N. Amer.
 — *argen'tea*. 30-50. Yellowish-white. Summer. Eastern Europe. 1767. Syn., *T. alba*, Wats. Dendr. t. 71. White or Silver Lime.
 — *orbicularis*. Seedling variety with pendant branches. 1890.
 — *pe'ndula*. See *T. petiolaris*.
 — *corda'ta*. 50. Yellowish-white. Summer. Europe. Syns., *T. microphylla*, *T. parvifolia* and *T. ulmifolia*.
 — *argen'tea*. Leaves bordered with creamy-white. Silesia. 1862. Syn., *T. parvifolia*, var. *argentea*.
 — *dasystyla*. 30-60. Summer. South Tauria. 1838.
 — *europæa*. 50. July. Britain.
 — *au'rea*. 50. August. Britain.
 — *dasystyla*. 50. July. Tauria.
 — *laciniata*. 50. August. Britain. Syn., *T. platyphyllus*, var. *asplenifolia*.
 — *microphylla*. 50. August. Britain.
 — *pe'ndula*. Juns. 1815.
 — *platyphylla*. 50. August. Britain. Syn., *T. platyphyllus*.
 — *platyphylla au'rea*. 20. Britain.
 — *pyramida'lis*. Garden variety. 1838.
 — *ru'bra*. 50. August. Britain.
 — *variegata*. See *T. vulgaris*, var. *variegata*.
 — *vitifolia*. June. 1846.
 — *heterophylla*. 30-50. Greenish-yellow. July. North America. 1811. American White Basswood.
 — *intermedia*. See *T. vulgaris*.
 — *microphylla*. See *T. cordata*.
 — *parvifolia*. See *T. cordata*.
 — *argen'tea*. See *T. cordata*, var. *argentea*.
 — *petiolaris*. 50. Yellowish-green. July. Crimea? B. M. t. 6737. Syns., *T. alba*, var. *pendula*, *T. americana*, var. *pendula*, and *T. argentea*, var. *pendula*.
 — *platyphyllus*. See *T. europæa*, var. *platyphylla*.
 — *asplenifolia*. See *T. europæa*, var. *laciniata*.
 — *ulmifolia*. See *T. cordata*.
 — *vitifolia*. See *T. europæa*, var. *vitifolia*.
 — *vulgaris*. Pale yellowish. Summer. Europe. Syns., *T. europæa* (partly) and *T. intermedia*.
 — *variegata*. Leaves blotched with creamy-white. Syn., *T. europæa*, var. *variegata*.

Tillandsia. (Named after E. Tillands, physician at Abo. Nat. ord., Bromeliaceæ; Tribe, Tillandsiæ. Syn., *Vriesia*.)

Stove epiphytes. Divisions and suckers. The weaker kinds do best in very shallow baskets, 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. acav'lis*. B. R. t. 1157. See *Cryptanthus undulatus*.
 — *zebr'na*. See *Cryptanthus undulatus*, var. *zebrinus*.
 — *Albe'rti*. Garden hybrid. 1888.
 — *aloifo'lia*. See *T. flexuosa*.
 — *amethystina*. Yellow. South Brazil. 1884. Syn., *Vriesia amethystina*, Belg. Hort. 1884, p. 330, tt. 15, 16.
 — *a'nceps*. $\frac{1}{2}$. Blue. April. W. Ind. 1820. B. C. t. 771. Syns., *T. setacea*, *T. tricolor*, *Phytarrhiza anceps* and *Vriesia anceps*.
 — *angustifo'lia*. $\frac{1}{2}$. Blue. August. W. Ind. 1822.
 — *argen'tea*. 1. Bluish. Peru. 1865. Syn., *T. tectorum*.
 — *arma'dæ*. Leaves violet. South Columbia. 1833.
 — *Balbia'na*. 1. Violet; bracts rose. W. Indies. 1874. Belg. Hort. 1879, tt. 6-7.
 — *Barille'ti*. Yellow. Andes of Ecuador. 1833. Syns., *Vriesia Barilleti* and *V. erotalophora*. *Vriesia Wittmachiana*, Gf. t. 1283, is a hybrid between this and *T. Lindenii*.
 — *Bartra'mi*. 1. Blue. April. Carolina. 1825.
 — *Bilbe'rgiæ*. $\frac{1}{2}$. Green, white, rose. Mexico. 1870. Syn., *Vriesia Bilbergiæ*.
 — *brachycar'los*. $\frac{1}{2}$. Purple. Mexico. 1878.
 — *brachysta'chys*. See *T. carinata*.
 — *bractea'ta*. 1. August. W. Ind. 1824.
 — *bryo'idæ*. A small moss-like plant. South Brazil. 1880. Syn., *T. polytrichoides*.
 — *bulbo'sa*. $\frac{1}{2}$. Blue. November. Trinidad. 1823. Syn., *T. pauciflora*.
 — *pi'cta*. $\frac{1}{2}$. Pink. December. Jamaica. 1845.
 — *can'e'scens*. $\frac{1}{2}$. Blue. June. W. Ind. 1824.
 — *ca'put-medu'sæ*. Mexico. 1880.
 — *carina'ta*. Yellow; bracts green and scarlet. Brazil. 1866. Syns., *T. brachystachys*, *Vriesia brachystachys*, *V. carinata*, *V. pittacina*, vars. *brachystachya* and *carinata*.
 — *chryso'sta'chys*. Yellow. Andes of Peru. 1881. B. M. t. 6906. Syn., *Vriesia chryso-stachys*.
 — *circina'lis*. See *T. Duratii*.
 — *circina'ta*. See *T. streptophylla*.
 — *coarcta'ta*. 1. June. Chili. 1823.
 — *complanata*. See *T. ziphostachys*.
 — *compre'ssa*. 1. June. Chili. 1823.
 — *coralli'na*. Green; bracts and scape purplish-crimson. Tropical America. 1871. Syns., *Encholirion coralbinum*, Flor. Mag. new ser. t. 116, and *Vriesia corallina*.
 — *ro'seum*. Rose. Syn., *Encholirion roseum*.
 — *cordobe'nsis*. See *T. recurvata*.
 — *crocea'ta*. Saffron-yellow. Brazil. 1880. Syn., *Phytarrhiza crocata*.
 — *cy'nea*. Guatemala. 1852. Syns., *Allardtia cyanea* and *Platytychys cyanea*.
 — *decurva'ta*. 2. Yellow. Rio Janeiro.
 — *dianthoi'dea*. Blue; bracts rosy-purple. Uruguay. Syn., *T. stricta* of B. R. t. 1338.
 — *ro'sea*. White; bracts rosy-pink. Syn., *T. recurvifolia*, E. M. t. 5246, and *T. rosea*, E. R. 1357.
 — *didi'stica*. White. South Brazil. 1881. Syn., *Anoplophytum didistichum*.
 — *dista'chya*. $\frac{1}{2}$. White. January. Honduras. 1880.
 — *Dura'tii*. Violet. Uruguay. 1879. Syns., *T. circinalis*, *T. revoluta* and *Waltisia Duratii*.
 — *Duvallia'na*. 1. Yellow, green. South Brazil. 1884. Syn., *Vriesia Duvalliana*, Belg. Hort. 1884, p. 105, t. 7-8. *Vriesia fulgida* is a hybrid between this and *T. incurvata*.

- T. éminens*. A form of *T. bulbosa*.
 — *ensiformis*. 1½. Reddish-yellow. Brazil.
 — *erubescens*. A form of *T. bulbosa*.
 — *fasciculata*. 1. Blue. June. W. Ind. 1820.
 — *fenestralis*. Pale yellow. Parana. 1875. B. M. t. 6898. Syn., *Vriesia fenestralis*, Ill. Hort. new ser. t. 12.
 — *filifolia*. Pale blue. Central America. Syn., *T. stictiflora*.
 — *flexuosa*. 1. Blue. W. Ind. 1790. B. R. t. 749. Syn., *T. aloifolia* and *T. tenuifolia*.
 — *pa'lhida*. 1. Yellow. June. W. Ind. 1815.
 — *foliosa*. Violet. Mexico. 1885.
 — *Furstenbergii*. A synonym of *Streptocalyx Furstenbergii*.
 — *Gardneri*. Rose. February. Brazil. 1842. Syn., *Anoplophytum incanum*, Belg. Hort. 1881, t. 11.
 — *Gei'sset*. Rosy. Chili. 1889. Gf. t. 1302, fig. 2.
 — *geminiflora*. ½. Red, yellow. February. Brazil. 1840. Syn., *T. rubida* and *Anoplophytum geminiflorum*.
 — *gigantea*. A form of *T. regina*.
 — *gladioliflora*. Greenish-violet. Costa Rica. 1893. Syn., *Vriesia gladioliflora*.
 — *glaucophylla*. 1½. Greenish-white, purple. August. Santa Martha. 1847. Syn., *Vriesia glaucophylla*, B. M. t. 4415.
 — *gracilis*. 1. June. Chili. 1823. Syn., *Vriesia gracilis*.
 — *guttata*. 2½. Yellow. Leaves red-spotted. Brazil. 1875. Syn., *Vriesia guttata*. Ill. Hort. new ser. t. 200.
 — *Hameleana*. Violet, white. 1870. Syn., *Phytarrhiza Hameleana* and *Wallisia Hameleana*.
 — *heliconioides*. 1. White. Rio Magdalena Valley. Syn., *Vriesia bellula*, *V. Falkenbergii* and *V. heliconioides*. Ill. Hort. new ser. t. 490.
 — *hieroglyphica*. Leaves marked above with dark green; below with dark purple. Syn., *Massangea hieroglyphica*, Rev. Hort. 1887, p. 175. *M. tigrina*, and *Vriesia hieroglyphica*, Ill. Hort. 1884, t. 514.
 — *indiana*. Purple. March. Buenos Ayres. 1841.
 — *incurvata*. Yellow, green. South Brazil. 1882. B. M. t. 6882. Syn., *T. inflata*, *Vriesia incurvata* and *V. psittacina*, var. *Truffantiana*.
 — *inflata*. See *T. incurvata*.
 — *ionantha*. ½. Violet. Brazil. 1871. Syn., *T. erubescens* and *Pitrophyllum ionanthum*.
 — *izoides*. ½. Orange. Uruguay.
 — *Jonghei*. Dull yellow. Brazil. 1874. Belg. Hort. 1874, t. 12-13. Syn., *Vriesia Jonghei*.
 — *juncofolia*. See *T. setacea*.
 — *Karwinskiana*. 1. Violet. Winter. Mexico. 1878.
 — *Kirchoffiana*. Bracts coral-red; flowers blue. Mexico. Gf. 1889, p. 107, fig. 22.
 — *Kramerii*. A form of *T. psittacina*.
 — *Lindenii*. Violet; bracts rosy. Peru. 1867. Syn., *T. Morreniana* and *Phytarrhiza Wallisia Lindenii*.
 — *intermedia*. Bracts rosy-green. 1871.
 — *Koutsinskiana*. Flowers double. 1880. Syn., *Phytarrhiza Lindenii*, var. *Koutsinskiana*.
 — *luzurians*. Flower-stem branched. 1871.
 — *major*. Flowers larger. Peru. 1871.
 — *Regelia*. Blue, white; bracts red. Ecuador. 1877. Syn., *T. Lindeniana*.
 — *tricolor*. Violet, with a white eye; bracts red.
 — *Lindenii*. Violet.
 — *Lindeniana*. See *T. Lindenii*, var. *Regeliana*.
 — *lineata*. Leaves green, with violet stripes; under surface violet. Columbia.
 — *Malzinei*. 1. White. Mexico. 1874. B. M. t. 6495. Syn., *Vriesia Malzinei*.
 — *monadelphica*. Whitish, pale purple. Guiana. 1882. Syn., *Phytarrhiza monadelphia*.
 — *Morreii*. 1½. Light brown, yellowish-green. Brazil.
 — *Morreniana*. See *T. Lindenii*.
 — *musica*. See *Caraguata musica*.
 — *narthecioides*. 1. Yellowish-white. Ecuador. 1878.
 — *nitida*. 2. Blue. October. Jamaica. 1823.
 — *nutans*. 2. Blue. August. Jamaica. 1793.
 — *obscura*. 2. July. S. America. 1820.
 — *paniculata*. 1. Blue. June. W. Indies. 1820.
 — *parabaica*. ¾. Yellow; bracts reddish-purple. Summer. Brazil. 1885. Syn., *Vriesia parabaica*.
 — *Pastuchoffiana*. Leaves irregularly marked with dark green lines. Brazil. 1885.
 — *pauciflora*. ¾. Violet. 1878.
 — *Philippoi-Coburgii*. 1½. Golden-yellow, greenish. Brazil. Syn., *Vriesia Philippoi-Coburgii*.
 — *picata*. See *T. splendens*.
 — *Platzmannii*. 3. Yellow. South Brazil. 1875. Syn., *Vriesia Platzmannii*.
 — *polystachya*. 2. June. S. America. 1825.
 — *polytrichoides*. See *T. bryoides*.
 — *pruinosa*. ¾. Blue. Tropical America. Belg. Hort. 1876, t. 16-17.
 — *psittacina*. Scarlet. July. Rio Janeiro. 1826. B. M. t. 2841. Syn., *Vriesia psittacina*, *Vriesia retroflexa*, Belg. Hort. 1884, p. 185, t. 10, is a hybrid between this and *T. scalaris*.
 — *psittacina-scalaris*. 1884. Syn., *Vriesia retroflexa*. Belg. Hort. 1884, p. 185, t. 10.
 — *pulchella*. See *T. pulchra*.
 — *pulchra*. ¾. Pink. October. Tropical America. 1823. Syn., *T. pulchella*, B. M. t. 5229, and *Pourretia surinamensis*.
 — *amaena*. Blue. Brazil. 1883. Belg. Hort. 1883, t. 17. Leaves more slender than in the type.
 — *pu'nila*. A form of *T. bulbosa*.
 — *ramosa*. 1. June. Chili. 1823.
 — *recurvata*. ¾. Purple. July. Jamaica. 1793.
 — *recurvifolia*. See *T. dianthoidea*, var. *rosea*.
 — *regina*. White. Rio Janeiro. 1867. Fragrant. Syn., *T. gigantea*, *Vriesia gigantea* and *V. Glazioviana*, *Vriesia imperialis*, Rev. Hort. 1888, p. 58, is a form of this.
 — *reticulata*. 2. Milk-white. Brazil. 1870. Syn., *Guzmannia reticulata* and *Vriesia reticulata*.
 — *retroflexa*. Yellow. Garden hybrid. 1885.
 — *revoluta*. See *T. Duratii*.
 — *rigida*. 1. June. Chili. 1823.
 — *Rodrigasiana*. Citron-yellow. South Brazil. 1883. Syn., *Vriesia Rodriguesiana*. Ill. Hort. new ser. t. 467.
 — *Roezii*. Rosy. N. Peru. 1877. Belg. Hort. 1877, t. 15.
 — *rosea*. See *T. dianthoidea*, var. *rosea*.
 — *rubida*. See *T. geminiflora*.
 — *sanguinolenta*. Leaves with ocellated blood-red blotches. Columbia. 1875. Syn., *Vriesia sanguinolenta* and *Encholirion sanguinolentum*.
 — *Saundersii*. 1½. Pale yellow. Tropical America. 1872. Syn., *Vriesia Saundersii*.
 — *scalaris*. ¾. Yellow, green; bracts rosy. Brazil. 1877. Syn., *Vriesia scalaris*.

- T. Schlectenda'hlii*. 1. Central Mexico. 1888. Syn., *Vriesia caespitosa*.
 — *serrata*. 2. Yellow. June. Jamaica. 1793.
 — *setacea*. †. Blue. June. W. Indies. 1824. Ref. Bot. t. 288. Syn., *T. juncofolia* and *T. tenuifolia*. See also *T. anceps*.
 — *spectiosa*. See *T. splendens*.
 — *spiculosa*. Mexico. 1878.
 — *splendens*. Yellow. Guiana. Fl. Ser. t. 43. Syns., *T. speciosa*, *T. picta*, *T. zebrina*, and *Vriesia splendens*.
 — *staticiflora*. See *T. filifolia*.
 — *streptophylla*. Violet. Mexico. 1878. B. M. t. 6757. Syn., *T. circinata*.
 — *striata*. †. Blue. September. Brazil. 1810. B. M. t. 1529. 1529. See also *T. dianthoides*.
 — *caule scens*. A tall variety.
 — *tectorum*. White, blue. Andes of Peru. 1865. Syns., *T. argentea* and *Pourretia nivosa*.
 — *tenuifolia*. See *T. setacea*.
 — *tessellata*. Leaves with dark-green veins on a paler ground. Tropical America. 1873. Syn., *Vriesia tessellata*. Belg. Hort. 1882, p. 381, t. 1416.
 — *tricolor*. †. Violet, white; bracts green. Winter. Mexico. 1877. Syn., *Vriesia tricolor*. See also *T. anceps*.
 — *umbellata*. 1. Blue. White. Winter. Ecuador. 1882.
 — *usneoides*. Greenish. Tropical America. 1823. B. M. t. 6309.—Spanish Moss, or Old Man's Beard.
 — *utricula*. 2. Purple, yellow. West Indies. 1793.
 — *vernicoesa*. White. Parana. 1887.
 — *vestita*. †. Yellow; bracts bright red. Mexico. 1887.
 — *viminalis*. 2. White. Costa Rica. 1873. Syns., *Vriesia viminalis* and *V. viridiflora*.
 — *virginalis*. Green, white. Mexico. 1873.
 — *viridiflora*. 2. Green. Summer. Mexico. 1887. See also *T. viminalis*.
 — *vitellina*. Yellow. February. Venezuela.
 — *vitta*. See *Schlumbergeria virescens*.
 — *Warmingtonii*. 4. Yellow. South Brazil. 1884. Syn., *Vriesia Warmingtonii*. Belg. Hort. 1884, p. 260, t. 12-13.
 — *Wauraneae*. 1‡. Green, yellow. Summer. Syn., *Vriesia Wauraneae*.
 — *xiphoides*. †. White. July. Buenos Ayres. 1810.
 — *xiphostachys*. Purple. August. Central America. 1861. Syns., *T. complanata* and *Vriesia xiphostachys*, B. M. t. 4287.
 — *zebrina*. See *T. splendens*.

Tille'tia. Bunt. The most common species of this genus of Fungi is *T. Tritici* (Syn., *T. caries*), which attacks the ovaries of wheat. The diseased grains become filled with a mass of dark brown powdery matter, which on microscopic examination are seen to consist of spherical granules with a reticulated surface. These granules under favourable circumstances emit a tube, bearing needle-shaped sporidia at its apex (as



shown in the accompanying figure, one sporidium being detached).

These conidia sometimes conjugate before falling off to reproduce the fungus.

Timo'nus. (From the Malayan name. Nat. ord., *Rubiaceae*; Tribe, *Chiococceae*.)

Stove, evergreen tree. Sandy, fibry loam and a little peat. Cuttings.

T. Ru'mphii. 12. White. East Indies. 1823. Syn., *Erihalis Timon*.

Tina'ntia. (After a Belgian botanist named *Tinant*. Nat. ord., *Comelinaceae*; Tribe, *Tradescantieae*.)

Half-hardy, perennial herb. For culture, see TRADESCANTIA.

T. fulgax erecta. 1‡. Blue or purplish. July. S. America. 1794. Syn., *Tradescantia erecta*, B. M. t. 1340, *T. latifolia*, B. C. t. 1300, and *T. undata*, B. R. t. 1403.

Tine'a. A genus of moths, the larvae of which are very destructive.

T. dauce'lla. Carrot Moth. A synonym of *Depressaria dauce'lla*, which see.

T. pade'lla, Small Ermine Moth, is white, with black dots on the upper wings. Eggs deposited in June and July near the flower-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.

T. clercke'lla. 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. capite'lla. Triple-spotted Currant Tinea. The larvae 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. cortice'lla. See **Pyrus**.

T. porrecte'lla, 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 tip; 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.

Tinnea. (In honour of *Mademoiselle Tinné*, Nile voyager. Nat. ord., *Labiata*; Tribe, *Ajugoidæ*.)

Stove plant. For cultivation, see PLECTRANTHUS.

T. æthiopicæ. Maroon. Central Africa. 1867. Violet-scented. B. M. t. 5637.
— *dentata*. A variety with a large calyx. 1884. B. M. t. 6744.

Tipula. 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, etc., from May to August. During this 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 quick-lime were scattered on the ground at night, it would destroy them when they come to the surface to feed. 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.

Tithonia. (From *Tithonus*, in mythology, the favourite of Aurora. Nat. ord., *Compositæ*; Tribe, *Helianthoidæ*. Allied to *Helianthus*.)

Stove, yellow-flowered annuals from Central America. Propagated by seeds. Rich, sandy, fibry loam. Winter temp., 50° to 55°; summer, 60° to 80°.

T. excoleta. August. 1824.

— *ovata*. B. M. t. 3901. See *Zexmenia ovata*.

— *speciosa*. 4. August. Mexico. 1833. Syn.,

Helianthus speciosus. B. M. t. 3295.

— *tagetiflora*. 10. August. Vera Cruz. 1818.

B. R. t. 591.

— *tubæformis*. 5. July. Mexico. 1799. Syn.,

Helianthus tubæformis. B. R. t. 1519.

Tithymalus. (From *Tithumalos*, the Greek name for the Spurge, *Euphorbia*. Nat. ord., *Euphorbiaceæ*.) A synonym of **Euphorbia**.

T. geniculata. A synonym of *Euphorbia repanda*.

— *pendulus*. A synonym of *Euphorbia pendula*.

Tittmannia. (After *J. A. Tittmann*, an apothecary of Hanover. Nat. ord., *Scrophularinæ*; Tribe, *Gratiolææ*.) A synonym of **Vandelia**.

T. ovata. See *Vandelia crustacea*.

— *viscosa*. See *Vandelia hirsuta*.

Toad Flax. *Lina'ria*.

Toad Flax, Ivy-leaved. *Lina'ria Cymbala'ria*.

Toad Flower, African. *Stape'lia*.

Toad Stool. A general name for poisonous fungi of the order *Hymenocetes*.

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 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 aphid without doing any injury to the plants. If the house is not filled too rapidly with smoke, which 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 the operation is not done cautiously. There is a spurious kind of tobacco-paper sometimes offered in spring by the tobacco-nists, apparently made to meet the in-

creased 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 any one 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 table-spoonful of saltpetre in a pint of water; take pieces of the coarsest brown paper, six inches wide and ten 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 will cleanse seventeen peach and nectarine-trees, averaging seventeen feet in length, and twelve 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 tobacconist's 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, and allowing it to remain until cold, and then straining.

Tobacco, Rock. *Primul'na Tabacum.*

Toco'ca. (From the Guianese name of *T. guianensis*. Nat. ord., *Melastomaceæ*; Tribe, *Miconiaceæ*.)

Stove shrubs, natives of the northern part of South America. Peat mixed with half the quantity of sandy loam. Cuttings of side shoots, taken early in the year.

- T. ferrug'nea*. South America. 1868. Syn., *Sphærogyne ferruginea*.
— *guianensis*. 4. Pale pink. August. Guiana. 1826.
— *imperialis*. Peru. 1869. Syn., *Sphærogyne imperialis*.
— *latifolia*. Pink or red. South America. 1862. Syn., *Sphærogyne latifolia*.

Tocoy'na. (Name in Guiana. Nat. ord., *Rubiaceæ*; Tribe, *Gardenieæ*. Allied to *Posoqueria*.)

Stove evergreen shrub. Cuttings of half-ripened shoots in sandy soil, under a glass, in heat, in May; fibry peat, a little lumpy loam, sand, and charcoal. Winter temp., 50° to 60°; summer, 60° to 85°.

- T. longifo'ra*. 6. Yellow. Guiana. 1826.

Todda'lia. (From *Toddali*, the Malabar name of *T. aculeata*. Nat. ord., *Rutaceæ*; Tribe, *Zanthoxyloæ*. 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; fibry loam and a little peat or leaf-mould. Winter temp., 50° to 60°; summer, 60° to 80°.

- T. aculeata*. 6. E. Indies. 1790. Syn., *Scopolia aculeata*.
— *angustifo'lia*. 6. Mauritius. 1824.
— *lanceolata*. 4. White. May. 1824. Syn., *Vepris lanceolata*.
— *paniculata*. 30. Greenish-white. May. 1824.

Toddy Palm. *Caryota u'rens*.

To'dea. (Named after *H. J. Tode*, a German student of Ferns. Nat. ord., *Filices*. Allied to *Osmunda*.)

Greenhouse, brown-spored ferns. See **FERNS**.

- T. africa'na*. See *T. barbara*.
— *austra'lis*. Australia. 1831.
— *barbara*. 6. Temperate Australia. 1805. Syn., *T. africana*.
— *Fraseri*. New S. Wales.
— *grandi'pinnula*. 1½. Garden hybrid. G. C. 1886, xxv. p. 752.
— *hymenophylloides*. New Zealand. 1842. Syn., *T. pellucida*.
— *interme'dia*. New Zealand. 1869.
— *pellucida*. See *T. hymenophylloides*.
— *rivula'ris*. New S. Wales.
— *superba*. New Zealand. 1861. Syn., *Leptopteris superba*.
— *Wilkesia'na*. 1½. Fiji Islands. 1870.

Tofie'ldia. (Named after *Mr. Tofield*, a botanical patron. Nat. ord., *Liliaceæ*; Tribe, *Narthecieæ*.)

Hardy, North American, herbaceous perennials. Division of the roots in spring; sandy loam and a little vegetable mould.

- T. glutinosa*. ½. White. 1825. Linn. Trans. xii. t. 8.

T. pubens. Green, yellow. July. 1840. B. M. t. 3859.
 — *pubescens.* †. White. April. 1790. Red. Lil. t. 324.

Tolmie'a. (In honour of *Mr. Tolmie*, a surgeon of the Hudson's Bay Company. Nat. ord., *Saxifragaceæ*; Tribe, *Saxifragæ*.)

The only species of this genus is a hardy perennial herb.

T. Menziesii. 1-2. Greenish. April. North West America. 1812. Syns., *Heuchera Menziesii* and *Tiarella Menziesii*.

To'lpis. (Meaning not known. Nat. ord., *Compositæ*; Tribe, *Cichoriaceæ*. Allied to *Lapsana*.)

Hardy, yellow-flowered annuals, from the South of Europe. Seeds in flower-beds or borders in April.

T. altissima. 4. June. 1823.

— *barbata.* 2. Yellow, purple. June. 1620. Syn., *Crepis barbata.* B. M. t. 35. Yellow Garden Hawk Weed.

— *coronifolia.* 1. June. 1777.

— *grandiflora.* June. 1830.

— *macrorrhiza.* Madeira. Syn., *Crepis macrorrhiza.* B. M. t. 2988.

— *umbellata.* 2. Yellow, purple. 1820.

— *virgata.* 2. 1818.

Tolu Balsam-tree. *Myroxylon Toluiferum.*

Tomato. *Lycopersicon esculentum.* See Love Apple.

Tomato, Cannibal's. *Solanum anthropophagorum.*

Tomato disease. This disease is caused by *Peronospora infestans*, the same fungus that causes the **Potato disease**, to which refer for its history.

Tonga Plant. *Epipremnum mirabile.*

Tongue Grafting. See **Grafting.**

Tongue Grass. *Lepidium sativum.*

Tongue Violet. *Schweiggeria pauciflora.*

Tonquin Bean. *Dipterix odorata.*

Tool-house. Upon this too-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; it will be found necessary to have a set of rules drawn up, and hung in a conspicuous place in the tool-house, which should be rigidly enforced, as well for the workman's benefit, as for the good preservation of the tools. Dirty tools engender slovenly habits, and inferior workmanship. The tool-shed of the outhouse and flower-garden department is a lean-to shed at the back of a hot house, substantially

built, and covered with slate; length, fifty-four feet; width, thirteen feet; height at back, fifteen feet; and height at front, nine feet; paved all through with Yorkshire flag-stones, which are neatly swept up every night, the last thing, and washed thoroughly once a week. 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, etc., etc. 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, etc.; 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, etc.; 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 roses 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 wheelbarrow 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, etc., etc. Each and all are kept under the same regulations."

Tooth-ache-tree. *Zanthoxylum*.

Toothwort. *Dentaria*.

Top-dressing. Manure spread over the surface whilst the crop is growing.

Torch Lily. *Kniphofia*.

Torch-Thistle. *Cereus*.

Tore'nia. (Named after Rev. O. Tore'n, a Swedish botanist. Nat. ord., *Scrophulariaceæ*; Tribe, *Gratioleæ*.)

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; fibry 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. Deep purple. June. 1846.

— *asia'tica*. 1½. Purple. June. E. Indies. 1845.

— *hirsu'ta*. White. June. East Indies. 1823. Syn., *T. hirsuta*. B. M. t. 5167.

— *auriculato'folia*. Lilac, purple, white. India. 1871. Flor. Mag. t. 534. A synonym of *Craterostigma pumilum*.

— *Baillon'i*. See *T. Java*.

— *co'ncolor*. B. R. 1846, t. 62. See *T. rubens*.

— *cordifo'lia*. ½. Lilac. July. E. Ind. 1811. B. M. t. 3715.

— *diffu'sa*. A synonym of *Vandellia Roxburghii*.

— *edentula*. B. M. t. 4229. See *T. peduncularis*.

— *exappendiculata*. White, deep blue. S. China. 1877.

— *Ja'va*. ¾. Yellow, purple. Summer. India. 1823. B. M. t. 6700. Syn., *T. Baillon'i*.

— *Fo'rdii*. ¼-1. Straw-coloured, violet. Summer. China. B. M. t. 6797.

— *Fournie'ri*. ¼. Pale blue, black-purple, yellow. Summer. Cochin China. 1876.

— *compa'cta*. A dwarf, compact variety. Gh. 1887, p. 667, fig. 172.

— *hirsu'ta*. See *T. asiatica*, var. *hirsuta*.

— *peduncula'ris*. Pale yellow, purple. China. 1883. Syn., *T. edentula*. B. M. t. 4229.

— *rubens*. 1½. Purple. July. Hongkong. 1844. Syn., *T. concolor*. B. R. 1846, t. 62.

— *scabra*. B. M. t. 3104. See *Artanema fimbriatum*.

Toringo Crab. *Pyrus Tori'ngo*.

Tormentil. *Potentilla Tormentilla*.

Torre'ya. (Named after Dr. Torrey, an American botanical writer. Nat. ord., *Coniferae*; Tribe, *Taxacee*. Allied to *Taxus*.)

For culture, see TAXUS. Hardy evergreens.

T. californica. 40. California. 1851. Syn., *T. Myristica*. B. M. t. 4780. Californian Nutmeg.

— *gra'ndis*. 80. North China.

T. Humboldtii. Georgia. 1848.

— *Myristica*. G. C. 1884, xxii. p. 68L. See *T. californica*.

— *nucifera*. 30. Japan. Syns., *Podocarpus nucifera* and *Thalamia nucifera*.

— *taxifo'lia*. 50. Florida. 1840. Ic. Pl. t. 232-233.

Tortoise Plant. *Testudina'ria*

elephantipes.

To'rtrix. A genus of moths.

T. lusca'na generates a red grub, and

T. cynosbana a black-spotted, green grub,

both very destructive of blossom-buds.

T. vitisa'na. 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. nigrica'na. 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 them; 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. Bergmannia'na. 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. ocella'na. 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. Waerberia'na. 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.

T. Pomona'na. Codling Moth. Its reddish-white grub is common in apples and pears. Moth light grey, streaked with dark grey. Seen in the 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.

T. turion'na, *T. hyrcynia'na*, *T. resinella*, and *T. buolia'na*, all infest pine-trees, injuring them by depositing their eggs in the buds, which are subsequently preyed upon by their caterpillars.

Tota'ra Pine. *Podocarpus Tota'ra*.

Touch-me-not. *Impatiens*.

Tournefortia. (Named after J. P. Tournefort, a great systematic botanist. Nat. ord., *Boraginæ*; Tribe, *Heliotropiæ*. 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 *heliotropioides*, 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. cordifolia*. White. Tropical America. 1887. Rev. Hort. 1887, p. 123, figs. 26-7.
 — *fruticosa*. 4. Yellow. June. Canary Islands. 1800. B. R. t. 464.
 — *umbellata*. White. June. Mexico. 1826.
 — *velutina*. 10. White. June. Mexico. 1826.

STOVE EVERGREENS.

- T. caracasana*. White. May. Caraccas. 1828.
 — *gnaphaloides*. White. June. W. Indies. 1820.
 — *heliotropioides*. 2. Pale lilac. May. Buenos Ayres. 1829. B. M. t. 3096.
 — *hirsutissima*. 10. Green, yellow. June. W. Ind. 1818.
 — *laurifolia*. 12. Yellow. July. W. Ind. 1829.
 — *maculata*. Yellow. June. Carthagen. 1828.
 — *scandens*. 10. Green, yellow. July. Peru. 1816.
 — *volvibilis*. 10. Green, yellow. July. Jamaica. 1752.

Tourretia. (After Marc Ant. Claret de la Tourrette, 1729-1793, a botanical author. Nat. ord., *Bignoniaceæ*.)

Hardy climbing herb. Seeds sown early in spring in a hotbed, the seedlings transplanted when large enough.

T. lappa'cea. 6. Violet-purple. July. Alpine Tropical America. 1788. B. M. t. 3749.

Tova'ria. (Derivation unexplained. Nat. ord., *Liliacæ*; Tribe, *Polygonacæ*. Allied to *Convallaria*.) A synonym of **Smilacina**.

T. oleracea. 4. White. Sikkim. 1877. A synonym of **SMILACINA OLERACEA**.

Tovomi'ta. (*Tovomite*, the name in Cayenne. Nat. ord., *Guttiferæ*; Tribe, *Clusiææ*.)

Stove evergreen trees. Cuttings of half-ripened shoots in sand, under a bell-glass, in heat; sandy peat and fibry loam. Winter temp., 58° to 65°; summer, 65° to 90°, and moist atmosphere.

T. Choisya'na. 10. Yellow. May. Cayenne. 1823. Syn., *T. clusiæfolia* and *Micranthera clusiæfolia*.

— *fructipendula*. 18. Yellowish. January. Peru. Syn., *Beauharnoisia fructipendula*.

— *guianensis*. Green. Guiana. 1827. Syn., *Mariaba guianensis*.

Town Cress. *Lepidium sativum*.

Toxicodendron. (From *toxicon*, poison, and *dendron*, tree; the fruits are poisonous. Nat. ord., *Euphorbiacæ*.)

Small much-branched greenhouse tree or shrub. Propagated by cuttings, in sand, under a bell-glass.

T. capense. 6. June. South Africa. 1783. Syn., *Hyacinthine globosa*.

Toxicophlæ'a. (From *toxicon*, poison, and *phloios*, bark. Nat. ord., *Apocynaceæ*; Tribe, *Plumeriææ*.)

Greenhouse trees or shrubs. Soil rich and light. Cuttings.

T. cestroides. A synonym of *Acokanthera venenata*.

— *spectabilis*. See *Acokanthera spectabilis*.

— *Thunbergii*. See *Acokanthera venenata*.

Trachelium. Throatwort. (From *trachelos*, the neck; supposed efficacy in diseases of the trachea. Nat. ord., *Campanulacæ*; Tribe, *Campanuleæ*.)

Hardy herbaceous perennial. 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. cæruleum. 2. Blue. August. Italy. 1640. B. R. t. 72.

— *album*. A white-flowered variety.

Trachelospermum. (From *trachelos*, the neck, and *sperma*, a seed; the seeds are elongated at one end. Nat. ord., *Apocynaceæ*.)

Evergreen climbers, requiring greenhouse treatment. Grow in a compost of loam and peat, and propagate by cuttings in sand under a bell-glass.

T. jasminoides. White. July. China. 1846. Syn., *Rhynchospermum jasminoides*. B. M. t. 4787.

— *variegatum* and *R. varium* are forms of this.

— *angustifolium*. Leaves narrower than in the type. Syn., *Trachelospermum angustifolium*.

Trachycarpus. (From *trachys*, rough, and *karpos*, fruit; probably in allusion to the hairs upon the fruit. Nat. ord., *Palmeæ*; Tribe, *Coryphecæ*.)

Greenhouse or half-hardy palms. Allied to **CHAMÆROPS**, to which refer for cultivation.

T. excelsus. 29. Yellow, green. July. China. 1844. Syn., *T. Fortunei* and *Chamærops Fortunei*. B. M. t. 522A.

- T. Fortu'nei*. See *T. excelsus*.
 — *Griffithii*. See *T. khasyanus*.
 — *khasya'nus*. 9. Yellowish. Khasya Mountains. B. M. t. 7128. Syns., *T. Griffithii*, *T. Martianus*, *Chamaerops Griffithii* and *C. Martiana*.
 — *Martiana*. See *T. khasyanus*.

Trachylobium. (From *trachys*, rough, and *lobos*, pod. Nat. ord., *Leguminosæ*; Tribe, *Amhersticæ*.)

Stove evergreen tree. For culture, see HYMENÆA.

- T. verrucosum*. 20. White. Madagascar. 1808. Syns., *T. Martianum* and *Hymenæa verrucosa*.

Trachyme'ne. (From *trachys*, rough, and *hymen*, a membrane; channels of the fruit. Nat. ord., *Umbelliferae*; Tribe, *Hydrocotyleæ*.)

All the following are greenhouse, Australian evergreen plants, except *cærulea*. 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 fibry peat. Winter temp., 40° to 50°.

- T. cærulea*. 1½. Blue. July. 1827. Annual. Syn., *Didiscus cæruleus*. B. M. t. 2875.
 — *compre'ssa*. 1. Pale yellow. May.
 — *lamceolata*. B. M. t. 3334. See *Siebera Billardieri*, var. *lamceolata*.
 — *linearis*. 2. Yellow. July. 1824.
 — *ovata*. 1. White. May.
 — *ovata*. 1. Pale yellow. May.

Trachystemon. (From *trachys*, rough, and *stemon*, a thread; in allusion to the hairy filaments of the stamens. Nat. ord., *Boraginaceæ*; Tribe, *Borageæ*. Allied to *Anchusa*.)

Hardy herbaceous perennials. Seeds; divisions in spring. Ordinary garden-soil.

- T. creticum*. 1. Blue. May. Crete. 1823. Syn., *Borago cretica*.
 — *orientalis*. 2. Blue. Spring. Levant. 1752. Syn., *Borago orientalis*. B. M. t. 288.

Tradescantia. Spiderwort. (Named after *J. Tradescant*, gardener to Charles I. Nat. ord., *Commelinaceæ*; Tribe, *Tradescantieæ*.)

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.

HARDY ANNUALS.

- T. erecta*. Jacq. Ic. t. 354; B. M. t. 1340. See *Tinantia fugax*, var. *erecta*.
 — *latifolia*. B. C. t. 1300. See *Tinantia fugax*, var. *erecta*.
 — *undata*. B. R. t. 1403. See *Tinantia fugax*, var. *erecta*.

GREENHOUSE HERBACEOUS, ETC.

- T. crassifolia*. 3. August. Mexico. 1796. B. M. t. 1598.
 — *paniculata*. 1. August. E. Ind. 1816. Biennial.
 — *pulche'lla*. 1. July. Mexico. 1825. Evergreen.
 — *trivida*. 1. Red. September. Mexico. 1837. B. R. 1840, t. 42.

STOVE HERBACEOUS.

- T. cordifolia*. ½. June. Jamaica. 1819. Evergreen.
 — *crassula*. 1. White. July. Brazil. 1825. B. M. t. 2935.
 — *discolor*. B. M. t. 1192. See *Rhæo discolor*.
 — *divaricata*. ½. June. Brazil. 1825.
 — *divaricata*. ½. June. Trinidad. 1818.
 — *fusca* t. 3. September. S. America. 1820. B. C. t. 374. Syn., *Pyrrheima Loddigesii*.
 — *geniculata*. 1. July. W. Ind. 1783.
 — *malabarica*. 1. Purple. July. E. Ind. 1776.
 — *Martensiana*. See *Callisia Martensiana*.
 — *multiflora*. ½. June. Jamaica. 1820. Jacq. Ic. t. 355.
 — *navicularis*. Rose. Peru.
 — *procumbens*. ½. June. Trinidad. 1824. Evergreen.
 — *speciosa*. 1. July. Mexico. 1825.
 — *spicata* t. 2. Purple. Mexico. Kn. and West. t. 124.
 — *tricolor*. See *Zebrina pendula*.
 — *tuberosa*. 1½. July. E. Ind. 1817.
 — *undulata* t. 1. June. Trinidad. 1819.
 — *Warszewicziana*. 2. Purple. May. Guatemala.
 — *zanonia*. A synonym of *Campelia zanonia*.
 — *zebrina*. See *Zebrina pendula*.

HARDY HERBACEOUS.

- T. caricifolia*. 1. August. Texas. 1835. B. M. t. 3546.
 — *congesta*. 2. August. N. Amer. 1826.
 — *pilosa*. B. M. t. 3291. See *T. virginica*, var. *pilosa*.
 — *rosea*. 1. Pink. June. Carolina. 1802. B. C. t. 370.
 — *virginica*. 1½. July. N. Amer. 1629. B. M. t. 105.
 — *alba*. 1. White. July. N. Amer. 1629.
 — *cærulea alba*. 1. Blue, white. July. N. Amer. 1629.
 — *pilosa*. 1. White. July. N. Amer. 1629. B. R. t. 1055. Syn., *T. pilosa*. B. M. t. 3291.
 — *ple'na*. 1. Blue. July. N. Amer. 1629.
 — *rubra*. 1. Red. July. N. Amer. 1629.

Tragium. (Said to be derived from *tragos*, a goat; application obscure.)

- T. anisum*. A synonym of *Pimpinella anisum*. See ANISE.
 — *tauricum*. A synonym of *Scilla indica*.

Tragopogon. Goat's Beard. (From *tragos*, a goat, and *pogon*, a beard; long, silky beards of the seed. Nat. ord., *Compositæ*; Tribe, *Cichoriaceæ*.)

Hardy biennials, yellow-flowered, except where otherwise mentioned; seeds in March and August; common garden-soil. See SALSAFY.

- T. dubius*. 3. May. Podolia. 1818.
 — *floccosus*. 3. May. Hungary. 1816.
 — *glaber*. 1½. Pink. July. Italy. 1704. Syn., *Geropogon glaber*. B. M. t. 479.
 — *hirsutus*. 1½. Red. July. Italy. 1759. Syn., *Geropogon hirsutus*.
 — *major*. 6. May. Austria. 1788.
 — *minor*. 2. June. Britain.
 — *mutabilis*. 3. Pale. May. Siberia. 1816. Jacq. Ic. t. 157.
 — *orientalis*. 3. June. Levant. 1787.
 — *porrifolius*. 4. Purple. May. England. Jacq. Ic. t. 159.
 — *pusillus*. ½. June. Iberia. 1820.
 — *roseus*. 1½. Red. May. Siberia. 1826.

Tragopyrum. Goat's Wheat. (From *tragos*, a goat, and *pyros*, wheat. Nat.

ord., *Polygonaceæ*; Tribe, *Eupolygoneæ*.)
Now known as **Atraphaxis**.

Hardy deciduous shrubs. Generally by layers in spring and autumn; a moist, peaty soil suits them most.

- T. buxifolium*. 1½. White. July. Siberia. 1800. **ATRAPHAXIS BUXIFOLIUS**.
— *lanceolata* *tum*. 2. Pink. July. Siberia. 1778. **ATRAPHAXIS FRUTESCENS**.
— *latifolia*. A broad-leaved variety. Russia and Central Asia. 1891. Gf. t. 1344, figs. 1-3.
— *polyganum*. 2. Pink. July. Carolina. 1810.

Trailers. See **Creepers**.

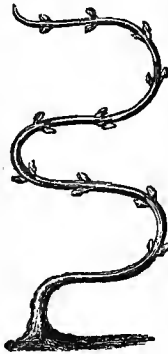
Train Oil. See **Animal Matters**.

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 development 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 line the return of the sap is checked. Shy-flowering shrubs, as *Mimus glutinosus*, var. *punicus*, are made to blossom abundantly, and freely-flowering shrubs, as *Cytisus hybridus*, 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 twenty-eight inches high, will, if the branch be bent down to a right angle, support barely twenty-three inches, and if bent a few degrees below the horizontal the column sustained will not be more than twenty-one inches.

This is the reason why, at such angles, gardeners find the trained branches of their wall-trees rendered more produc-



tive 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, as in the accompanying outline.

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 fifteen 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 fifteen inches above the first, and so on until the tree had 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.

Trama auriculae. This Aphis attacks the roots of the Auricula, and oftentimes causes serious damage to the plants. In colour the insect is greenish-white, some individuals being furnished with a woolly excretion behind (our illustration represents this form magnified), others being without it; the legs and antennae are brownish. When Auriculas are found to be attacked by the Trama, which may be known by their unhealthy appearance and the presence of white



woolly matter about the collar and roots, the infected plants should be thoroughly cleansed of the earth, and their roots, etc., well cleaned with soft soap, and then repotted in fresh soil and clean pots; the earth and pots in which they grew should be scalded to kill any insects or eggs that may remain in it. The repotted plants should be placed in a fresh place, to prevent their being again attacked by any stray Tramas that may lurk in the neighbourhood where the infected plants stood.

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 *rational* 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 *Coniferae*, 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*, *Laurestinus*, *Alaternus*, *Phillyreas*, and *Tree Box* will transplant as well in May and June as at any other time of the year—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 *calceitrapa*, an ancient instrument in warfare with four spikes; fruit armed with spikes, or horns. Nat. ord., *Onagrarieae*.)

Aquatics. Seeds; good loam, in a tub or pond of water; *T. na'tans* will do in the latter; the others require the shelter of a greenhouse.

T. bico'rnis. White. July. China. 1790. Greenhouse perennial.

—*bispino'sa*. White. July. E. Ind. 1822. Greenhouse biennial.

—*na'tans*. White, purple. July. Europe. 1781. Hardy annual.

—*quadrispino'sa*. White. July. E. Ind. 1823. Greenhouse biennial.

—*verbanensis*. Lake Maggiore. 1886. Hardy.

Trautvette'ria. (After Ernest R. Trautvetter, a Russian botanist. Nat. ord., *Ranunculaceae*; Tribe, *Ranunculaceae*.)

Hardy perennial. Divisions. Ordinary garden-soil.

T. palma'ta. 2-3. White. July. North America and Japan. 1812. Syn., *Actaea palmata*.

This is the correct name for the plant described on p. 222 as *Cimicifuga palmata*.

Travellers' Joy. *Cle'matis vitalba*.

Travellers' Tree. *Ravenna'la madagascariensis*.

Treasure Flower. *Gaza'nia*.

Trecu'lia. (Named in honour of M. Auguste Trécul, a botanist. Nat. ord., *Urticaceae*; Tribe, *Artocarpeae*. Allied to *Artocarpus*.)

Stove evergreen tree. Cuttings of the ripened shoots in sandy loam, in bottom heat and under a bell-glass. Rich loam and leaf-mould. Summer temp., 65° to 85°; winter, 60° to 70°. Moist atmosphere.

T. africa'na. Greenish. W. Tropical Africa. 1872. B. M. t. 5986.

Tree Carrot. *Monizia c'dulis.*

Tree Celandine. *Bocc'onia frute'-scens.*

Tree Guards. The following are cheap and effectual:—Stakes about the thickness of the wrist, seven feet in length, and tolerably straight, each chopped 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 six 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, six feet in length, or more if requisite, and about two 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 two 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 two-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 the 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 seringa; 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 ash-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 tinged with yellow, as the ash-leaved maple and the Chinese arbor vitæ. The variegated plants, also, are generally 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 an attention must be constantly kept up to their forms, 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.*

Tree of Life. *Thu'ya.*

Tree of Sadness. *Nycta'nthes arbor tri'stis.*

Tree or Canada Onion. (*Allium 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-sets, 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 twelve inches asunder, in holes six inches apart and two 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.

Trefoil. *Trifo'lium.*

Trefoil, Bird's-foot. *Lo'tus cornicula'tus.*

Trefoil, Golden. *Anemo'ne Hepa'tica.*

Trefoil, Milk. *Cy'tisus.*

Trefoil, Moon. *Medica'go arbo'rea.*

Trefoil, Scented. *Melilotus*.

Trefoil, Shrubby. *Jasminum fruticosum* and *Ptelea trifoliata*.

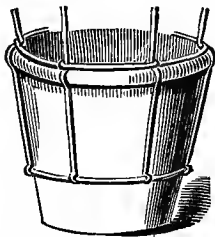
Trellis, or Treillage, is an arrangement of supporters upon which to train plants.

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 five to six or seven 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 an inch and a half 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 eighteen 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 recent years.

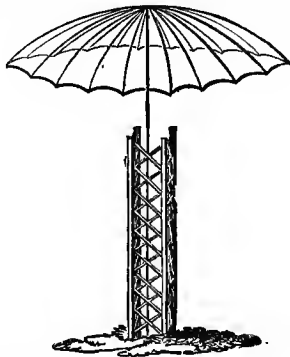
Their forms are now various and elegant; but we shall here only explain the manner in which the wire trellis for climbing plants is attached to the pots. It will be seen that a strong wire ring is



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 as in the drawing, 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 *Wistaria sine'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.

Trema'ndra. (From *tremo*, to tremble, and *andros*, a male; the anthers vibrate with the least movement of the air. Nat. ord., *Trema'draea*.)

Small greenhouse shrubs from Australia, with purplish flowers. For cultivation, see TETRA-
THECA.

T. hirsuta. 1.

— *stelligera*. 1½.

— *verticillata*. See *Platytheca galioides*.

Trembling American Tree.
Populus tremula.

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 twenty 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 two feet and a half 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, etc., 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 two or three 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.

Trevesia. (After the *Treves de Bonfigli* of Padua, patrons of Botany. Nat. ord., *Araliaceæ*.)

Stove shrubs, or small trees with large leaves. Compost of sand, loam, and leaf-mould. Cuttings.

T. e'minens. Phillipine Islands. 1882.
— *palmeta.* 10. Greenish-white. March. India. 1818. Syns., *T. sundaica*, *Gastonia palmata*, B. R. t. 894, and *Gilbertia palmata*.
— *sunda'ica.* See *T. palmata*.

Trevira'na. (In honour of *Ludolph Christ. Treviranus*, professor of Botany at Rostock, 1812, and Breslau, 1816. Nat. ord., *Gesneraceæ*; Tribe, *Gesneræ*.) A synonym of **Achimenes**.

T. ca'ndida. Fl. Ser. t. 420. See *Achimenes candida*.
— *cocci'nea.* See *Achimenes coccinea*.
— *longifl'ora.* See *Achimenes longiflora*.
— *pulche'lla.* See *Achimenes coccinea*.

Trevo'a. (In honour of *Trevo*, a Spanish botanist. Nat. ord., *Rhamnææ*.) Greenhouse tree, rarely seen in cultivation.
T. trine'rvia. South America.

Tre'wia. (In honour of *C. J. Trew*, 1695-1769, author of a volume of illustrations of garden plants. Nat. ord., *Euphorbiaceæ*.)

Stove tree. Compost of sandy loam and peat. Cuttings, in sand, in heat, under a bell-glass.
T. nudifl'ora. 8. Greenish. May. East Indies. 1796.

Tria'nea. (Named in honour of *M. José Triana*, a botanist and traveller in Columbia. Nat. ord., *Hydrocharidaceæ*. Allied to *Hydrocharis*.)

Stove or greenhouse floating aquatic. See **AQUARIUM**.
T. bogote'nsis. Columbia. 1879. G. C. 1881, xv. p. 466; Gf. t. 980.

Tri'as. (From *treis*, three; in reference to the arrangement of the perianth segments. Nat. ord., *Orchidææ*; Tribe, *Epidendreaæ—Dendrobieæ*.)

Dwarf stove orchids. See **ORCHIDS**.
T. obso'nga. †. Greenish-brown; lip purplish. April. Moulmein. 1837.
— *pi'cta.* Honey-colour, spotted with reddish-purple. G. C. 1888, iii. p. 488.

Tibra'chia. (From *treis*, three, and *brachys*, short. Nat. ord., *Orchidææ*; Tribe, *Epidendreaæ—Dendrobieæ*.) A synonym of **Bulbophyllum**.

T. pe'n'dula. B. R. t. 963. See *Bulbophyllum recurvum*.

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., *Zygophyllaceæ*.)

All yellow-flowered, and annuals, except *cistoïdes*. 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 *cistoïdes*, which is easily increased by cuttings in the spring.

T. cistoïdes. 1‡. July. S. Amer. 1752. Stove evergreen. Jacq. H. Schoenh. t. 103; B. R. t. 791.

- T. ma'zimus*. 1½. June. Jamaica. 1728. Jacq. Ic. t. 462.
 — *terre'stris*. 1. June. South Europe. 1596. Sibth. Fl. Gr. t. 372.
 — *trijuga tus*. ½. June. Georgia. 1819.

Tricha'ntha. (From *thrix*, a hair, and *anthe*, a blossom. Nat. ord., *Gesneraceæ*; Tribe, *Cytandreae*.)

Stove trailer. For cultivation, see ΝΙΡΗΛΑ.

- T. mi'nor*. Yellow, purple, scarlet. Columbia. 1864. B. M. t. 5428.

Trichi'lia. (From *tricha*, in threes, or ternary; the parts of the seed-pods in threes. Nat. ord., *Meliaceæ*; Tribe, *Trichiliææ*.)

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; fibry loam and sandy peat. Winter temp., 55° to 60°; summer, 60° to 80°.

- T. gla'bra*. See *T. havanensis*.
— glandulo'sa. 20. July. N. Holland. 1821.
— havanensis. 30. June. Havannah. 1794. Syn., *T. glabra*.
— hi'rta. 12. June. West Indies. 1800. Bastard Iron-wood.
— odora'ta. 20. Yellowish. June. West Indies. 1801. Andr. Rep. t. 637.
— spondio'des. 15. White. Tropical America. 1870. Jacq. H. Schoenb. t. 102.
— termina'lis. 20. Jamaica. 1825.
— trifolia'ta. 8. S. America. 1828.

Trichi'nium. (From *trichinos*, hairy; flowers covered with knotted hairs. Nat. ord., *Amarantaceæ*; Tribe, *Amarantææ*.)

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. alopecuroï'deum*. 1. Yellow, red. June. 1838. B. R. 1839, t. 28.
 — *Mangle'sii*. White, pink. June. 1838.
 — *Stirling'ngii*. White, pink. June. 1838.

Trichoca'rpa. (From *thrix*, a hair, and *carpos*, fruit; the fructification is elevated on a short hair. Nat. ord., *Filices* — *Polypodiaceæ*.)

Stove fern. See FERNS.

- T. Moo'rei*. 1½. New Caledonia.

Trichocau'lon. (From *thrix*, a hair, and *caulon*, a stem; referring to the tufts of hair on the stem. Nat. ord., *Asclepiadaceæ*; Tribe, *Stapelieæ*.)

Dwarf succulent plant. For culture, see STAPELIA.

- T. piliferum*. Yellowish-red outside; dark purple inside. South Africa. 1882. B. M. t. 6759. Syns., *Piранthus piliferus* and *Stapelia pilifera*.

Tricho'e'ntrum. (From *thrix*, a hair, and *centron*, a spur; application not obvious. Nat. ord., *Orchideæ*; Tribe, *Vandææ-Oncidieæ*.)

Stove orchids, grown on blocks. See ORCHIDS.

- T. albo-purpu'reum*. Cinnamon, white, purple. Rio Negro. 1866. B. M. t. 5688.
 — — *striatum*. Lip blotched at the base, and striped at the apex with purple. 1887. Lind. t. 85.

- T. ca'ndidum*. White, yellow. May. Guatemala. 1840.

- *capistra'tum*. Yellow, white, purple. Costa Rica. 1871.
 — *cornuco'pizæ*. Greenish-white. S. America. 1866. Ref. Bot. t. 77.
 — *fr'scum*. ½. Green, white. July. Mexico. 1835. B. R. t. 1951.
 — — *Kramé'ri*. A variety with large flowers. Brazil. 1885.
 — *Hoë'gei*. Greenish-yellow, purple. Mexico. 1882.
 — *ionophta'lmum*. Yellowish, brown, whitish, violet. Amazons. 1876.
 — *iridifo'lium*. Yellow. September. Demerara. 1830.
 — *macula'tum*. White, purple. February. New Grenada.
 — *orthoplé'ctron*. Cinnamon-brown, yellow, white, crimson. October. Brazil. Warn. Orch. Alb. t. 272.
 — *Pfa'nei*. Brown, white, red. Central America. 1881. G. C. 1881, xvi. p. 70; Gf. t. 1103.
 — — *zonal'e*. A variety with a greater proportion of brown. 1883.
 — *porphy'rio*. Brown, yellow, magenta. South America. 1884. Ill. Hort. 1884, t. 508.
 — *pu'chrum*. Yellow, white. July. Peru.
 — *purpu'reum*. Olive-green; lip purple. Demerara.
 — *rectu'rum*. White, purple. May. Guiana. 1842.
 — *tenuifo'rum*. Brown, white. January. Bahia. 1881. G. C. 1881, xvi. p. 70; Gf. t. 1103.
 — *tigrinum*. Greenish, brown, purple, white, orange. Ecuador? 1869. Ill. Hort. new ser., t. 282.
 — — *splendens*. Base of lip rich purple. Lind. t. 24.
 — *trique'trum*. ½. Straw-colour, orange. Peru. 1891. G. C. 1891, ix., p. 701.

Tricho'ceros. (From *thrix*, a hair, and *keras*, a horn; in allusion to the two hairy antenna-like processes from the column. Nat. ord., *Orchideæ*; Tribe, *Vandææ-Notylieæ*.)

Stove epiphytal orchid. Should be grown upon blocks. See ORCHID.

- T. parvifo'rus*. Green, purple, brown. Columbia. 1870.

Trichode'sma. (From *thrix*, a hair, and *desmos*, a bond; anthers bound together by hairs. Nat. ord., *Boraginaceæ*; Tribe, *Borageæ*.)

Stove annuals. Sow in a hotbed early in spring; plant out the seedlings in a sheltered, warm border early in June.

- T. a'niceps*. 2. Tropical America.
 — *Banero'ftii*. ½. Jamaica.
 — *Boje'ri*. Mauritius.
 — *zeylanicum*. 4. Blue. August. Ceylon and W. Australia. 1855. B. M. t. 4280. Syn., *Borago zeylanica*.

Trichoglo'ttis. (From *thrix*, a hair, and *glottis*, a tongue. Nat. ord., *Orchideæ*; Tribe, *Vandææ-Sarcantheæ*.)

Stove orchids. See ORCHIDS.

- T. cochlea'ris*. ¾. White, purple. Sumatra. 1883.
 — *fascia'ta*. Warn. Orch. Alb. t. 208. See *Stauropsis fasciata*.
 — *pa'llens*. Green. Manilla.

Tricho'manes. (From *thrix*, a hair, and *manos*, soft; the shining stems appear like fine hair. Nat. ord., *Filices*.)

Stove, filmy ferns. See FERNs. The sporangia are borne on a hair-like receptacle, around which the apex of a segment of the frond forms a cup-shaped indusium.

- T. achilleefolium*. Isle of Luzon.
- aculeatum. May. Isle of Luzon.
- alatum. June. W. Ind. 1824. Hook. Ic. Fil. i. t. 11.
- a-nceps. W. Indies. 1863.
- angustatum. May. Isle of Luzon.
- auriculatum. $\frac{1}{2}$. Java. 1871.
- brevisum. $\frac{3}{4}$. May. Britain. Hardy.
- crispum. May. W. Ind. 1828. Hook. Ic. Fil. i. t. 12.
- pilosum. Fronds clothed with reddish hairs. S. America. 1863.
- curvatum. April. Isle of Luzon.
- dissectum. April. Isle of Luzon.
- filicula. $\frac{1}{2}$. Mauritius.
- fimbriatum. W. Indies. 1862.
- foribundum. May. W. Ind. 1825. Hook. Ic. Fil. i. t. 9.
- fulvo-glaucescens. May. Isle of Luzon.
- gemmatum. April. Malacca.
- Hartii. Sierra Leone. 1882.
- humile. May. Isle of Luzon. Hook. Ic. Fil. i. t. 85.
- javanicum. May. Java. Hook. Ic. Fil. ii. t. 240.
- Kalbreyeri. $\frac{1}{2}$. New Grenada. 1881.
- Kaulfussii. 1. W. Indies.
- Kraussii. $\frac{1}{2}$. Dominica.
- labiatum. British Guiana. 1885.
- Luschathia-num. Brazil.
- mesophyllum. April. Isle of Luzon.
- membranaceum. $\frac{1}{2}$. May. W. Ind. 1820. Hook. Fil. Ex. t. 76.
- millosum. Brazil.
- muscoides. $\frac{1}{2}$. W. Indies. Hook. Ic. Fl. ii. t. 179.
- obscurum. April. Isle of Luzon.
- parvum. April. Isle of Luzon. Hook. Sp. Fil. t. 39.
- Petersii. N. America. 1875. Ic. Pl. t. 986.
- pinnatifidum. British Guiana. 1886.
- punctatum. W. Indies. Hook. Ic. Fil. ii. t. 236.
- pyxidiferum. W. Indies. Hook. Ic. Fil. ii. t. 206.
- quercifolium. April. Jamaica. 1844. Hook. Ic. Fil. i. t. 115.
- radicans. April. Hook. Ic. Fil. ii. t. 218.
- rufiforme. $\frac{1}{2}$. New Zealand. Hook. Ic. Fil. i. t. 32.
- rhomboidum. May. Isle of Luzon.
- saxatile. Borneo. 1862.
- scandens. $\frac{1}{2}$. Jamaica.
- setigerum. Borneo. 1862.
- sinuosum. $\frac{1}{2}$. W. Indies. Hook. Ic. Fil. i. t. 13.
- spicatum. May. Jamaica. 1844.
- superbum. Borneo. 1862.
- thuyoides. $\frac{3}{4}$. Mauritius.
- trichoidum. $\frac{1}{2}$. Jamaica. Hook. Ic. Fil. ii. t. 199.
- trichophyllum. Borneo. 1862.
- venosum. $\frac{1}{2}$. New S. Wales. Hook. Ic. Fil. i. t. 78.

Trichone-ma. (From *thrix*, a hair, and *nema*, a filament; stamens clothed with minute hairs. Nat. ord., *Iridææ*; Tribe, *Iaxiææ*.) See *Romulea*.

Half-hardy bulbs, which require the same treatment as *Ixias*. All, except *T. Colvinnææ*, from South Africa.

- T. caule-scens*. B. M. t. 1892. See *Romulea bulbocodioides*.
- Colvinnææ. See *Romulea Colvinnææ*.
- cruciata. B. M. t. 575. See *Romulea cruciata*.

- T. pudicum*. B. M. t. 1244. See *Romulea pudica*.
- pylium. B. R. 1847, t. 40. A form of *Romulea Bulbocodium*.
- ramiiflorum. See *Romulea ramiiflora*.
- roseum. B. M. t. 1225. See *Romulea rosea*.
- speciosum. B. M. t. 1476. See *Romulea speciosa*.
- subpalustre. B. R. 1847, t. 40. A form of *Romulea Bulbocodium*.

Trichopetalum. (From *thrix*, a hair, and *petalum*, a petal; flowers fringed inside. Nat. ord., *Liliacææ*; Tribe, *Asphodeleææ*.)

Half-hardy herbaceous perennials, from Chili. Division in spring; rich, sandy loam and a little peat. Winter temp., 38° to 45°.

- T. gracile*. 3. Greenish. July. 1828. B. R. t. 1535.
- stellatum. 1. White. April. 1829.

Trichopilia. (From *thrix*, a hair, and *pilon*, a cap; summit of the column with tufts of hair. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidieææ*. Allied to *Aspasia*.)

Stove orchids, grown in baskets. See ORCHIDS.

- T. albidia*. White, yellow. Caraccas. 1851.
- Backhousiana. Columbia.
- coccinea. See *T. marginata*.
- flavola. See *T. marginata*, var. *flavola*.
- crispata. Crimson-purple. Columbia. 1857.
- marginata. Wine-red, margins white; lip crimson. Central America. 1862. Fl. Ser. tt. 1925-6.
- fragrans. White, yellow. Columbia. 1858. Syn., *Pilumna fragrans*. B. M. t. 5035.
- nobilis. White, yellow. Venezuela. 1872. Syn., *Pilumna nobilis*. Warn. Orch. Alb. t. 128.
- Galeottiana. Yellow, brown, white, purple. Mexico. 1860. Syns., *T. picta*, Ill. Hort. t. 225, and *T. turrialve*, H. M. t. 5550.
- grata. Yellowish-green, white, yellow. Peru. 1868. Sweet-scented.
- hymenantha. White, red. Columbia. 1854. B. M. t. 5949.
- Kienastiana. White, yellow. 1883.
- laza. Pale green, tinged with purple; lip cream-colour. October. Popayan. 1844. Syn., *Pilumna laza*, B. R. 1846, t. 57.
- flavola. Yellowish-white. 1884.
- Lehmanni. White, yellow. 1888. Gf. t. 1276, fig. 2.
- lepidota. Wine-red, white. Costa Rica. 1873. Warn. Orch. Alb. t. 197.
- marginata. Brownish-red, greenish-yellow; lip white, purple, crimson. May. Central America. 1849. Syn., *T. coccinea*. B. M. t. 4857.
- flavola. Greenish-yellow; lip white. 1880. Syn., *T. coccinea*, var. *flavola*.
- mutica. White, tinged with red. 1821. Trinidad. 1821. Syn., *Macradenia mutica*.
- nobilis. See *T. fragrans*, var. *nobilis*.
- picta. See *T. Galeottiana*.
- punctata. Sepals and petals spotted with reddish-purple. G. C. 1890, vii. p. 227.
- rostrata. $\frac{1}{2}$. White, orange. Columbia. 1866.
- sanguinolenta. Yellowish-olive, brownish-crimson; lip white, veined with crimson. Ecuador. 1843. Syn., *Helcia sanguinolenta*. Paxt. Fl. Gard. ser. 2, t. 182.
- sua-vis. White, purple. April. Central America. 1852. B. M. t. 4654.
- alba. White, yellow. May. 1882.
- grandiflora. White, crimson, orange.
- Lama'rchaæ. White, rose. Costa Rica. 1874.

- T. sua'vis splendens*. White, purple, carmine, yellow. Costa Rica. 1868.
 — *torrilis*. 3. White, red. January. Mexico. 1835. B. M. t. 3739.
 — — *pa'lida*. White. January. Guatemala. 1844.
 — *turia'vae*. See *T. Galeottiana*.

Trichosa'cme. (From *thrix*, a hair, and *acme*, a point; referring to the corolla's hairy appendage. Nat. ord., *Asclepiadaceæ*; Tribe, *Gonolobæ*.)

Stove climber. All parts of the plant, except the corolla, are covered with a woolly felt. For cultivation, see STAPELIA.

- T. lana'ta*. Purple. Mexico. 1850. Paxt. Fl. Gard. i. p. 105, fig. 71.

Trichosa'nthes. Snake Gourd. (From *thrix*, a hair, and *anthos*, a flower; flowers fringed. Nat. ord., *Cucurbitaceæ*; Tribe, *Cucumerineæ*.)

Stove, white-flowered annuals. Seeds in a sweet hobbed in March, potted and grown in a plant-stove; sandy loam, leaf-mould, and fibry peat. The great length of the cucumber-like seed-vessel is interesting.

- T. angui'na*. 4. May. China. 1735. B. M. t. 722. Syn., *T. colubrina*.
 — *colubri'na*. B. R. 1846, t. 18. See *T. anguina*.
 — *faetidissima*. Jacq. Ic. t. 624. See *Rhynchoscarpa foetida*.
 — *japo'nica*. Greenish-white. Japan. 1872. Gf. t. 714.
 — *Kiril'owi*. See *T. vitifolia*.
 — *palma'ta*. July. E. Ind. 1825. B. M. t. 6873.
 — *vitifolia*. White; fruit large, orange-red. China. 1872. Syns., *T. Kirilowi* and *Eopepon vitifolius*.

Tricho'sma. Hair Orchis. (From *thrix*, a hair, and *kosmos*, ornament. Nat. ord., *Orchideæ*; Tribe, *Epidendrea-Cælogyneæ*.)

Stove orchid, grown in a basket. See ORCHIDS.
T. sua'vis. 1. White, yellow. June. Northern India. 1840. B. R. 1842, t. 21.

Trichoste'ma. (From *thrix*, a hair, and *stema*, a stamen; the filaments are slender. Nat. ord., *Labiataæ*.)

Hardy sub-shrub, requiring the same culture as SALVIA.

- T. Par'shii*. 1½. Bluish-purple. South California. 1882.

Trico'ryne. (From *treis*, three, and *koryne*, a club; form of the seed-pod. Nat. ord., *Liliaceæ*; Tribe, *Johnsoniæ*.)

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*. 2. June. 1824.
 — *scabra*. 1. 1826.
 — *simplex*. 1. July. 1823. Biennial.

Trichoto'sia. See **Eria**.

Tricra'tus admira'bilis is a synonym of **Abronia umbellata**.

Tricuspidaria. (From *tricuspis*, three pointed; in allusion to the three-

toothed petals. Nat. ord., *Liliaceæ*; Tribe, *Sloaneæ*. Allied to *Aristolelia*.)

A very beautiful greenhouse shrub. We know nothing of its cultivation, but it will probably be found to thrive if treated in the same way as SPARMANNIA.

- T. hexape'tala*. Scarlet. Chili. 1880. Syn., *Crinodendron Hookerianum*.

Tricyrtis. (From *treis*, three, and *kyrtos*, convex; alluding to the three outer sepals having bags at their bases. Nat. ord., *Liliaceæ*; Tribe, *Uvulariæ*.)

Half-hardy bulb. Greenhouse or cold pit in winter. Offsets. Sandy loam and peat.

- T. elegans*. 1½. White, purple. China. 1860.
 — *hirta*. 4. White, purple. Japan. 1863. B. M. t. 5355.
 — *macro'poda*. Greenish-yellow, purple-dotted. Japan. 1869. B. M. t. 6544.
 — — *striata*. Leaves striped with white. Syn., *T. foliis albo-striatis*. Fl. Ser. t. 1820.
 — *pilo'sa*. 1. Green, red. Sikkim. 1851. B. M. t. 4955.

Tri'dax. (From *treis*, three, and *akis*, a point; the ray florets are three lobed. Nat. ord., *Compositæ*.)

Hardy, perennial herbs. Propagated by divisions or seeds.

- T. bi'color*, var. *rosea*. Rosy-lilac, yellow. Mexico. 1887.
 — *coronopifolium*. 1. Yellow. June. Mexico. Syn., *Ptilostephium coronopifolium*.
 — *triloba'tum*. 1. Yellow. June. Mexico. Syn., *Galinisoga trilobata*. B. M. t. 1895.

Trienta'lis. Wintergreen. (From *treis*, one-third; low growth. Nat. ord., *Primulaceæ*; Tribe, *Lysimachiæ*.)

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. america'na*. ½. July. N. America. 1816.
 — *europæ'a*. 1½. May. Britain. Eng. Bot. ed. 3, t. 1139.

Trifo'lium. Trefoil. (From *tres*, three, and *folium*, a leaf; three-leaved. Nat. ord., *Leguminosæ*; Tribe, *Trifoliceæ*.)

Seeds in the open ground, and divisions of the herbaceous perennials; light, rich loam.

HARDY HERBACEOUS.

- T. ala'tum*. ½. Flesh. June. South Europe. 1820.
 — *alpi'num*. ½. Purple. July. Europe. 1775.
 — *armeni'acum*. 1. Red. July. Armenia. 1830.
 — *arme'nium*. 1. Cream. August. Armenia. 1820.
 — *ba'dium*. ½. Yellow. July. Pyrenees.
 — *caespito'sum*. ½. Purple. July. Switzerland. 1815.
 — *cane'scens*. Cream-coloured. May. Cappadocia. 1803. B. M. t. 1168.
 — *como'sum*. ½. White. June. America. 1798.
 — *Cusso'nii*. 1. Blue. July. Sicily. 1826.
 — *e'legans*. ½. Pale red. July. Europe. 1823.
 — *exi'mium*. ½. Purple. June. Dahuria. 1820.
 — — *albiflorum*. ½. White. June. Altai.
 — *Lati'num*. 1. White, red. June. Italy.

- T. Lupinaster*. 1 $\frac{1}{2}$. Purple. July. Siberia. 1741. B. M. t. 879. Syn., *Lupinaster pentaphyllus*.
 — *albiflorum*. White. July. Siberia. 1818.
 — *purpureascens*. Purple. Syn., *Lupinaster oblongifolius*.
 — *medium*. 2. Purple. June. England.
 — *noëicum*. 1. Cream. July. Carinthia. 1821.
 — *ochroleucum*. 1. Sulphur. May. England.
 — *pannonicum*. 1. White, yellow. June. Hungary. 1752.
 — *pennsylvanicum*. 1. Red. July. N. Amer. 1811.
 — *physodes*. $\frac{1}{2}$. Reddish. June. Hungary. 1805.
 — *pratense*. 2. Purple. July. Britain.
 — *purpureascens*. 1. Purple. June. Siberia. 1816.
 — *repens*. 1 $\frac{1}{2}$. White. July. Britain.
 — *pentaphyllum*. $\frac{1}{2}$. White. June. Britain.
 — *rubens*. 1 $\frac{1}{2}$. Dark red. South Europe. 1633.
 — *rupestre*. 1. White. June. Naples. 1820.
 — *trichoccephalum*. 1. Cream. June. Caucasus. 1827.
 — *uniflorum*. $\frac{1}{2}$. Blue. June. Italy. 1800. Sibth. Fl. Gr. t. 752; B. C. t. 1882.
 — *Sternbergianum*. $\frac{1}{2}$. White. June. South Europe. 1822.
 — *vaginalium*. 1. Pale yellow. Switzerland. 1819.
- HARDY ANNUALS.
- T. Bocconi*. $\frac{1}{2}$. Pale purple. June. Spain. 1820.
 — *bracteatum*. 1. Purple. June. Morocco. 1804. Biennial.
 — *cernuum*. 1. Pale purple. June. Spain. 1820.
 — *cinctum*. 1. Pale yellow. June. 1820.
 — *congestum*. $\frac{1}{2}$. White, red. June. South Europe. 1820.
 — *constantinopolitanum*. $\frac{1}{2}$. Yellow. June. Turkey. 1820.
 — *erindaceum*. $\frac{1}{2}$. Pale red. June. Iberia. 1818.
 — *fimbriatum*. Purple. September. North America. 1825. B. R. t. 1070.
 — *fulcatum*. 1. Yellow. June. California. 1834. B. R. t. 1883.
 — *gemellum*. $\frac{1}{2}$. Yellow. June. Spain. 1818.
 — *globosum*. 1. Purple. July. Levant. 1713. Sibth. Fl. Gr. t. 744.
 — *hirtum*. 1. Purple. July. Barbary. 1817.
 — *picatum*. 1. Purple. July. 1800.
 — *incarnatum*. 1. Flesh. July. Italy. 1596. B. M. t. 328.
 — *Molinearii*. 1. White, red. July. South Europe. 1820.
 — *intermedium*. 1. White. June. Italy. 1820.
 — *Kitaibelianum*. 1. Pale purple. July. Hungary. 1818.
 — *lagopus*. 1. Red. July. Spain. 1827.
 — *lappaceum*. $\frac{1}{2}$. Pale red. July. Montpellier. 1787.
 — *ligusticum*. $\frac{1}{2}$. White, red. June. Spain. 1816.
 — *malacanthum*. 1. Purple. July. 1824.
 — *maritimum*. $\frac{1}{2}$. Pale purple. June. Britain.
 — *montanum*. 1. White. July. Europe. 1786.
 — *obscurum*. $\frac{1}{2}$. Purple. June. Italy. 1824.
 — *palidum*. 1. White. June. Hungary. 1803.
 — *pariense*. $\frac{1}{2}$. Yellow. June. France.
 — *parviflorum*. $\frac{1}{2}$. White. June. Hungary. 1820.
 — *procrumbens*. 1. Yellow. June. Britain. Hop Trefoil.
- T. purpureum*. 1. Purple. June. France. 1816.
 — *rescens*. 1. Purple. July. Virginia. 1794. B. M. t. 3471.
 — *saxatile*. $\frac{1}{2}$. Pale white. June. Switzerland. 1818. Biennial.
 — *speciosum*. 1. Yellow. June. Candia. 1762. Sibth. Fl. Gr. t. 764.
 — *sphaerocephalon*. $\frac{1}{2}$. White. June. N. Africa. 1820.
 — *squarrosum*. $\frac{1}{2}$. Pale purple. July. Spain. 1640.
 — *flavicans*. 1 $\frac{1}{2}$. Pale yellow. July. Pisania. 1817.
 — *strictum*. 1. White. July. South Europe. 1805.
 — *suaveolens*. $\frac{1}{2}$. Purplish. July. Italy. 1820.
 — *supinum*. $\frac{1}{2}$. Pale purple. June. South Europe. 1816.
 — *tenuiflorum*. $\frac{1}{2}$. Pale red. July. Italy. 1823.
 — *tenuifolium*. $\frac{1}{2}$. June. Italy. 1826.
 — *tomentosum*. $\frac{1}{2}$. Purple. June. South Europe. 1640.
- Trifu'rcia.** (From *treis*, three, and *furca*, a fork; the style is three-forked. Nat. ord., *Iridaceæ*.) A synonym of **Herbertia**.
T. cœrulea. See *Herbertia cœrulea*.
T. pulchella. See *Herbertia pulchella*.
- Trigo'chin.** Arrow Grass. (From *treis*, three, and *glochis*, a point; referring to the angles of the carpels. Nat. ord., *Naiadaceæ*.)
 Greenhouse, marsh herb.
T. Barrelieri. See *T. bulbosum*.
T. bulbosum. 1. Purplish. October. South Europe. 1806. B. M. t. 1445. Syn., *T. Barrelieri*.
- Trigo'ssum.** (From *treis*, three, and *glossa*, a tongue. Nat. ord., *Gramineæ*.) A synonym of **Arundinaria**.
- Trigone'lla.** Fenugreek. (From *treis*, three, and *gonu*, an angle; the flower has a somewhat triangular appearance. Nat. ord., *Leguminosæ*; Tribe, *Trifolieæ*.)
 Hardy, herbaceous annuals, except *T. ruthenica*, which is a perennial. Seeds. Ordinary garden-soil.
T. cœrulea. 1-2. White, blue. July. Switzerland. 1562. Syn., *Trifolium cœruleum*. B. M. t. 2283.
 — *Fœnum-Græcum*. 1-2. White. Summer. South Europe. Sibth. Fl. Gr. t. 766.
 — *ruthenica*. 1 $\frac{1}{2}$. Yellow. June. Siberia. 1759. B. C. t. 1391.
- Trigo'nia.** (From *treis*, three, and *gonu*, an angle; the fruit three-angled. Nat. ord., *Vochysiaceæ*.)
 Stove evergreens. Cuttings of half-ripened shoots in sand, under a bell-glass, in heat; sandy, fibry loam, and a little rough peat and leaf-mould. Winter temp., 55° to 65°; summer, 80° to 85°.
T. lœvis. White. June. Guiana. 1828.
 — *violæsa*. Yellow, red. Cayenne. 1820.
- Trigoni'dium.** (From *trigona*, a triangle, and *eidōs*, like; resemblance of

several parts of the plant. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidiææ*.)

Stove orchids, from Demerara, grown in pots. See ORCHIDS.

- T. acuminatum*. 1. Straw-coloured. 1834.
— *acutum*. Chocolate.
— *Egertonianum*. 1½. Pale brown. Year.
— *monophyllum*. See *Lælia monophylla*.
— *obtusum*. 1. Orange, brown. June. 1834.
B. R. t. 1923.
— *ringens*. Yellow, green. Mexico. 1839.
Now known as MORMOLYCE LINEOLATA.
— *tenuis*. Brown, purple. May. 1836.

Tril'isia. (From *trilix*, triple; referring to the divisions of the pappus. Nat. ord., *Compositæ*; Tribe, *Eupatoriaceæ*.)

Hardy, perennial herbs. Light soil. Divisions in spring, or seeds in autumn.

- T. odoratissima*. 4. Bright purple. September. North America. 1786. Syn., *Liatrix odoratissima*, Andr. Rep. t. 633. The bristled leaves have the odour of vanilla, hence the name, Vanilla Plant.
— *paniculata*. 3. Purple. August. Carolina. 1824. Syn., *Liatrix paniculata*.

Tril'lium. (From *trilix*, triple; the parts of the flower in threes. Nat. ord., *Liliacææ*; Tribe, *Medeolææ*. 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. Catesbæi*. ½. Red. May. 1820.
— *cerneum*. 1½. White. April. 1758. B. M. t. 954.
— *discolor*. ½-1. Dark-purple to green. February. 1831. B. M. t. 3097.
— *erectum*. 1. Dark purple. May. 1759. B. M. t. 470. Syn., *T. fœtidum*.
— *album*. ½. White. April. 1700. B. M. t. 1027.
— *ochroleucum*. Yellowish-white. Syn., *T. erectum*, var. *viridiflorum*. B. M. t. 3250.
— *erythrocarpum*. ½. Red, white. May. 1811. B. M. t. 3002. See also *T. grandiflorum*.
— *fœtidum*. See *T. erectum*.
— *grandiflorum*. ½. White. July. 1799. Syn., *T. erythrocarpum* of B. M. t. 855.
— *nerosum*. ½. Red. April. 1820.
— *nivalis*. ½. White. Summer. N. United States. 1879. B. M. t. 6449.
— *obovatum*. ½. Red. April. 1810.
— *petiolatum*. ½. Brown. April. 1811.
— *puberulum*. ½. Red. May. 1812.
— *sessile*. ½-1. Dark purple. March. 1759. B. M. t. 40.
— *californicum*. A robust variety. Gard. and For. 1890, p. 321, fig. 44.
— *stylisum*. ½. Red. April. 1823.
— *undulatum*. ½. Red. April. 1818.

Trime'zia. (From *treis*, three, and *merizo*, to divide; in allusion to the parts of the flower being in threes. Nat. ord., *Iridææ*; Tribe, *Moræææ*.)

Stove bulbous plant. For culture, see IRIS.

- T. l'urida*. 1. Yellow. April. West Indies. Syns., *T. martinicensis*, *Cipura martinicensis*, *Iris martinicensis*, B. M. t. 416, *Lansbergia caracasana*, and *L. martinicensis*.

Triole'na. (From *treis*, three, and

olene, the arm; in allusion to the three processes from the base of the anther. Nat. ord., *Melastomacææ*; Tribe, *Sone-rileææ*. Allied to *Monolena*.)

Stove perennial herb, with the habit of BERTOLONIA. Seeds; cuttings in sandy loam, in bottom heat and under a bell-glass. Rich sandy loam and leaf-mould; moist atmosphere. Summer temp., 65° to 80°; winter, 60° to 70°.
T. scorpioides. ½. Rose. Chiapas. 1859.

Trio'pterys. (From *treis*, three, and *pteron*, a wing; carpels, or divisions of seed-vessel, three-winged. Nat. ord., *Malpighiacææ*; Tribe, *Hiræææ*.)

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 fibry peat. Winter temp., 48° to 58°; summer, 60° to 85°.

- T. jamaicensis*. 10. Yellow. Jamaica. 1822.
— *lucida*. Pink. May. Cuba. 1822.
— *sericea*. 6. Yellow. S. Amer. 1823.

Trio'steum. Feverwort. (From *treis*, three, and *osteon*, a bone; three bony seeds. Nat. ord., *Caprifoliacææ*; Tribe, *Lonicerææ*. Allied to the Honey-suckle.)

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. angustifolium*. 1. Yellow. June. 1690.
— *perfoliatum*. 2. Dark red. June. 1730.
Swt. Fl. Gard. ser. 2, t. 45.

Tripha'sia. (From *triphasios*, triple; calyx three-toothed, and petals three. Nat. ord., *Rutacææ*; Tribe, *Aurantiacææ*.)

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; fibry, sandy loam and a little peat and dried cow-dung. Winter temp., 40° to 50°; summer, 60° to 80°.

- T. trifoliata*. 2. White. June. China. 1798.
Little Orange.

Triphysa'ria. (From *treis*, three, and *physa*, a bladder; the corolla has three bladder-like appendages. Nat. ord., *Scrophulariacææ*; Tribe, *Euphrasiacææ*.)

Hardy, annual herb.
T. versicolor. 1. Cream-colour to purple. June. North America. Now known as *Orthocarpus erianthus*, var. *roseus*.

Triplet Lily. *Tritele'ia*.

Tripoly. *A'ster Tripo'lium*.

Tri'psacum. (From *tripeo*, to thresh. Nat. ord., *Gramineææ*.)

Greenhouse, or hardy grass.
T. hermaphroditum. August. Central America. 1776. Syn., *Anthepora elegans*.

Triptery'gium. (From *treis*, three, and *pterygion*, a small wing; in reference to the three-winged fruit. Nat. ord., *Celastracææ*; Tribe, *Celastrææ*.)

Hardy subscandent shrub. We know nothing of its cultivation.

T. Wilfordi. White. Japan. 1867. Gfl. t. 612.

Triptilion. (From *treis*, three, and *vtilon*, a feather; the divisions of the pappus, or seed-crown. Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*.)

Hardy annuals, from Chili. Seeds in a slight holed 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. cordifolium. $\frac{1}{2}$. White. July. 1824. B. R. t. 853.

— *spinosum*. $\frac{1}{2}$. Blue. July. 1827. Maund. Bot. t. 224.

Trista'gma. (From *treis*, three, and *stigma*, a drop; in allusion to the three honey glands. Nat. ord., *Liliaceæ*; Tribe, *Alliææ*. Syns., *Stemmatium* and *Stephanolirion*.)

Greenhouse, bulbous plant. Rich, sandy loam. Seeds or offsets.

T. narcissoides. $\frac{1}{2}$. White, orange. Chili. 1875. Syn., *Stemmatium narcissoides* and *Stephanolirion narcissoides*.

Trista'nia. (Named after *Tristan*, a French botanist. Nat. ord., *Myrtaceæ*.)

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, fibry loam, and a little peat and charcoal. Winter temp., 35° to 45°.

T. arboreascens. 10. 1820.

— *conferta*. 6. August. 1805.

— *densiflora*. 1881.

— *depressa*. See *T. suaveolens*.

— *macrophylla*. 50. White. June. 1800. B. R. t. 1839.

— *nerifolia*. 6. July. 1804. B. C. t. 157. Syns., *Melaleuca nerifolia*, B. M. t. 1085, and *M. salicifolia*, Andr. Rep. t. 485.

— *suaveolens*. August. 1820. Syn., *T. depressa*.

Tritele'ja. (From *treis*, three, and *teleios*, complete; parts of the flower and fruit in threes. Nat. ord., *Liliaceæ*; Tribe, *Alliææ*.) United with **Brodiaæa** in the Genera *Plantarum*.

Very pretty little bulbs for a front border. Offset-bulbs; sandy loam, peat and leaf-mould; protected in a dry border from frost and damp in winter, or saved in a cold pit or frame.

T. aurea. 1. Yellow. April. Monte Video. 1838.

— *conspicua*. See *Milla conspicua*.

— *grandiflora*. See *Brodiaæa Douglasii*.

— *la'xa*. 14. Dark blue. July. California. 1832. B. R. t. 1685.

— *Leichtlinii*. See *Milla Leichtlinii*.

— *porrifolia*. See *Milla porrifolia*.

— *uniflora*. B. R. t. 1921. See *Milla uniflora*.

Trithri'nax. (From *treis*, three, and *thrinax*, a fan; alluding to the division and form of the leaves. Nat. ord., *Palmææ*; Tribe, *Coryphææ*.)

Stove-palms. For cultivation. see **THRINAX**.

T. acanthocoma. Rio Grande. 1878.

— *aculeata*. A synonym of *Acanthorhiza aculeata*.

— *brasiliensis*. 10. Brazil. 1875.

— *campestris*. South Argentine. 1889. Half-hardy.

— *mauritiæformis*. See *Sabal mauritiæformis*.

Tri'toma. (From *treis*, three, and *tenno*, to cut; three sharp edges of the ends of the leaves. Nat. ord., *Liliaceæ*; Tribe, *Hemerocallææ*.) This name is now superseded by **Kniphofia**.

Greenhouse, orange-flowered bulbs, from South Africa. Division, and by suckers from the roots; rich, sandy soil; as they bloom late, they are better for the protection of a cold pit in late autumn and winter.

T. Burche'lii. $\frac{1}{2}$. 1816. B. R. t. 1715.

— *Canari*. A yellow-flowered form of *Kniphofia aloides*.

— *flammea*. See *Blanfordia flammea*.

— *grandis*. Scarlet, yellow. 1884.

— *me'dia*. 2. April. 1789. Red. Lil. t. 161.

— *no'bilis*. 1882.

— *pu'mila*. 1. September. 1774. B. M. t. 764.

— *Roope'ri*. See *Kniphofia Rooperi*.

— *Savend'sii*. 1882.

— *Uva'ria*. B. M. t. 758. A synonym of *Kniphofia aloides*.

Tritoma'nthe Uva'ria is a synonym of **Kniphofia aloides**.

Trito'nia. (From *triton*, a weather-cock; variable direction of the stamens. Nat. ord., *Iridææ*; Tribe, *Ixiææ*.)

Montbretia is sometimes united with this genus. Allied to *Ixia*.)

Bulbs, from South Africa. For culture, see **IXIA**.

T. anigozanthæiflora. $\frac{2}{3}$. Yellow. June. 1825.

— *aurea*. 2. Orange. July. 1846. B. M. t. 4335. Now known as *Crocusma aurea*.

— *capensis*. 1. White or red. September. 1811. B. M. t. 618. Syn., *Gladiolus roseus*. Jacq. Ic. t. 261.

— *co'ncolor*. 1. Yellow. May. 1811.

— *cri'spa*. $\frac{1}{2}$. Flesh. April. 1787. Syn., *Gladiolus crispus*. Jacq. Ic. t. 267.

— *croca'ta*. $\frac{2}{3}$. Orange. June. 1758. Syns., *Gladiolus carinatus*, B. M. t. 135, and *Ixia crocata*, B. M. t. 184.

— *crocusmæflora*. A hybrid between *T. Pottsii* and *Crocusma aurea*. Flor. Mag. new ser. t. 472.

— *deu'sta*. $\frac{1}{2}$. Fulvid. May. 1774. Syn., *Ixia miniata* of Red. Lil. t. 89.

— *fenestra'ta*. $\frac{1}{2}$. Yellow. May. 1801. Syn., *Ixia fenestrata*. Jacq. Ic. t. 289.

— *fla'va*. $\frac{2}{3}$. Yellow. February. 1780. B. R. t. 747.

— *fuca'ta*. Red, yellow. May. 1813. B. R. 1838, t. 35.

— *linea'ta*. 2. Variegated. May. 1774.

— *longiflora*. 1. White. May. 1774. B. M. t. 1502. Syn., *Ixia longiflora*, B. M. t. 266.

— *miniata*. $\frac{1}{2}$. Scarlet. August. 1795. B. M. t. 609. Syn., *Ixia miniata* of Jacq. H. Schoenb. t. 24.

— *odora'ta*. $\frac{2}{3}$. Yellow. June. 1829. B. C. t. 1820.

— *pa'llida*. 1. White. August. 1806.

— *pectina'ta*. 1. Yellow. May. 1825.

— *Pottsii*. 3-4. Orange-scarlet. 1877. B. M. t. 6722. Syns., *Gladiolus Pottsii* and *Montbretia Pottsii*.

- T. refracta*. B. R. t. 135. See *Freesia refracta*.
 — *Roche'nsis*. 1. Yellow. August. 1811. B. M. t. 1503.
 — *rosea*. 1½. Pink. June. 1793.
 — *scilla'ris*. White or reddish. May. Syn., *Ixia polystachya*, Jacq. Ic. t. 276; *I. polystachya*, var. *incarnata*, Andr. Rep. t. 128; *I. reflexa*, Andr. Rep. t. 14; and *I. scillar'is*, B. M. t. 542.
 — *securigera*. ½. Brown. May. 1774. Syn., *Gladiolus securiger*. B. M. t. 383.
 — *squallida*. ½. Rufous. May. 1774. B. M. t. 581. Syn., *Ixia hyalina*. Red. Lil. t. 87.
 — *strigata*. 1. Blue. May. 1825.
 — *tenuiflora*. 1. Yellow. April. 1811. B. C. t. 1073.
 — *viridis*. ¾. Green. July. 1788. B. M. t. 1275.
 — *Wilsoni*. 1½. White, flushed with purple. 1886.
 — *zantho'epila*. 1. Red, yellow. June. 1825.

Triumfetta. (In honour of G. B. Trionfetti, an Italian botanist, 1658-1708. Nat. ord., *Tiliaceæ*.)

Stove, or greenhouse herbs or subshrubs, of little horticultural value.

- T. annua*. Yellowish. August. East Indies. B. M. t. 2296.
 — *micropetala*. Yellow. East Indies. B. R. t. 1058.

Trixis. (From *trixos*, triple; triangular seed-vessel. Nat. ord., *Compositæ*; Tribe, *Mutisiaceæ*.)

White-flowered, blooming in August. *Senecioides* by seed in open ground in April; *auriculata*, 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. auriculata*. 1. Brazil. 1827. Evergreen. B. M. t. 2765.
 — *senecioides*. 1½. Chili. 1821. Annual.

Trizeuxis. (From *treis*, three, and *zeuxis*, a union; the three outer perianth segments are united. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidiææ*.)

Stove, epiphytal orchid, to be grown on blocks of wood. Divisions.

- T. falca'ta*. ½-1. Green. Columbia and Trinidad. 1820. B. C. t. 975.

Troche'tia. (Named after Dutrochet, the celebrated French physiologist. Nat. ord., *Sterculiaceæ*; Tribe, *Dombeyææ*. Allied to *Dombeya*.)

Stove evergreen shrub. Cuttings of ripened shoots in sand, under a bell-glass, in March, and inserted in a sweet bottom-heat; sandpeat and fibry loam, with a little charcoal and broken freestone. Winter temp., 55° to 65°; summer, 65° to 88°.

- T. Blackburniana*. White, crimson. Mauritius. B. M. t. 7209.
 — *grandiflora*. 6. White, yellow. Mauritius. 1844. Syn., *Pentapetes Erythrozylon*. B. M. t. 1000.

Trochocarpa. (From *trochos*, a wheel, and *karpas*, a fruit. Nat. ord., *Epacridææ*; Tribe, *Stypheliææ*. 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, fibry 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*. 25. Yellow. June. Australia. 1829. B. M. t. 3324.

Tro'lius. Globe-Flower. (From *trol*, the German for round; and the globular flowers. Nat. ord., *Ranunculaceæ*; Tribe, *Helleboreæ*. Allied to *Helleborus*.)

Hardy, yellow-flowered, herbaceous plants. Divisions of the plant in spring; light, loamy soil, rather moist.

- T. acau'lis*. ½. July. Cashmere. 1841. B. R. 1843, t. 32.
 — *aconitifolius*. 2. May. 1829.
 — *alta'icus*. May. Altai. 1836.
 — *americana*. B. M. t. 1988. See *T. laxus*.
 — *asiaticus*. 1½. Dark orange. May. Siberia. 1769. B. M. t. 235. There is a variety *superbus*.
 — *cauca'sicus*. 1½. May. Caucasus. 1817.
 — *europæus*. 2. May. Britain. Eng. Bot. ed. 3, t. 42.
 — *alb'us*. 1. Whitish. June. Britain.
 — *hu'milis*. 1. May. Austria. 1800.
 — *la'vus*. ¾. May. North America. 1805. Syn., *T. americanus*. B. C. t. 56.
 — *Ledebor'rii*. 2. May. Siberia. 1827.
 — *napellifolius*. 2. May. Europe.
 — *pa'tulus*. 1. Orange. May. Siberia. 1800.
 — *Riederiana*. May. Siberia. 1838.

Tromsdo'rfia. (After J. B. Trommsdorf, an apothecary at Erfurt, 1770-1837. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandraceæ*.) A synonym of **Chirita**.

T. speciosa. A synonym of *Chirita Horsfieldii*.

Tropæolum. Indian Cress. (From *tropaion*, a trophy. Nat. ord., *Geraniaceæ*; Tribe, *Pelargoniceæ*.)

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 suite 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. digitatum*. Scarlet. July. Caraccas. 1852. Gf. t. 1146. Syn., *T. Gærtnerianum*.
 — *Gærtnerianum*. See *T. digitatum*.
 — *ma'jus*. 6. Orange, yellow. July. Peru. 1686. B. M. t. 23.
 — *atro-sanguineum*. 3. Dark red. August. Peru.
 — *mi'nis*. 1. Orange, yellow. August. Peru. 1596. B. M. t. 98.

HALF-HARDY TUBERS.

- T. Be'nthii*. Yellow. June. Bolivia. 1850.
 — *brachyceras*. Yellow. Chili. 1830. B. M. t. 3851.
 — *ed'le*. 6. Orange. March. Chili. 1841. Maund. Bot. t. 248.
 — *Moritzianum*. 6. Yellow, red. July. Cumana. 1839. B. M. t. 3844.
 — *pentaphyllum*. See *Chymocarpus pentaphyllum*.
 — *tuberosum*. 3. Yellow, red. September. Peru. 1836.
 — *umbellatum*. 8. Rose, orange. June. Pilzium. 1846.

- GREENHOUSE.
T. aduncum. B. R. t. 718. See *T. peregrinum*.
 — *azurum*. 3. Blue. October. Chili. 1842.
 Herbaceous. B. M. t. 3985.
 — *chrysanthum*. Yellow. Summer. Columbia.
 1874.
 — *crenatisolum*. 3. Yellow. June. Peru.
 1845. Herbaceous. B. M. t. 4245.
 — *Deckeria num.* Blue, green, scarlet. Venezuela.
 — *hybridum*. 4. Orange. July. Peru.
 — *Jarra'ttii*. 12. Scarlet, yellow. Santiago.
 1836. Paxt. Mag. v. p. 29.
 — *Lobbiana num.* 6. Orange. November. Columbia. 1843. Herbaceous. B. M. t. 4097.
 — *umbriatum*. A hybrid with fringed petals. 1856.
 — *ma'jus flore-ple'no*. 6. Orange, yellow. August. Peru. 1686.
 — *ma'nus flore-ple'no*. 1. Orange, yellow. Peru. 1596.
 — *pendulum*. Yellow. July. Central America. 1850.
 — *peregrinum*. 3. Yellow. July. New Grenada. 1810. B. M. t. 1351. Syn., *T. aduncum*.
 — *pinna'tum*. 2. Yellow. June. 1800. Andr. Rep. t. 535. A hybrid.
 — *polyphyllum*. 3. Orange, yellow. June. Chili. 1827. B. M. t. 4042.
 — *sensitivolum*. Red, shaded with violet. Chili. 1868.
 — *Smit'hiu*. Orange, red. July. Columbia. 1775. B. M. t. 4385.
 — *speciosum*. 6. Scarlet. June. S. America. 1846. Herbaceous. B. M. t. 4323.
 — *tricolorum*. Orange, purple. July. Valparaiso. 1828. Swt. Fl. Gard. t. 270. There are several varieties, e.g., *grandiflorum*, *Regelia'num*, *Schul'tzii*, etc.

Trotties. *Synophytum asperimum*.

Trowel. This implement, made of iron, from six to twelve 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.

Troximon. (From *troximos*, edible; the plants, however, are not edible. Nat. ord., *Compositæ*.)

Perennial, almost stemless herbs. Sandy loam. Divisions.

T. glaucum. 1. Bright yellow. May. United States. 1811. B. M. t. 1667.

— *dasycephalum*. Bright yellow. May. North America. B. M. t. 3462. Syn., *Annogeton scorzoneraefolium*.

True Love. *Paris quadrifolia*.

Truffle. *Tuber magnatum*, Piedmontese Truffle; *T. Bo'rchiu*, Italy; *T. moschatum*, Musk Truffle, near Bath;

T. ciba'rium, Common Truffle, England. But, besides the tubers, there are other edible fungi known as truffles, viz., *Hydrob'olites 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-pulverized 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 two 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 six inches distance, he placed good and sound truffles, each of them being surrounded with two or three hand-fulls 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 of 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 spores 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 eight inches deep, and screen it, that it may be as fine as possible; then lay about two or three 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 a foot and a half 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 quercus ilex or evergreen oak, as the elm is the favourite of the morille. 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 Flower. *Bigno'nia*.

Trumpet Weed. *Eupato'rium purpu'reum*.

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 *trymalia*, a perforation; the capsule has small holes at the top. Nat. ord., *Rhamnaceæ*; Tribe, *Rhamnaceæ*.)

Greenhouse evergreen shrubs, from Australia. For culture, see POMADERIS. *P. globulo'sa* and *P. Wendlandia'na* belong to this genus.

T. capsula'ris. 3. Purple, yellow. April. 1820.

— *odorat'issimum*. White. February. 1837.

— *spathula'ta*. 4. Purple, yellow. April. 1826.

Tsu'ga. (The Japanese name. Nat. ord., *Conifereæ*; Tribe, *Abietineæ*. Allied to *Picea* and *Abies*.)

Hardy trees. This has by some authors been considered as a section of *ABIES*.

T. Brunonia'na. 70. Bhotan. Syns., *Abies Brunoniana*, *A. dumosa*, and *Pinus Brunoniana*.

— *canade'nsis*. 70. North America. 1736. Syns., *Abies canadensis*, *Picea canadensis*, and *Pinus canadensis*. Hemlock Spruce.

— — *alba-epi'ca*. Tips of young branches white.

— *gra'cilis*. Branchlets very slender, drooping.

— — *microphy'lla*. Oregon. Syn., *Picea canadensis*, var. *microphy'lla*.

— — *milford'e'nsis*. A dwarf variety with drooping branches.

— — *na'na*. 3. More or less prostrate.

— *carolinia'na*. 60. North Carolina. 1836. G. C. 1836, xxvi. p. 781.

— *Hookeria'na*. British Columbia. 1852.

— *Mertensia'na*. 150. California. Syns., *Abies Albertiana*, *Abies heterophylla*, *A. Mertensiana*, *Pinus heterophylla* and *P. Mertensiana*.

— *Pattonia'na*. California. 1852. Syn., *Abies Williamsoni*.

— *Ro'e'ziii*. 60. North California.

— *Sieboldii*. 100. Japan. Syns., *Abies Tsuga*, *Picea Tsuga* and *Pinus Tsuga*.

— — *na'na*. 3. Japan. 1872. Syns., *Abies Tsuga*, var. *nana*, and *Pinus Tsuga*, var. *nana*.

Tube Flower. *Clerode'ndron Siphona'nthus*.

Tuber. A roundish, underground stem furnished with buds, which under favourable conditions develop into new plants, e.g., the Potato.

Tu'ber ciba'rium. See **Truffle**.

Tuberose. *Polia'nthes tubero'sa*.

Tulba'gia. (After a Dutch governor at the Cape of Good Hope, named *Tulbagh*. Nat. ord., *Liliaceæ*.)

Greenhouse herbs, with perennial rhizomes. Compost of sandy loam or peat. Offsets or seeds.

T. affi'nis. See *T. alliacea*, var. *affinis*.

— *alkia'cea*. 1-1½. Greenish-purple. June. South Africa. 1820. Ref. Bot. t. 349.

See also *T. capensis*.

— — *affinis*. A robust variety. Syn., *T. affinis*.

- T. alba*'cea *Ludwigia*'na. 1½-2. Syn., *T. Ludwigiana*.
 — *capensis*. 1½-2. Greenish-purple. June. South Africa. 1774. Jacq. Vind. t. 115. Syn., *T. alliacea* of B. M. t. 806.
 — *Ludwigia*'na. See *T. alliacea*, var. *Ludwigiana*.
 — *natalesis*. Greenish-white. Natal. 1891.
 — *viola*'cea. 1-2. Purplish-violet. March. South Africa. 1838. B. M. t. 8555.

Tulip. *Tu'lipa*.

Tu'lipa. The Tulip. (From its Persian name, *thoulyban*. Nat. ord., *Liliaceæ*; Tribe, *Tulipeæ*. Syn., *Orithya*.)

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. acuminata*'ta. Variable. May. 1810. Syn., *T. cornuta*. B. R. t. 127. Turkish Tulip. Native country unknown.
 — *Alberti*'ta. Scarlet, scarlet-yellow, or purple. Turkestan. 1877. B. M. t. 6761.
 — *altaica*. 1. Yellow. April. Altai.
 — *Aucheria*'na. ½-¾. Mauve-lilac, yellow. April. Teheran. 1880.
 — *australis*. 1½. Yellow, flushed with red. June. Savoy. Syns., *T. Breyniana*, B. M. t. 717, and *T. Celsiana*.
 — *Batali*'ni. Pale yellow. Buchar. 1889. Gf. t. 1307, fig. 2.
 — *Biebersteinia*'na. 1. Yellow, purple. June. Siberia. 1820.
 — *biflora*'ra. ¾. Yellow. April. Russia. 1806. B. R. t. 535; B. M. t. 6518.
 — *Billetia*'na. See *T. Didieri*, var. *Billetiana*.
 — *Bonartia*'na. Swt. Fl. Gard. ser. 2, t. 116. See *T. strangulata*.
 — *Borszczowii*. 1-1½. Bright-red, brownish-black, yellow. Spring. Central Asia. Gf. t. 1175; B. M. t. 6635.
 — *brachystemon*. Yellow, red. Turkestan. Gf. t. 1099, figs. 2-3.
 — *Breynia*'na. See *T. australis*.
 — *camptopetalata*. A form of *T. Didieri*.
 — *Celsia*'na. See *T. australis*.
 — *ciliatula*. Bright crimson. Asia Minor. 1890.
 — *Chusia*'na. 1. White, purple. July. Sicily. 1636. B. M. t. 1390.
 — *cornuta*'ta. See *T. acuminata*.
 — *cruciatata*. Cherry-red, yellow. Spring. Asia Minor. 1874.
 — *cuspidata*'ta. See *T. Elwesii*.
 — *Damma*'nni. Purple, black. Mount Lebanon. 1889. Gf. t. 1300, fig. 2.
 — *Didieri*. Bright red. May. Alps. 1882. B. M. t. 6639. Syn., *T. Fransoniana*.
 — *Billetia*'na. Yellow. Switzerland. 1888. Syn., *T. Billetiana*.
 — *edulis*. ¾. Pale yellow, sometimes flushed with red. May. Japan. Syn., *Orithya edulis*.
 — *Eichleri*'ri. 1½. Crimson, black, yellow. April. Georgia. 1874. B. M. t. 6191.
 — *elegans*. Bright red, yellow. April. Probably a hybrid.
 — *Elwesii*. Bright scarlet, black, yellow. April. Teheran. Gf. t. 1147. Syn., *T. cuspidata*.
 — *fra*'grans. See *T. sylvestris*.
 — *Fransonia*'na. See *T. Didieri*.
 — *fulgens*. A form of *T. Gesneriana*.
 — *Gesneria*'na. 2. Striped. April. Levant. 1877. Syn., *T. Gesneriana*, var. *Strangwaysii*. B. R. 1838, t. 46.

- T. Gesneria*'na *Dracontia*. Petals lacerated; various colours. Parrot Tulip.
 — *lacinia*'ta. 2. Variegated. April. Levant. 1608.
 — *lutea*. 1½. Yellow. April. Levant. 1608.
 — *ple*'na. 1. Variegated. April. Levant. 1608.
 — *spathulata*. Bright red, purplish-black. Syns., *T. Gesneriana*, var. *vera*, and *T. spathulata*.
 — *vera*. See *T. Gesneriana*, var. *spathulata*.
 — *versicolor*. 1½. Variegated. April. Levant. 1608.
 — *Greigii*. ¾. Scarlet, purple, or yellow. Turkestan. 1878. B. M. t. 6177. There are numerous varieties of this species; see Wien. Gart. 1888, p. 333.
 — *Grisebachia*'na. 1. Lemon-yellow. Spring. Herzegovina. 1884.
 — *Haage*'ri. ¾. Scarlet, yellow, blackish-blue. April. Greece. 1874. B. M. t. 6242.
 — *hiemalis*. Red. April. Russia. 1843.
 — *hu*'militis. See *T. australis*.
 — *ilic*'nsis. ¾. Yellow. E. Turkestan. 1879. B. M. t. 6518B.
 — *Kaufmannia*'na. 1½. Yellow, red. Spring. Central Asia. 1877. B. M. t. 6887.
 — *a'lbo-variegata*'ta. White, yellow, rose. Turkestan. 1877.
 — *luteo-variegata*'ta. Yellow, red, rose. Turkestan. 1877.
 — *Kesselringii*. ¾. Yellow, orange. Turkestan. 1879. B. M. t. 6754.
 — *Kolpakowskia*'na. 1. Yellow, red. Turkestan. 1878. B. M. t. 6710.
 — *Leichtlini*'ni. 1. Rich purplish-red, white, yellowish. Kashmir. 1889.
 — *libanotica*. Purple, black. 1888.
 — *linifolia*'ta. Scarlet, black. Central Asia. 1886. Gf. t. 1235, figs. d-f.
 — *macrospelta*. Bright crimson, yellowish. May. Probably a hybrid.
 — *maculata*'ta. Bright red, black. May.
 — *maleolens*. 1. Red. Yellow. May. Italy. 1827.
 — *variegata*'ta. 1. Variegated. May. Italy. 1827.
 — *Maximowiczii*. Scarlet-purple, blue-black, white. Buchar. 1889. Gf. t. 1307, fig. 1.
 — *me*'dia. 1. Scarlet, white. May. 1827.
 — *montana*'na. 1. Scarlet. July. Persia. 1827.
 — *neglecta*. See *T. strangulata*.
 — *oculus solis*. 1. Red, blue. April. Italy. 1816. Red. Lil. t. 219. B. R. tt. 204, 1143 and 1419 are *T. praecox*.
 — *persica*. 1. Scarlet, black. April. Persia. 1826.
 — *Orphanidea*. ¾. Yellow, red-brown. Spring. 1862. B. M. t. 6310.
 — *Ostrowskia*'na. Bright red, black. Spring. Turkestan. 1884. Gf. t. 1144, figs. 1-2.
 — *oxyptala*'ta. ¾. Yellow. Central Asia. 1879. Syn., *Orithya oxyptalata*.
 — *patens*. 1. White, grey. April. Siberia. 1826. Syns., *T. sylvestris*, var. *tricolor*, and *T. tricolor*. B. M. t. 3887.
 — *praecox*. 1. Scarlet. April. Italy. 1825. Syns., *T. Gesneriana* of B. R. t. 380, and *T. oculus solis* of B. R. cited above.
 — *primulifolia*'na. ¾. Primrose-yellow. Spring. Eastern Algeria. 1882. B. M. t. 6785.
 — *pubescens*. 1. Red. April. 1824. Syn., *T. suaveolens*, var. *latifolia*, B. M. t. 2888.
 — *pulchella*'na. ¾. Rose-red, bluish-lilac, purple. Asia Minor. 1877. B. M. t. 6304.
 — *repens*. 1. Yellow. April. Russia. 1819.

- T. retrofracta*. Bright yellow. May. Probably a hybrid.
- *saxatilis*. 1. Yellow. April. Crete. 1827. B. M. t. 6374.
- *scabriscapa*. 2. Red, yellow. April. Italy. 1837. B. E. t. 1990. This is a form of *T. strangulata*.
- *Schrenkii*. See *T. Gesneriana*.
- *Sintenisii*. Scarlet, black. March. Turkish Armenia. 1891. B. M. t. 7193.
- *spathulata*. See *T. Gesneriana*, var. *spathulata*.
- *stellata*. 2 $\frac{3}{4}$. White. April. Cumana. 1827. B. M. t. 2672.
- *strangulata*. 1 $\frac{1}{2}$. April. Syns., *T. neglecta* and *T. Bonarotiana*.
- *suavo-olens*. $\frac{1}{2}$. Red, yellow. April. South Europe. 1603. B. M. t. 839.
- *latifolia*. See *T. pubescens*.
- *sylvestris*. 1. Yellow. April. England. Eng. Bot. ed. 3, t. 1520. Syn., *T. fragrans*.
- *tricolor*. See *T. patens*.
- *Thianschanica*. Thian-schan Mountains.
- *tricolor*. See *T. patens*.
- *triphyllo*. $\frac{3}{4}$. Bright lemon-yellow. March. Central Asia. B. M. t. 6459.
- *Hoeltzeri*. Yellow. Turkestan. 1884. Gf. t. 1144, figs. 3-4.
- *tuolica*. See *T. Gesneriana*, var. *Dracontia*.
- *turkestanica*. Yellow. Western Turkestan. Gf. t. 1050, fig. 2.
- *undulatifolia*. $\frac{1}{2}$. Red, black, yellow. Asia Minor. 1877. B. M. t. 6308.
- *uniflora*. Pale yellow, greenish. April. Altai Mountains. Syn., *Orithya uniflora*. Swt. Fl. Gard. ser. 2, t. 336.
- *varia-picta*. A form of *T. strangulata*.
- *viridiflora*. Pale yellow, green.
- *virellina*. 1-2. Pale yellow. A hybrid. Gard. 1889, xxxvi., p. 531.

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 *Bizard* tulip has a yellow ground, and coloured marks on its petals.

A *Byblamen* 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 six or eight 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 or shovel out the subsoil till the bed is eighteen inches deep. After that is finished, dig a drain in the centre of the bed six 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, etc., are laid down, cover them with rubble, and then lay all over the bottom

of the bed three or four 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 two 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 six or eight 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. The 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 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 two 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 five 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 four feet wide, which would allow nine inches between each of the five rows, and six 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 nine 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 five feet; this will hold five rows nine inches apart. A walk between them may be either three or four 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, four and a half 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 five feet, and at a distance of five 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, fit 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, African. *Hæma'nthus*.

Tulip-bearing Myrtle. *Darwinia macrostygia*.

Tulip, Butterfly. *Calochortus lilacifolius*.

Tulip, Drooping. *Fritillaria Melea'gris*.

Tulip, Golden Star. *Calochortus pulche'llus*.

Tulip-Tree. *Liriodendron*.

Tulip-Tree, Laurel-leaved. *Magnolia*.

Tunica. (From *tunica*, a coat; the calyx. Nat. ord., *Caryophyllaceæ*; Tribe, *Sileneæ*. Allied to *Dianthus*.)

Hardy herbaceous plants, blooming in July. Seeds in spring, and division of the plants; rich, light soil.

T. dianthoides. Red. Candia. 1838.

— *ilyrica*. Red. Sicily. 1838.

— *pachynota*. White. Natolia. 1838.

— *Saxifraga*. $\frac{1}{2}$. Pink. Germany. 1774.

— *stricta*. Pink. Altaia. 1834.

Tupa. (The name of one of the species in Chili. Nat. ord., *Campanu-*

laceæ; Tribe, *Lobeliaceæ*.) A synonym of *Lobelia*.

Half-hardy herbaceous perennials. Cuttings, but chiefly by division of the suckers that spring up after the flowering stalks are cut down; rich, sandy loam. When planted out in a bed the surface may be dressed with advantage with rotten dung. Unless in a very sheltered place, they require the protection of a cold pit or a greenhouse in winter; and to flourish well they should be divided and potted, and assisted with a little heat in a bed before planting out in May.

T. arguta. See *Lobelia arguta*.

— *blanda*. 3. Pink. Chili. Swt. Fl. Gard. ser. 2, t. 308.

— *crassicaulis*. 3. Yellow. Red. Brazil. 1849.

— *Fewillei*. See *Lobelia Tupa*.

— *polyphylla*. A synonym of *Lobelia polyphylla*.

— *purpurea*. A synonym of *Lobelia purpurea*.

— *salicifolia*. A synonym of *Lobelia gigantea*.

— *secunda*. A synonym of *Lobelia secunda*.

Tupidanthus. (From *tupis*, a mallet, and *anthos*, a flower; referring to the form of the flower-bud. Nat. ord., *Araliaceæ*.)

Gigantic evergreen stove climber. Cuttings in sand under a bell-glass, in heat. Sandy loam. Summer temp., 60° to 90°; winter, 50° to 60°.

T. calyptra'tus. 50. Green. Khasia. B. M. t. 4908.

Tupistra. (From *tupis*, a mallet; in allusion to the form of the stigma. Nat. ord., *Liliaceæ*; Tribe, *Aspidistreeæ*. Allied to *Aspidistra*.)

Stove herbaceous perennials. Suckers, and division of the plant in spring. Rich loam. Summer temp., 60° to 80°; winter, 55° to 60°.

T. macrostygma. 1 $\frac{1}{2}$. Dark purple. Winter. Khasia. 1872. B. M. t. 6280. Syn.

Macrostigma tupistroides.

— *nivans*. See *T. squarida*.

— *squarida*. 2. Lurid-violet, greenish. March. Himalayas. 1820. B. M. t. 1855. Syn., *T. nutans*, B. M. t. 3054.

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 be 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 turving 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 grassside 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, two inches thick, fifteen or eighteen inches long, and a foot broad, having a long 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.

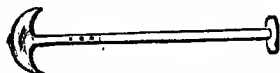
By Inoculation.—If turf is scarce, cut turfs into pieces, about three inches square, and plant these, green side up, pretty thickly over the space intended for the lawn. Beat them down into the soil, and water freely ; roll frequently, and water also in dry weather. The turf will soon be as close, and the sward as perfect, as if the ground had been entirely turfed.

Turf Ashes. See Ashes.

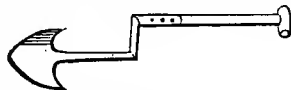
These, which are the basis of charred turf, now becoming so usual a manure, are, according to M. Sprengel, thus constituted :

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 turfs when first obtained. It is a thin, sharp-edged implement, somewhat resembling a cheese-cutter, fixed to a handle about four feet long.



The *Turfing Iron* is for raising or peeling off the turfs 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 an inch and a quarter 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, on account of the wideness of the interstices between the teeth.

The *Turf-Beater* or *Beetle* is made of a stout flat piece of wood about a foot square, furnished with a long handle fixed to it at such an angle as to allow of its being brought down flat upon the turf. Its object is to level newly laid turf, and press it firmly into position.

Turgo'sia. (From *turgesco*, to become turgid; the plants are succulent. Nat. ord., *Crassulaceæ*.) A synonym of **Crassula**.

- T. aloides.* See *Crassula aloides*.
capitella'ta. See *Crassula capitellata*.
linguaefo'lia. See *Crassula linguaefolia*.
obova'ta. See *Crassula obovata*.
pertu'sa. See *Crassula corymbulosa*.
pertu'sula. See *Crassula pertusula*.
toment'osa. See *Crassula tomentosa*.
turri'ta. See *Crassula turrita*.

Tu'rnera. (Named after *Dr. W. Turner*, author of the first English herbal. Nat. ord., *Turneraceæ*.)

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, fibry peat, and a little charcoal. Winter temp., 50° to 60°; summer, 60° to 85°.

GREENHOUSE ANNUALS.

- T. cistoides.* 1. July. America. 1774.
— guianensis. 1. June. Guiana. 1823.
— hi'ra. 1. June. Brazil. 1818.
— pu'mila. 1. August. Jamaica. 1796.
— racem'osa. 2. July. Siberia. 1789. Jacq. Vind. iii. t. 94.
— ulmifo'lia. 3. July. Jamaica. 1738. Biennial. B. M. t. 4137.

STOVE EVERGREENS.

- T. angustifo'lia.* B. M. t. 281. A synonym of *T. ulmifolia*, var. *angustifolia*.
— brazili'nsis. 1. June. Brazil. 1810.
— cuneifo'rmis. 1. June. S. Amer. 1821.
— rufostri's. 2. July. Guiana. 1824.
— trijifo'ra. 2. Brazil. 1812. B. M. t. 2106.
— ulmifo'lia angustifo'lia. 3. June. Jamaica. 1738.

Turnips. *Bra'ssica ra'pa.*

Varieties.—For the first sowings:—Early White Dutch, Early Stone, Early Munich and Extra Early Milan.

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.

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 twelve 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 two inches in breadth to at least twelve inches 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**, **Cabbage** **Ambury**, and **Black Fly**.

Turnip Cabbage (*Bra'ssica na'po-bra'ssica*), and Turnip-rooted Cabbage (*B. caul'ro-ra'pa*). See **Knohl-Kohl**.

Turnip-Fly. See **Black Flea**.

Turnip Moth. *Agro'tis sege'tum.*

Turnsole. *Heliotro'pium.*

Turpentine. *Sil'phium terebintha'ceum.*

Turpentine-Moth. See **Tortrix resinella**.

Turpentine-Tree. *Pista'cia terebinthus*, *A'bies* and *Pi'nus*.

Turpi'nia. (After *P. Turpin*, a French botanical artist. Nat. ord., *Sapindaceæ*; Tribe, *Staphyleæ*. Syns., *Lacepedea* and *Ochranthe*.)

Stove or greenhouse trees or shrubs. Cuttings of ripened wood, in sand, in heat.

- T. argu'ta.* 4. Dirty white; buds purplish. March. China. 1826. Syn., *Ochranthe arguta*. B. R. t. 1819. Greenhouse.
— insi'gnis. 20. White. May. Mexico. 1847. Syn., *Lacepedea insignis*.
— nepale'nsis. See *T. pomifera*.

- T. occidentalis*. 25. White. May. West Indies. 1824. Stove. Cassava Wood.
— *pomifera*. 25. White. May. India and China. 1820. Syn., *T. nepalensis*.

Turræa. (Named after *G. Turra*, professor of botany at Padua. Nat. ord., *Meliaceæ*; Tribe, *Meliacæ*. Allied to *Melia*.)

Stove evergreen trees. Cuttings of firm, young shoots in sand, under a bell-glass, in March, in a hotbed; fibry, sandy loam and vegetable mould. Winter temp., 55° to 60°; summer, 60° to 85°.

T. heterophylla. 20. White. May. Sierra Leone.

— *lobata*. White. July. Sierra Leone. 1843. B. R. 1844, t. 4.

— *obtusifolia*. 4 to 6. White. S. Africa. 1872.
— *pinna*. 15. Pale rose. March. Sylhet. 1828. B. R. t. 1413.

Turritis. (From *turritus*, towering. Nat. ord., *Cruciferæ*; Tribe, *Arabidææ*.) A synonym of **Arabis**.

T. alpina. A synonym of *Arabis ciliata*.

Tussa'cia. (Named after *F. B. de Tussac*, who wrote a Flora of the Antilles. Nat. ord., *Gesneraceæ*; Tribe, *Cyrtandracæ*. Allied to *Episcia*.)

Stove perennial herbs. For cultivation, see **GESNERA**.

T. pulchella. 1. Yellow; calyx red. July. West Indies. 1830. Syn., *Besleria pulchella*. B. M. t. 1146.

— *semiclavata*. Yellow, crimson-purple. Brazil. 1870.

Tussilago. Coltsfoot. (From *tussis*, a cough; used to allay coughs. Nat. ord., *Compositæ*; Tribe, *Tussilagineæ*.)

Hardy herbaceous perennials. Division of the roots, which are mostly inclined to spread freely. The flowers of many of the sorts, especially of *fragrans*, are grateful for 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. alba. 1. White. March. Europe. 1683.

— *alpina*. $\frac{1}{2}$. Lilac, purple. April. Austria. 1710. B. M. t. 84. Now referred to **HOMOZYNE alpina**.

— *discolor*. $\frac{1}{2}$. Lilac. Purple. April. Austria. 1633.

— *Farfara foliis variegatis*. $\frac{1}{2}$. Yellow. March. Britain.

— *fragrans*. B. M. t. 1388. See *Petasites fragrans*.

— *frigida*. See *Petasites frigida*.

— *hybrida*. See *Petasites vulgaris*.

— *integrifolia*. See *Chaptalia tomentosa*.

— *lævigata*. $\frac{1}{2}$. Yellow. May. Bohemia. 1816.

— *nivea*. See *Petasites nivea*.

— *palmaria*. $\frac{1}{2}$. White. April. Labrador. 1778.

— *Petasites*. See *Petasites vulgaris*.

— *purpurea*. Purple. July. Cape of Good Hope. 1825.

— *sagittata*. $\frac{1}{2}$. White. April. N. Amer.

Tutsan. *Hypericum Androsæmum*.

Tweedie. (Named after *Mr. Tweedie*, a botanical collector. Nat. ord., *Asclepiadaceæ*; Tribe, *Cynancheæ*.) A synonym of **Oxypetalum**.

Greenhouse twiners. Seeds in a slight hotbed in spring; cuttings of young shoots, getting firm at the base, in sand, under a bell-glass, in April or May; sandy, fibry loam, with a little peat and leaf-mould; require the protection of a cool greenhouse in winter.

T. cœrulea. Paxt. Mag. vi. p. 125. See *Oxypetalum cœruleum*.

— *floribunda*. A synonym of *Oxypetalum solanoides*.

— *pubescens*. A synonym of *Oxypetalum solanoides*.

— *rosea*. A synonym of *Oxypetalum solanoides*.

— *versicolor*. 3. Blue. July. Tucumania. 1836. B. M. t. 3630. See *Oxypetalum cœruleum*.

Twin-Flower. *Bravo'a geminiflora*.

Twisted Stalk. *Streptopus*,

Tydæa. (After *Tydeus*, son of *Eneus*, King of Calydon. Nat. ord., *Gesneraceæ*.) Now united with **Isoloma**.

Stove herbs. For culture, see **GESNERA**.

T. amabilis. 1-2. Dark rose, with purple spots. Spring. New Grenada. 1855. B. M. t. 4999.

— *Cecilia*. See *Isoloma Cecilia*.

— *hybrida nana*. Yellow, crimson, purple. Gf. 1883, p. 505, fig. 60. One of the numerous garden hybrids raised from this genus.

— *Lindenii* and *Lindeniana*. See *Isoloma Lindenianum*.

Tyle Berry. *Jatropha multifida*.

Tylophora. (From *tylos*, a swelling, and *phoreo*, to bear, the swollen pollen-masses. Nat. ord., *Asclepiadaceæ*; Tribe, *Marsdeniææ*.)

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. asthmaica. 5. Green. November. India. 1814. Syn., *Cynanchum viridiflorum*.

— *barbata*. 10. July. N. S. Wales. 1822.

— *calcarata*. Green, yellow. May. Brazil. 1840. Syn., *Hybanthera coriifolia*.

— *exilis*. 10. Pale purple. July. Sylhet. 1823.

— *grandiflora*. 10. July. N. S. Wales. 1822.

Typha. Bullrush; Reed Mace. (A name used by Theophrastus. Nat. ord., *Typhaceæ*.)

Hardy, perennial herbs, thriving by the sides of shallow rivers or ponds. Seeds or divisions.

T. angustifolia. Brown. July. Britain. Eng. Bot. ed. 3, t. 1386.

— *latifolia*. 3-7. Brown. July. Britain. Eng. Bot. ed. 3, t. 1385.

Typhonium. (A name applied to some Aroid by the ancients. Nat. ord., *Aroideæ*; Tribe, *Arineæ*. Allied to *Arum*.)

Stove tuberous-rooted herbs. Offsets. Rich loam and leaf-mould. Give plenty of water when flowering. Summer temp., 60° to 80°; winter, 58° to 65°.

- T. Brownii*. ½. Spathe and spadix dark lurid purple. April. Australia. 1875.
 — *cuspidatum*. 1. Spathe green; spadix whitish. East Indies. 1819. Syn., *Arum flagelliforme*. B. C. t. 396.
 — *divaricatum*. 2. Purple. July. East Indies. 1759. Syn., *T. trilobatum* of Curtis, *Arum divaricatum*, *Arum trilobatum*, B. M. t. 339, and *Arum trilobatum*, var. *auriculatum*, B. M. t. 2324.
 — *Huegelianum*. Spathe purple-brown; spadix blackish. Himalaya. 1879. Syn., *Heterostatis Huegeliana*.
 — *trilobatum*. 1½. Green, rose-purple. East Indies. 1714. Syn., *Arum orizense*, B. R. t. 450. See also *T. divaricatum*.

Tyto'nia. The Water Balsam. (In honour of *A. Tyton*, a patron of botany. Nat. ord., *Geraniaceæ*; Tribe, *Balsamineæ*.)

This genus is now called *Hydrocera*. Stove aquatic. Seeds sown in spring in a good hotbed, and grown in strong, loamy soil, with the pot immersed in water in a tub, and receiving the high temperature of a plant stove from 65° to 90°.

T. natans. Various. August. India. 1810.

U.

Ulcer. See **Canker.**

U'lex. Furze. (From the Celtic *ac*, point; the prickly branches. Nat. ord., *Leguminosæ*; Tribe, *Genisteæ*.)

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. europæus*. 6. Spring and autumn. Britain. Eng. Bot. ed. 3, t. 323.
 — *ac-re-pleno*. 6. May. Britain.
 — *strictus*. Branches erect. Syns., *U. hibernicus* and *U. strictus*. Irish Furze.
 — *Galli*. See *U. nanus*, var. *Galli*.
 — *genistoides*. 3. August. Mediterranean region. 1823. B. R. t. 1452. Syn., *Stauracanthus aphyllus*. Half-bardy. Portuguese Furze.
 — *hibernicus*. See *U. europæus*, var. *strictus*.
 — *nanus*. 3. Autumn. North West Europe.
 — *Galli*. A variety with longer spines. Syn., *U. Galli*. Fl. Ser. t. 441b.
 — *parviflorus*. 4. July. South Europe. 1823. Syn., *U. provincialis*.
 — *provincialis*. See *U. parviflorus*.
 — *strictus*. See *U. europæus*, var. *strictus*.

Ull'o'a parasit'ica. A synonym of *Juanulloa aurantiaca*.

Ull'cus. (From *ulluco*, its Quito name. Nat. ord., *Chenopodiaceæ*; Tribe, *Ebaselleæ*. Syn., *Mellica*.)

Herbaceous tuberous-rooted plant. It is extensively grown in the mountains of Peru and Bolivia for the sake of its small potato-like tubers. It was tried in this country unsuccessfully as a substitute for the potato.

U. tuberosus. 2. Yellow. August. S. America. 1847. B. M. t. 4617. Syn., *Basella tuberosa*.

U'lmus. The Elm. (From the Celtic name *ulm*. Nat. ord., *Urticaceæ*; Tribe, *Ulmææ*.)

Nearly all hardy; all deciduous, and brown-flowered, blooming in April. *U. campestris* and its allies, by suckers and layers, and by grafting on *U. montana*. 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. alata*. 30. N. America. 1820.
 — *alba*. 30. Hungary. 1824.
 — *americana*. 46. N. America.
 — *alba*. 40. N. America.
 — *foliis-variegatis*. Leaves variegated.
 — *incisa*. N. America.
 — *pendula*. N. America. 1820.
 — *rubra*. 40. N. America. 1824.
 — *campestris*. 80. Britain.
 — *acutifolia*. 80. Britain.
 — *alba*. 80. Britain.
 — *avrea*. Leaves golden-bronze. 1866. Syn., *U. Rosealis*.
 — *Berardi*. Seedling variety. 1887.
 — *betulifolia*. Britain.
 — *chinensis*. China, Syn., *U. chinensis*.
 — *conceaeifolia*. Britain.
 — *cornubiensis*. 8. Britain. Syn., *U. stricta*.
 — *cucullata*.
 — *foliis-auris*. Britain.
 — *foliis-variegatis*. Britain.
 — *latifolia*. 80. Britain.
 — *nanus*. 2. Britain.
 — *parvifolia*. 20. Siberia. 1822.
 — *planifolia*. 20. Syn., *U. planifolia*.
 — *sarriensis*. 80. Britain. Syn., *U. sarriensis*.
 — *stricta*. 80. Britain.
 — *tortuosa*. Britain.
 — *umbraculifera*. Tiffis. 1879.
 — *viminalis*. 80. Britain.
 — *virens*. 80. Britain.
 — *viscosa*. Britain. Syn., *U. viscosa*.
 — *vulgaris*. 80. Britain.
 — *carpinifolia*. See *U. campestris*.
 — *effusa*. See *U. pedunculata*.
 — *frutcosa*. 8. Europe.
 — *fulva*. 60. N. America. Syn., *U. pendula*.
 — *glabra*. 60. Britain. Syn., *U. suberosa*, var. *glabra*. Eng. Bot. ed. 3, t. 1286.
 — *glandulosa*. Britain.
 — *latifolia*. Britain.
 — *major*. 80. Britain.
 — *microphylla*. Britain.
 — *pendula*. Britain.
 — *ramulosa*. Floetbeck.
 — *variegata*. Britain.
 — *vegeta*. 80. Britain. Syns., *U. americana*, var. *vegeta*, and *U. montana*, var. *vegeta*.
 — *vulgaris*. 60. Britain.
 — *integrifolia*. 40. E. Ind. 1822.
 — *major*. 40. Britain.
 — *montana*. 40. Britain. Eng. Bot. ed. 3, t. 1287. Syn., *U. scabra*. Scotch or Wych Elm.
 — *australis*.

- U. monta'na cevenne'nsis.*
 — *cri'spa.* 20. N. America. Syns., *U. crispata* and *U. urticaefolia.*
 — *fastigia'ta.* Exeter. 1826.
 — *ma'jor.* Britain.
 — *mi'nor.* Britain.
 — *ni'gra.* 40. Ireland.
 — *pe'ndula.* Britain.
 — *rugo'sa.* 40. Britain.
 — *vulga'ris.* 40. Britain.
 — *nemora'lis.* See *Zelkova crenata.*
 — *parvifo'lia.* China and Japan.
 — *pedunculata.* 60. Europe. 1800. Syns., *U. ciliata* and *U. effusa.*
 — *Rosce'lsii.* See *U. campestris*, var. *aurea.*
 — *scab'ra.* See *U. montana.*
 — *subero'sa.* 40. Britain. Eng. Bot. ed. 3, t. 1285.
 — *alba.* Britain.
 — *angustifo'lia.* Hertford.
 — *ere'cta.* 80. Britain.
 — *fo'lia-variega'tis.* 80. Britain.
 — *glabra.* See *U. glabra.*
 — *latifo'lia.* Hertford.
 — *vulga'ris.* 80. Holland.
 — *urticafo'lia.* See *U. montana*, var. *crispa.*

Umbellula'ria. (A diminutive of *umbella*, a sunshade; referring to the arrangement of the flower. Nat. ord., *Laurineæ*; Tribe, *Perseaceæ*.)

Half-hardy evergreen tree or shrub. For culture, see LAURUS.

- U. califo'rnica.* 80. Greenish-yellow. June. California. 1862. Syns., *Ocotea californica* and *Oreodaphne californica.* B. M. t. 5320.

Umbilicus. (From *umbilicus*, the navel; concave leaves of some species. Nat. ord., *Crassulaceæ*.) See **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.* See *Cotyledon erecta.*
 — *glab'ra.* See *Cotyledon glabra.*
 — *horizonta'lis.* See *Cotyledon Umbilicus.*
 — *Lieve'nii.* See *Cotyledon Lievenii.*
 — *malacophyllus.* B. M. t. 4098. See *Cotyledon malacophylla.*
 — *penduli'nus.* See *Cotyledon Umbilicus.*
 — *platyphy'llus.* See *Cotyledon platyphylla.*
 — *Sempervi'vum.* See *Cotyledon Sempervivum.*
 — *serra'tus.* See *Cotyledon serrata.*
 — *spino'sus.* See *Cotyledon spinosa.*
 — *turkesta'nicus.* See *Cotyledon turkestanica.*

Umbrella Leaf. *Diphyll'e'ia cy-mosa.*

Umbrella Pine. *Sciado'pitys verticilla'ta.*

Umbrella Plant. *Saxi'fraga pel-tata.*

Umbrella Tree. *Magno'lia Umbrella* and *Thesp'e'sia popu'linea.*

Umbrella-wort. *Oxyba'phus.*

Unca'ria. (From *uncus*, a hook; the petioles become converted into hooks. Nat. ord., *Rubiaceæ*; Tribe, *Naucleæ*.) A synonym of **Nauclea.**

- U. Ga'mbier.* 10. Pale red. India. 1825. A synonym of NAUCLEA GAMBIEE.
 — *sessilifru'ctus.* 10. Pale red. India. 1829. A synonym of NAUCLEA SESSILIFRUCTA.

Unci'fera. (From *uncus*, a hook, and *fero*, to bear; in allusion to the curved process to which the pollen masses are attached. Nat. ord., *Orchideæ*; Tribe, *Vandee-Sarcantheæ*. Allied to *Saccobolium*.)

Stove epiphytal orchid. Grow on blocks or in baskets. See ORCHIDS.

- U. heteroglo'ssa.* 1878. G. C. 1878, x. p. 234.

Unge'ria. (After *F. Unger*, once professor of botany at Vienna. Nat. ord., *Amaryllideæ*; Tribe, *Amaryllceæ*.)

Hardy bulbous plant.

- U. trisphe'ra.* 1-1. Reddish. Afghanistan. 1886. Syn., *Lycoris Sewerzowi.* Gf. t. 914.

Underground Bean. *Voandzei'a subterra'nea.*

Underground Onion. See **Potato Onion.**

Ungna'dia. (In honour of *Baron Von Ungnad*, the introducer of the Horse-chestnut. Nat. ord., *Sapindaceæ*; Tribe, *Sapindeæ*.)

Hardy deciduous shrub. For cultivation, see PAVIA, to which it is allied.

- U. specio'sa.* 20. Pink. Texas. 1850. Fl. Ser. t. 1059.

Unicorn Plant. *Marty'nia lu'tea* and *M. probos'cida.*

Uni'ola. Spike Grass. (From *unus*, one; the glumes are united. Nat. ord., *Gramineæ*.)

Hardy perennial grasses. Seeds.

- U. latifo'lia.* 4. August. North America.
 — *Palme'ria.* 4. Colorado River. Gard. and For. 1889, p. 400, fig. 124.
 — *panicula'ta.* 4-8. North America.

Uno'na. (Probably altered from *Anona*, an allied genus. Nat. ord., *Anonaceæ*; Tribe, *Uvariceæ*.)

Stove evergreen. For culture, see UVARIA.

- U. Na'rum.* 10. Brownish. Malabar. Syn., *Uvaria Narum.*

Untrue. See **Sporting.**

Upas Tree. *Antia'ris toxica'ria.*

Upland Willow Oak. *Que'rcus cine'rea.*

Upright Portugal Laurel. *Ce'rasus lusita'nica*, var. *myrtifolia.*

Ura'nia. (From *ouranios*, sublime; the stateliness of the plant. Nat. ord., *Scitamineæ*; Tribe, *Museæ*.) See **Ravenala.**

Stove herbaceous. Seeds in a hotbed, in spring; suckers and divisions; sandy, fibry

loam, a little dried leaf-mould, and charcoal. Winter temp., 55° to 65°; summer, 65° to 90°, and a moist atmosphere.

U. madagascariensis, *U. Ravenala*, and *U. speciosa* are synonyms of *Ravenala madagascariensis*.

Ura'ria. (From *oura*, a tail; the bracts. Nat. ord., *Leguminosæ*; Tribe, *Hedysaræ*. 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 fibry peat. Winter temp., 55° to 65°; summer, 65° to 85°.

U. alopecuroides. White. July. E. Ind. 1823. Wight, Ic. t. 290.

— *comosa*. 3. Purple. July. E. Ind. 1818.

— *crinita*. 2. Pink. July. E. Ind.

— *hamosa*. White. June. E. Ind. 1827.

Wight, Ic. t. 284.

— *lagopthal.* 2. Yellow. July. Brazil. 1824.

— *lagopodioides*. 1½. Purple. July. China.

1790. Wight, Ic. t. 289.

— *lago'pus*. 7. Purple. June. Nepaul. 1824.

— *picata*. 3. Purple. July. Guinea. 1788.

Syn., *Hedysarum victum*. Jacq. Ic. t. 567.

Urceo'charis. (From a combination of *Urceolina* and *Eucharis*. Nat. ord., *Amaryllidæ*.)

U. Chibra'ni. Pure white. — A hybrid between *Eucharis amazonica* and *Urceolina pendula*. Journ. Hort. 1893, xxvi. p. 183, fig. 33.

Urceoli'na. (From *urceolus*, a small cup, or pitcher; from the smallness of the cup, or nectary, inside the flower. Nat. ord., *Amaryllidæ*; Tribe, *Pan-cratiæ*. Allied to *Eucharis*.)

Half-hardy bulb, growing in shady woods, and flowering from June to November, and requires perfect rest in winter. Offset bulbs; rich, fibry loam; the protection of a cold pit, and kept dry in winter.

U. aurea. See *U. pendula*.

— *latifolia*. 1. Bright yellow, green. September. Andes of Peru. Syns., *Chrysi-phiala latifolia*, *Leperezia latifolia*. B. M. t. 4952, and *Panocratum latifolium*.

— *minia'ta*. 1-1½. Bright scarlet. February. Andes of Peru. 1836. Syn., *Pentlandia minia'ta*. B. R. 1839, t. 68.

— *pendula*. Yellow, green. June. Peru. 1837. B. M. t. 5464. Syns., *U. aurea* and *Crinum urceolatum*.

Ure'do. See **Barberry and Mildew.**

Ure'na. (From the Malabar name, *Uren*. Nat. ord., *Malvaceæ*.)

Stove annual herb. Seeds. Rich, light soil.

U. lobata. Pink. Summer. India. B. M. t. 3043.

Urgi'nea. (From the name of an Arab tribe, *Ben Urgin*, in Algeria. Nat. ord., *Liliacæ*; Tribe, *Scilleæ*.)

Greenhouse bulbous plants. For culture, see **SCILLA**.

U. altis'sima. 3. Whitish, purplish-green. May. South Africa. 1789. Syn., *Drimia altis'sima*. B. M. t. 1074.

— *eriospermoides*. 2. Whitish. South Africa. 1887.

U. exuvia'ta. ½. Whitish, purple. June. South Africa. 1795. Syn., *Albuca exuvia'ta*. B. M. t. 871.

— *filifolia*. ½-1. Whitish, purple. June. South Africa. 1820. Syn., *Albuca filifolia*. B. R. t. 557.

— *fra'grans*. 1. Whitish, purple. July. South Africa. 1791. Syn., *Albuca fugax*. B. R. t. 311.

— *macroce'ntra*. 3. White, green. May. South Africa. 1887.

— *maritima*. 1-3. White, greenish-purple. Autumn. Mediterranean region. 1829. Syns., *U. Scilla* and *Ornithogalum Squilla*. B. M. t. 918. The bulbs of this plant furnish the squills of commerce.

— *physoides*. ½. Whitish, purple. June. South Africa. 1804. Syn., *Albuca physodes*. B. M. t. 1046.

— *Scilla*. See *U. maritima*.

Urine. (See **Dung**.) The urine of all animals is excellent as manure; but it must be given only to plants whilst growing, and in a diluted state. One of the most fertilizing 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; referring to the long form of the petals. Nat. ord., *Orchidæ*; Tribe, *Cypripediæ*.) See **Sele-nipedium**.

Stove orchids. See **ORCHIDS**.

U. Lindle'ni. See *Sclenipedium Lindeni*.

Urope'talon. (From *oura*, a tail, and *petalon*, a petal; the petals are lengthened out into tail-like appendages. Nat. ord., *Liliacæ*; Tribe, *Scilleæ*.) See **Dipcadi**.

Offsets in spring; sandy, light loam and leaf-mould. Must be kept dry in winter, either by protecting them in a border, or placing them in a cold pit; perhaps best by potting them, and keeping them in a pit or greenhouse, and dry, until growth has fairly commenced.

U. fulvum. See *Dipcadi scrotinum*, var. *fulvum*.

— *glau'cum*. B. R. t. 156. See *Dipcadi glaucum*.

— *longifolium*. B. R. t. 974. See *Dipcadi longifolium*.

— *scrotinum*. See *Dipcadi scrotinum*.

— *umbonatum*. Ref. Bot. t. 17. See *Dipcadi umbonatum*.

— *Welwitschii*. Ref. Bot. t. 16. See *Dipcadi Welwitschii*.

Uroski'nnera. (Named after *G. Ure Skinner*, a merchant and collector of

Central American plants. Nat. ord., *Scrophulariaceæ*; Tribe, *Cheloneæ*.)

Stove herbaceous plant. Cuttings in sand under a bell-glass. Sandy loam. Summer temp., 60° to 80°; winter, 50° to 60°.

U. spectabilis. Pale purple. July. B. M. t. 5009.

Urosp'atha. (From *oura*, a tail, and *spatha*, a spathe; referring to the long-pointed spathe of most of the species. Nat. ord., *Aroidæ*; Tribe, *Orontieæ*.)

Stove aroids.

U. descol'scens. 3. Brown, claret. Brazil. 1860. — *sagittifolia*. Green. Para. 1866.

U. elegans, *U. grandis*, *U. picturata*, *U. spectabilis*, and *U. splendens*, all from Para, are garden names for what are probably varieties of *U. sagittifolia*.

Urospe'rmum. (From *oura*, a tail, and *spermum*, a seed. Nat. ord., *Compositæ*; Tribe, *Cichoriaceæ*. Syn., *Arnopogon*.)

Hardy herbs. Common garden-soil. Seeds in March or April.

U. Dalecha'mpii. 2. Pale yellow. July. South Europe. 1739. Syn., *Arnopogon Dalechampii*, B. M. t. 1623. Perennial.
— *picrotides*. 1. Yellow. July. South Europe. 1683. Syn., *Arnopogon picrotides*, Sibth. Fl. Gr. t. 781. Annual.
— *asperum*. 2. Yellow. July. Montpellier. 1774. Syn., *Arnopogon asperum*, *capense*. 1. Yellow. July. South Africa. 1818. Syns., *Arnopogon capense* and *Tragopogon capensis*, Jacq. Ic. t. 577.

Ursi'nia. (After John Ursinus, of Regensburg, 1608-1666. Nat. ord., *Compositæ*; Tribe, *Arctotideæ*. Syn., *Sphenogyne*.)

Greenhouse, or half-hardy herbs or shrubs. Loam and peat. Cuttings.

U. abrotanifolia. 1-2. Yellow. July. South Africa. 1789. Syn., *Sphenogyne abrotanifolia*.
— *anthemoides*. $\frac{1}{2}$ -1. Yellow, purplish. August. South Africa. 1774. Syns., *U. paradoxa*, *Arctotis anthemoides*, B. M. t. 544, and *Sphenogyne anthemoides*.
— *crithmifolia*. 1-2. Bright yellow. July. South Africa. 1768. Syn., *Sphenogyne crithmifolia*, B. M. t. 8042.
— *dentata*. 1-2. Yellow. June. South Africa. 1787. Syn., *Sphenogyne dentata*.
— *foeniculæcea*. 1. Yellow. August. South Africa. 1825. Syn., *Sphenogyne foeniculæcea*.
— *leucanthemoides*. $\frac{1}{2}$. Yellow. August. South Africa. 1825. Syn., *Sphenogyne leucanthemoides*.
— *odorata*. 1. Yellow. May. South Africa. 1774. Syn., *Sphenogyne odorata*.
— *paradoxa*. See *U. anthemoides*.
— *pili'fera*. Yellow, purplish. December. South Africa. 1821. Syn., *Sphenogyne pili'fera*, B. R. t. 604.
— *pu'chra*. 1. Bright orange. Summer. 1836. Syn., *Sphenogyne spectiosa*.
— *scario'sa*. 1. Yellow. June. South Africa. 1774. Syn., *Sphenogyne scario'sa*.
— *serrata*. Yellow. June. South Africa. 1826. Syn., *Sphenogyne serrata*.

Urtica. Nettle. (From *uro*, to burn; most of the species are furnished with stinging hairs. Nat. ord., *Urticaceæ*; Tribe, *Urticeæ*.)

A genus of no horticultural value, best known by its British species—*dio'ica*, *pili'fera*, *urens*—which often occur as garden weeds.

U. æstivans. Jacq. H. Schoenb. t. 388. See *Fleurya æstivans*.

— *involuta* ta. B. M. t. 2481. A synonym of

Pilea involucreta.

— *reticulata*. B. M. t. 2567. A synonym of *Pilea reticulata*.

Urvillea. (After Captain Dumont D'Urville, a French naval officer and botanist. Nat. ord., *Sapindaceæ*.)

Climbing stove shrub.

U. ferrugi'nea. Whitish. South America.

Urosti'gma. See **Ficus**.

Ustilago. The typical genus of the *Ustilagineæ*, an order of microscopic fungi, commonly known as **Smuts**, which attack various flowering plants, more especially grasses. *Urocystis* is an allied genus.

Utricularia. Bladder-wort. (From *utriculus*, a little bottle; on account of the minute pitcher-like bodies developed on their roots and leaves. Nat. ord., *Lentibulariaceæ*. Allied to *Pinguicula*.)

A large genus of curious and very interesting plants, very few of which are in cultivation, although many are exceedingly pretty. We do not know that our native species are cultivated, but they are added here as they are quite worthy. The stove species should be grown in sphagnum-moss mixed with bits of charcoal, and treated like an orchid. The pitcher-like bodies are very curious: they are hollow, and have their inner surface covered with minute quadrifid hairs; the mouth is furnished with a little flap which acts like that of certain mouse-traps. Minute animalcules endeavour to get in these little pitchers, which are veritable traps; they push against the flap, which yields and allows them to enter, and then it springs back into its former position and closes the entrance, so that the animalcule cannot get out again, but, after a while, dies and decomposes, and the nutritive matter of its decomposed body is absorbed by the quadrifid hairs, and serves to nourish the plant.

HARDY AQUATICS. BRITISH.

U. intermedia. $\frac{1}{2}$. Yellow. Summer. Eng. Bot. ed. 3, t. 1127.

— *minor*. $\frac{1}{2}$ - $\frac{1}{3}$. Yellow. Summer. Eng. Bot. ed. 3, t. 1126.

— *neglecta*. $\frac{1}{2}$. Yellow. Late summer. England, Essex. Eng. Bot. ed. 3, t. 1125 bis.

— *vulgaris*. $\frac{1}{2}$ - $\frac{1}{3}$. Yellow. Summer. Eng. Bot. ed. 3, t. 1125.

STOVE.

U. bifida. Bright and orange yellow. September. India and China. 1882. B. M. t. 6689. Greenhouse.

— *Endre'sii*. $\frac{1}{2}$. Bluish. Costa Rica. 1874 B. M. t. 6656. Syn., *U. montana*, var. *rosea*.

— *Humboldtii*. Bluish-purple. Guiana. 1886. Fl. Ser. t. 1390.

— *montana*. $\frac{1}{2}$. White, yellow. July. South America. 1871. B. M. t. 6923. A beautiful plant.

U. monta'na ro'sea. See *U. Endresii*.
 — *renifo'rmis*. 2. Rose. Brazil. 1886. The largest species in cultivation.
 — *rhyterophylla*. Violet; palate yellow. 1889.

Uva'ria. (From *uva*, a cluster of grapes; the resemblance of the fruit. Nat. ord., *Anonaceæ*; Tribe, *Uvarieæ*.)

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 fibry peat. Winter temp., 55° to 60°; summer, 60° to 85°.

U. acumina'ta. 6. Guiana. 1820.
 — *aroma'tica*. 6. Guiana. 1820.
 — *escule'nta*. 10. Madras. 1818.
 — *fascicula'ta*. E. Indies. 1823.
 — *Ge'rtneri*. 6. E. Indies. 1820.
 — *K'rkii*. 4. Dull yellow. Zanzibar. 1870. B. M. t. 6006.
 — *lanco'la'ta*. A synonym of *Guatteria virgata*.
 — *longifo'ra*. Purple. E. Indies. 1833.
 — *longifo'ria*. 4. Bengal. 1820.
 — *lu'cida*. Africa. 1825.
 — *lu'tea*. 6. Greenish-yellow. E. Indies. 1822.
 — *Na'rum*. See *Unona Narum*.
 — *odora'ta*. E. Indies. 1804.
 — *tomento'sa*. 6. E. Indies. 1822.
 — *veluti'na*. 6. E. Indies. 1823.
 — *villo'sa*. E. Indies. 1831.
 — *zeyla'nica*. 20. Scarlet. Ceylon. 1794.

Uvula'ria. (Formerly used in diseases of the *uvula*. Nat. ord., *Liliaceæ*; Tribe, *Uvularieæ*.)

Hardy, North American, herbaceous perennials; yellow-flowered, except *grandifo'ra*. Division of the plant in spring; light, sandy loam.

U. amplexica'vis. B. M. t. 916. See *Streptopus distortus*.
 — *chine'nsis*. B. M. t. 916. See *Disporum pulum*.
 — *fla'va*. See *U. perfoliata*.
 — *grandifo'ra*. 1. Purple. May. 1802. B. M. t. 1112.
 — *lanco'la'ta*. See *U. perfoliata*.
 — *lanugin'o'sa*. B. M. t. 1490. See *Streptopus lanuginosus*.
 — *perfolia'ta*. 1. May. 1810. B. M. t. 955.
 — *pube'rula*. 1. May. 1824. B. C. t. 1260.
 — *ro'sea*. B. M. t. 1489. See *Streptopus roseus*.
 — *sessifo'lia*. ½. June. 1790. B. M. t. 1402.

V.

Vacc'inium. Whortleberry. (The derivation is doubtful, perhaps from *bacca*, a berry. Nat. ord., *Vacciniaceæ*; Tribe, *Euvaccinieæ*.)

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*, *meridona'le*, and *Rolliso'ni*, and all deciduous, and natives of North America, unless otherwise mentioned.

V. albifo'rum. White. May. 1833. B. M. t. 3423.
 — *ame'num*. B. R. t. 400. See *V. corymbosum*, var. *amœnum*.
 — *angusti'folium*. 2. Pale yellow. May. 1776.
 — *arbo'reum*. White, red. 1765. B. C. t. 1885.
 — *Syn.*, *V. diffusum*.
 — *Arctosta'phylos*. B. M. t. 974. See *V. maderense*.

V. brasili'e'nse. See *Gaylussacia pseudo-vaccinium*.
 — *buxifo'rum*. B. M. t. 928. A synonym of *Gaylussacia brachycera*.
 — *cæspito'sum*. ½. White. May. 1823.
 — *canade'nse*. 1. White, red. May. 1825. B. M. t. 3446.
 — *caracasa'num*. 6. White. July. Caraccas. 1825. Stove evergreen.
 — *corymbo'sum*. 7. White. May. 1765. B. M. t. 3433.
 — *ame'num*. *Syn.*, *V. amœnum*, B. R. t. 400.
 — *angusti'folium*. 3. White. 1767.
 — *fusca'tum*. 2. White, pink. June. 1770.
 — *virga'tum*. 3. White, red. April. 1767.
 — *crassifo'lium*. 1. White. June. 1787. *Andr. Rep. t. 105*.
 — *diffu'sum*. B. M. t. 1607. See *V. arboreum*.
 — *dumo'sum*. B. M. t. 1106. See *Gaylussacia dumosa*.
 — *elonga'tum*. 2. White. July. 1812. Wats. *Dendr. t. 125*.
 — *erythri'num*. 1½. Scarlet. Java. 1862. B. M. t. 4688.
 — *erythrocar'pum*. *Syn.*, *Oxycoccus erythrocarpus*.
 — *frondo'sum*. *Andr. Rep. t. 140*. See *Gaylussacia frondosa*.
 — *fusca'tum*. See *V. virgatum*.
 — *gale'zans*. 2. White. May. 1806.
 — *glabrum*. 2. Pink. July. 1812.
 — *grandifo'rum*. 2. White. July. 1812.
 — *humifu'sum*. ½. White. 1827.
 — *Imra'y'i*. St. Domingo. 1861. *IC. Pl. t. 292*.
 — *leuco'stomum*. 2. Scarlet, white. Peru. 1847. Greenhouse evergreen. *Fl. Ser. t. 332*.
 — *ligustri'num*. 3. Purple. May. *Syn.*, *Andromeda ligustrina*.
 — *macrocar'pum*. B. M. t. 2586. A synonym of *Oxycoccus macrocarpus*.
 — *mader'ense*. 6. Greenish-white. Madeira. 1777. *Syn.*, *V. Arctostaphylos*, B. M. t. 974.
 — *meridona'le*. 2. Red, white. April. Jamaica. 1778. Stove evergreen.
 — *minutifo'rum*. 2. White. 1812.
 — *Morti'nia*. 3. Rose-pink. Andes. 1884. B. M. t. 6872. Half-hardy.
 — *Myrsi'nes*. 1½. Purple. May. *Syn.*, *V. Sprengelii*.
 — *lanco'la'tum*. 1½. Purple. May.
 — *obtu'sum*. 1½. Purple. May.
 — *myrtillo'lium*. 1. White. June. 1812.
 — *myrtillo'ides*. 1½. Pink. June. 1776. B. M. t. 3447.
 — *Myrti'lus*. 1½. Pink. May. Britain. *Eng. Bot. ed. 3, t. 879*. Billberry.
 — *al'bis-ba'ccis*. Green. May. Britain.
 — *nitidum*. 1½. Pink. May. 1794. *Andr. Rep. t. 480*.
 — *decu'mbens*. ¾. Pink. May. 1794.
 — *ova'tum*. 2. Pink. May. N. W. America. 1826. B. C. t. 1605.
 — *Oxycoc'cus*. See *Oxycoccus palustris*.
 — *padifo'lium*. Pale green. July. Madeira. 1777.
 — *pa'llidum*. 2. White. May. 1774.
 — *parvifo'rum*. *Andr. Rep. t. 125*. A form of *Gaylussacia resinosa*.
 — *pennsylvan'icum*. 1½. White, blue. June. 1772. B. M. t. 3434.
 — *refle'sum*. 2. Red. January. Bolivia. 1869. B. M. t. 5781.
 — *resino'sum*. B. M. t. 1288. See *Gaylussacia resinosa*.
 — *Rolliso'ni*. 2. Scarlet. August. Java Mountains. 1851. Greenhouse. B. M. t. 4612.
 — *rug'o'sum*. A synonym of *Pentapterygium rugosum*.

- V. serpens*. Crimson. Himalayas. 1884.
 — *serratum*. 4. White. N. E. Bengal. 1859.
 Syn., *Epigynium leucobotrys*, B. M. t. 6103.
 — *Sprengelii*. See *V. Myrsinites*.
 — *stamineum*. 2. White. May. 1772. Andr. Rep. t. 263.
 — *album*. 2. White. Mexico.
 — *tenellum*. See *V. virgatum*, var. *tenellum*.
 — *uliginosum*. 2. Flesh. April. Britain. Eng. Bot. ed. 3, t. 878. Bleaberry.
 — *virgatum*. 3. Rose. North America. B. M. t. 3522. Syn., *V. fuscatum*.
 — *teneillum*. White. A dwarf variety. Syn., *V. tenellum*, Wats. Dendr. t. 35.
 — *Vitis laca*. 3. Pink. May. Britain. Evergreen. Eng. Bot. ed. 3, t. 877.

Vagaria. (Derivation not explained. Nat. ord., *Amarylloideæ*; Tribe, *Panocraticeæ*. Allied to *Eurycles*.)

- V. parviflora*. 1-2. Greenish-white. Autumn. Syria. 1815. Syn., *Paneratium parviflorum*. Red. Lil. t. 471.

Valdivia. (From the town of *Valdivia*, in Chili, near which it grows. Nat. ord., *Saxifragaceæ*; Tribe, *Escalonieæ*.)

Evergreen herbaceous perennial. Half-bardy. For cultivation, see TIARELLA.

- V. Gayana*. Rose. Chili. 1863.

Valeriana. Valerian. (Named after *Valerius*, who first used it in medicine. Nat. ord., *Valerianaceæ*.)

Hardy herbaceous perennials. Divisions of the root in spring, and seeds; common garden-soil; the tender sorts should have a dry place.

- V. alliariaefolia*. 1½. Red. June. Caucasus. 1826.
 — *angustifolia*. Sibth. Fl. Gr. t. 29. A synonym of *Centranthus angustifolius*.
 — *apula*. Red. June. Pyrenees. Syn., *V. globulariaefolia*.
 — *asarifolia*. 1. Red. June. Crete. 1824.
 — *ascitrapa*. Sibth. Fl. Gr. t. 30. A synonym of *Centranthus calcitrapa*.
 — *capeensis*. ½. Red. June. Cape of Good Hope. 1816.
 — *celtica*. 1. White. June. Switzerland. 1784.
 — *cornucopiae*. B. R. t. 155. See *Fedia cornucopiae*.
 — *dioica*. 1. Flesh. June. Britain. Eng. Bot. ed. 3, t. 668.
 — *elongata*. ½. Yellow. June. Austria. 1812.
 — *globulariaefolia*. See *V. apula*.
 — *intermedia*. 1. White. June. Pyrenees. 1818.
 — *montana*. 1. Light red. July. Switzerland. 1748. B. C. t. 317; B. M. t. 1825.
 — *napus*. White. Mexico. 1839.
 — *officinales*. 3. Flesh. June. Britain. Eng. Bot. ed. 3, t. 666.
 — *phur*. 3. White. August. Germany. 1597.
 — *aurora*. A form with golden-yellow young shoots.
 — *pyrenaica*. 3. Pink. August. Scotland.
 — *ruthenica*. B. M. t. 2325. See *Patrinia siberica*.
 — *sativica*. 1½. Red. June. France. 1824.
 — *sambucifolia*. 3. White. July. Germany. 1819.
 — *saxatilis*. ½. White. July. Austria. 1740.
 — *siberica*. B. M. t. 714. See *Patrinia heterophylla*.
 — *sisymbriifolia*. 1. Red. June. South Europe. 1820.

- V. supina*. ½. White, red. July. Switzerland. 1822.
 — *tripteris*. 1. White. May. Switzerland. 1762.
 — *tuberosa*. 1½. Light, red. June. South Europe. 1629.

Valeriane'lla. Lamb's Lettuce. (A diminutive of *Valerian*. Nat. ord., *Valerianaceæ*.)

Hardy annuals. Seeds in the open border, in spring. See CORN SALAD.

- V. congesta*. B. R. t. 1094. See *Plectritis congesta*.
 — *chinaica*. 1. Pink. July. South Europe. 1807.
 — *olitaria*. ½. Blue. April. Britain.

Valerian, Greek. *Polemonium ceruleum*.

Valerian, Long-spurred. *Centranthus macrocephalus*.

Valerian, Red. *Centranthus ruber*.

Valla'ris. (From *vallo*, to inclose; used for fences in Java. Nat. ord., *Apocynaceæ*; Tribe, *Echitideæ*.)

Stove evergreen twiner. Cuttings of short, firm, stubby side-shoots in sandy soil, under a glass, in heat, in May; sandy, fibry loam, and fibry peat. Winter temp., 55° to 60°; summer, 60° to 85°.

- V. pergularia*. 10. White. India. 1818. Ic. Pl. t. 153; Wight, Ic. t. 429.

Valle'sia. (Named after *F. Vallesio*, physician to Philip II. of Spain. Nat. ord., *Apocynaceæ*; Tribe, *Plumerieæ*.)

Stove, white-flowered evergreens. Cuttings of young shoots, getting firm, in sand, under a bell-glass in heat; sandy loam and fibry peat. Winter temp., 55° to 60°; summer, 60° to 85°.

- V. cymbæfolia*. 4. June. Mexico. 1821. Syn., *V. glabra*.
 — *dichotoma*. 8. May. Peru. 1822.
 — *glabra*. See *V. cymbæfolia*.

Vallisneria. (Named after *A. Vallisneri*, an Italian botanist. Nat. ord., *Hydrocharideæ*; Tribe, *Vallisnerieæ*.)

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. spiralis*. White. July. South Europe. 1818.

Vallonea Oak. *Quercus Ægilops*.

Vallo'ta. (Named after *P. Vallot*, a French botanist. Nat. ord., *Amarylloideæ*; Tribe, *Amarylloceæ*. Allied to *Cyrtanthus*.)

A cross-seedling, by its pollen, was obtained by Mr. Beaton from *Cyrtanthus obliquus*, which no one could distinguish from a *Vallo'ta* of the same age. Greenhouse, scarlet-flowered bulbs, from the Cape of Good Hope. Offsets; sandy loam and peat, and leaf-mould. Winter temp., 40° to 45°, and dry; summer, 60° to 75°.

- V. purpurea*. 1½. May. 1774. Syn., *Amarylloideæ purpurea*. B. M. t. 1430. Scarborough Lily.

- V. purpurea eximia*. Red, white, crimson. Flor. Mag. t. 225.
 — *magnifica*. A brightly coloured variety.
 — *major*. May, 1774.
 — *minor*. 1. May, 1774.

Vallora'dia. A synonym of *Ceratostigma*.

Vancouve'ria. (From *Fort Vancouver*, California. Nat. ord., *Berberidæ*; Tribe, *Berberæ*.)

Hardy herbaceous perennial

- V. hexandra*. 3. Lilac. May. North Amer. 1827. Syn., *Epimedium hexandrum*.

Va'nda. (The Sanskrit name of the first-found species. Nat. ord., *Orchidæ*; Tribe, *Vandæ-Sarcantheæ*.)

Stove orchids, grown in baskets. See ORCHIDS.

- V. alpi'na*. Pale green, yellowish, dull purple. Knasya. 1837. Syn., *Luisia alpina*.
 — *Amesia'na*. Creamy white, suffused with rose. India. 1837. Warn. Orch. Alb. t. 296.
 — *Bateman'ni*. B. R. 1846, t. 59. See *Stauroopsis Batemanii*.
 — *Benc'ni*. Green, with crimson dots. Rangoon. 1886. B. M. t. 5611.
 — *bi'color*. Yellowish, lilac. India. 1875.
 — *Boza'lii Cobbia'na*. Milk-white, purple. G. C. 1881, xvi. p. 780.
 — *Cathcartii*. A synonym of *Arachnanthe Cathcartii*.
 — *cæru'lea*. 3. Pale blue; lip darker. Autumn. Khasya. 1849. Fl. Ser. t. 609.
 — *grandifl'ora*. A variety with large flowers. Rev. Hort. 1881, p. 290.
 — *cærule'scens*. Lilac, blue. Burmah. 1869. B. M. t. 5834.
 — *Ecaz'lii*. White, lavender, violet. India. 1877. B. M. t. 6328.
 — *Lowia'na*. White, amethyst. India. 1877.
 — *Clarkei*. A synonym of *Arachnanthe Clarkei*. B. M. t. 7077.
 — *concolor*. 5. White with rosy dots, cinnamon. China. 1850. Syn., *V. Roxburghii*, var. *unicolor*. B. M. t. 3416.
 — *conge'sta*. Yellow, crimson. East Indies.
 — *crista'ta*. Yellowish-green, buff, purple. Summer. Nepal. 1818. B. M. t. 4304.
 — *crue'nta*. 2. Red. August. China. 1819.
 — *Cumi'ngii*. Brown, yellow. July. Philippines. 1837.
 — *Dea'rei*. Yellow. Sunda Islands. 1886.
 — *Denisonia'na*. White, orange. Burmah. 1862. B. M. t. 4304.
 — *hebrai'ca*. Sulphur, with darker marks resembling Hebrew letters, olive-green. July. Burmah. 1885. Warn. Orch. Alb. t. 248.
 — *puncta'ta*. Sulphur, brown, white. 1881.
 — *densifl'ora*. See *Saccolabium giganteum*.
 — *fu'rua*. Brown, white. December. China. 1844.
 — *fu'sco-viridis*. Brown, greenish-yellow. September. Paxt. Fl. Gard. ii. p. 20.
 — *giga'ntea*. B. M. t. 5189. See *Stauroopsis gigantea*.
 — *Gou'e'ra*. See *V. undulata*.
 — *Griff'ithii*. Yellow, brown. Bhotan.
 — *hasti'fera*. Pale yellow, blotched with red; lip white, brown, mauve. Sunda Islands. 1883.
 — *helvo'la*. Red, purple. March. Java. 1850.
 — *Hookeria'na*. White, rosy, magenta, purple. September. Berneo, 1882.

- V. insignis*. 2. Crimson, brown, white. February. Java. 1848. B. M. t. 5759.
 — *Schröderia'na*. Light yellow; lip pure white. Autumn. Malay Islands. 1883.
 — *Kimballia'na*. 1. White; lip rosy-purple. 1889.
 — *lamella'ta*. Pale yellow, reddish. August. Manila. 1837.
 — *Boza'lii*. Ochre, mauve, purple-lake. Philippines. 1880.
 — *superba*. White, claret - colour. 1888. Lind. t. 136. Syn., *V. superba*.
 — *limba'ta*. Brown, yellow, lilac. Java. 1875. B. M. t. 6173.
 — *Linde'ni*. Pale yellow, with red dots. Sunda Islands. 1886.
 — *lissochilo'i des.* See *Stauroopsis Batemanii*.
 — *longifo'lia*. 1½. Yellow, red, white. September. East Indies. 1847.
 — *Lo'wi*. A synonym of *Arachnanthe Lowii*.
 — *multifl'ora*. Lindl. Coll. t. 38. See *Acaemp multiflora*.
 — *Pari'shii*. Yellow, brown, white, violet. Burmah. 1870. Warn. Orch. Alb. t. 15.
 — *Mariottia'na*. Mauve, white. 1880. Warn. Orch. Alb. t. 61.
 — *purpurea*. Yellow, with brown spots, mauve-purple, white. G. C. 1883, xix. p. 307.
 — *parvifl'ora*. Pale yellow, white, purple. Summer. India. Syn., *V. testacea*. *Aërides testaceum* and *A. Wightianum*. B. M. t. 5188.
 — *pedunculat'ris*. July. Ceylon. 1840.
 — *recu'rva*. 1. Orange, brown. April. China. 1824. Hook. Ex. Fl. t. 187. Syn., *Sarcanthus rostratus*.
 — *Rozb'i'ghii*. 1½. White, purple. July. China. 1810. B. M. t. 2245.
 — *tessella'ta*. 1. White, purple. July. China. 1816. Syn., *V. Roxburghii*, var. *rubra*. Ill. Hort., new ser. t. 579.
 — *uni'color*. See *V. concolor*.
 — *Wrightia'na*. G. C. 1883, xx. p. 262.
 — *Sanderia'na*. Pink, buff, purplish-red. September. Philippine Islands. 1881. G. C. 1813, xx. p. 440; Warn. Orch. Alb. Orch. Alb. t. 124.
 — *alba'ta*. White, purple, yellow. G. C. 1887, ii. p. 9.
 — *labell'o viride*. Lip green. Mindanad. 1886. Lind. t. 4.
 — *Schröderia'na*. See *V. suavis*, var. *Schröderiana*.
 — *Stangea'na*. Purplish-brown, white, yellow, mauve. Assam. 1885. Rchb. Xen. ii. t. 102.
 — *sua'vis*. White, purple. September. Java. 1847. B. M. t. 5174.
 — *fl'ava*. Yellow, with brown spots. Syn., *V. tricolor* of B. M. t. 4432.
 — *Gottscha'dtchek*. White, rosy-purple. 1869.
 — *Linde'ni*. White, purple. 1886. Lind. t. 60.
 — *Schröderia'na*. Syn., *Vanda Schröderiana*. Gard. March 1st, 1891.
 — *superba*. See *V. lamellata*, var. *Bozallii superba*.
 — *tes'res*. White, rose, magenta, orange. Summer. Burmah. 1828. B. M. t. 4114.
 — *Anderso'ni*. A richly coloured variety. Warn. Sel. Orch. ser. 3, t. 2.
 — *aur'o'rea*. White, rosy, pale ochre. 1884.
 — *ca'ndida*. White.
 — *tretifo'lia*. B. R. t. 676. See *Sarcanthus trettifolius*.
 — *tessella'ta*. Paxt. Mag. vii. p. 265. See *V. Roxburghii*, var. *tessellata*.
 — *testa'cea*. See *V. parviflora*.
 — *tri'color*. Yellow, crimson, purple. Java. Warn. Orch. Alb. t. 77. *V. tricolor* of B. M. t. 4432 is *V. suavis*, var. *flava*.

- V. tri-color cinnamo'nea*. Yellow, brown. Java. 1869.
 — *Dodgso'ni*. Light amber, reddish-brown, violet-purple, white.
 — *insignis*. Light yellow, with crimson spots; lip pale lilac. Spring and autumn.
 — *Patero'ni*. Creamy-white, with cinnamon-brown spots; lip bright magenta. G. C. 1884, xxii. p. 237.
 — *planilabris*. Citron-yellow, with brown spots; lip rose, mauve and chocolate-purple. Warn. Orch. Alb. t. 87.
 — *Russelia'na*. A brightly coloured variety.
 — *Warneri*. Edged with deep rose; lip deep rosy-purple. Warn. Sel. Orch. ser. 2, t. 39.
 — *undulata*. White, greenish, orange. India. 1875. Syn., *V. Goweræ*.
 — *violacea*. B. R. 1847, t. 30. See *Saccolabium violaceum*.
 — *Vipa'ni*. White, brownish-purple, yellow. Burmah. 1882.

Vandellia. (Named after *L. Vandelli*, a Portuguese botanist. Nat. ord., *Scrophulariaceæ*; Tribe, *Gratiolacæ*. Syns., *Hornemannia* and *Tittmannia*. 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. crustacea*. Blue. June. India. 1816. Wight Ic. t. 863. Syn., *Hornemannia ovata*.
 — *difu'sa*. 1. White. July. Santa Cruz. 1824.
 — *hirsuta*. Blue. June. India. 1823. Syn., *Hornemannia viscosa*.
 — *Rozburghii*. Purple. July. Coromandel. 1818.

Vangueria. (*Voa-vanguer*, the name of *V. edulis* in Madagascar. Nat. ord., *Rubiaceæ*; Tribe, *Vangueriææ*. Allied to *Plectronia*.)

V. edulis produces a good dessert fruit. Stove evergreen. Cuttings of half-ripened shoots in sand, under a bell-glass; sandy peat and fibry loam. Winter temp., 50° to 55°; summer, 60° to 85°.

- V. edulis*. 10. White. Madagascar. 1809.
 — *velutina*. 3. Pale yellowish-green. May. Madagascar. 1829. B. M. t. 3014.

Vanilla. (A diminutive of *vaina*, the Spanish for *oreath*; shape of seed-pod. Nat. ord., *Orchidacæ*; Tribe, *Neotiaceæ-Vanilleæ*. Syn., *Myrobroma*.)

Stove orchids, grown on blocks; white-flowered, where not otherwise specified. (See ORCHIDS.) The Vanilla of commerce is, or should be, the dried fruit of *V. planifolia*.

- V. acutifolia*. Caraccas. 1841.
 — *africa'na*. Sierra Leone. 1843.
 — *aromatica*. 10. July. South Europe. 1739.
 — *bicolor*. Dull red. Guiana.
 — *claviculata*. Cuba. 1838.
 — *Humboldtii*. Comoro Islands. 1885. G. C. 1885, xxiii. p. 726.
 — *lute'scens*. Yellow. La Guayra. 1859.
 — *Phaleno'psis*. Bluish-white, rosy, orange. Madagascar. 1869.
 — *planifolia*. 10. May. W. Ind. 1800. Andr. Rep. t. 538.
 — *Pompo'na*. Mexico.

Vapourer Moth. *Orgy'ia*.

Variogated Laurel. *Aucuba*.

Vasco'a. (After *Vasco de Gama*, who in 1497 travelled to the Cape of Good Hope, where this genus grows. Nat. ord., *Leguminosæ*; Tribe, *Genistecæ*.) See *Rafnia*.

V. amplexicaulis. See *Rafnia amplexicaulis*.
 — *perfoliata*. See *Rafnia perfoliata*.

Vasconella. See *Carica*.

Vegetable Manures. See *Green Manures*, *Ashes*, and *Manures*.

Vegetable Marrow. *Cucurbita ovifera*.

Veitchia. (In honour of *Mr. Veitch*, the well-known proprietor of the Chelsea nurseries. Nat. ord., *Coniferæ*.)

Hardy evergreen. See PINUS.
V. japonica. Japan. This is some monstrous state of *Picea Alcockiana*.

The following species bearing the name of VEITCHIA are PALMS:

- V. canterburyana*. See *Hedyscepe canterburyana*.
 — *Johannis*. Polynesia. 1868. Syn., *Kentia Johannis*.
 — *Storckii*. 40. Fiji. Syns., *Kentia elegans* and *K. Storckii*.

Ve'lia. Cress Rocket. (From *velar*, the Celtic name of cress. Nat. ord., *Cruciferæ*; Tribe, *Brassicæ*.)

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. pseu-do-cytisus*. 3. Yellow. April. Spain. 1759. B. R. t. 293.

Velle'ia. (Named after *Major Velley*, who studied sea-weeds. Nat. ord., *Goodenovicæ*. Syn., *Euthales*.)

Greenhouse, yellow-flowered evergreens, from Australia. Division; sandy loam and peat. Winter temp., 35° to 45°.

- V. lanceolata*. 1841. A synonym of *Goodenia filiformis*.
 — *lyrata*. †. April. 1819. B. R. t. 561.
 — *macrophylla*. 3-4. May. 1839. Syn., *Euthales macrophylla*, B. R. 1841, t. 3.
 — *paradoxa*. †. July. 1824. B. R. t. 971.
 — *spathulata*. †. April. 1825.
 — *trinervis*. 1. July. 1803. Syns., *Euthales trinervis* and *Goodenia tenella*, Andr. t. 466.

Vello'zia. (Named after a Spanish botanist. Nat. ord., *Liliacæ*; Tribe, *Velloziææ*. Allied to *Barbaccenia*.)

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 fibry peat. Winter temp., 40° to 50°; summer, 60° to 80°.

- V. ca'ndida*. White. Brazil. 1865. B. M. t. 5514.
 — *e'legans*. White, turning green. Natal or Madagascar. 1866. B. M. t. 5803. Syns., *V. Talboti* and *Talbotia elegans*.

- V. retine'ris*. 12. Blue. Natal. 1877. Syn., *Xerophyta retinervis*, Gf. t. 908.
 — *squamata*. Orange-red. Summer. Organ Mountains, Brazil. 1841. Syn., *Barbarentia squamata*, B. M. t. 4136.
 — *Talboti*. See *V. elegans*.

Veltheimia. (Named after *F. A. Veltheim*, a German botanist. Nat. ord., *Liliaceæ*; Tribe, *Scilleæ*. 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. glauca*. 2. March. 1781. B. M. t. 1091.
 — *rubescens* *purpurea*. 1. Red, purple. July. 1854. B. M. t. 3456.
 — *intermedia*. 1½. April. 1800.
 — *speciosa* and *Uvaria* are synonyms of *Kniptophia Uvaria*.
 — *viridifolia*. 2. August. 1768. Syn., *Aletris capensis*, B. M. t. 501.

Vendium. (Derivation not stated, Nat. ord., *Compositæ*.)

V. calendulaeum is a half-hardy perennial. The others are hardy annuals. For culture, see *ARCOTIS*.

- V. calendulaeum*. 1-1. Ray yellow; disk nearly black. Summer. South Africa.
 — *fulgax*. 1½. Ray bright orange; disk blackish. South Africa. 1887. This is sometimes confused in gardens with *V. calendulaeum*.
 — *hirsutum*. 1. Ray bright orange; disk blackish. South Africa. 1887. Syn., *V. speciosum*.

Ventena'tia minor is a synonym of *Stylidium lineare*.

Ventila'go. (From *ventilo*, to be exposed to the wind. Nat. ord., *Rhamnææ*.)

Stove climbing shrub. For culture, see *BERCHEMIA*.

- V. madraspatana*. Green. June. India. 1822.

Ventilation. See *Greenhouse*.

Venus' Fly-trap. *Dionæa muscipula*.

Venus' Hair. *Adiantum capillus Venëris*.

Venus' Looking-glass. *Specularia speculum*.

Venus' Navelwort. *Omphalodes*.

Venus' Sumach. *Rhus cotinusa*.

Ve'pris. (From *vepres*, a thorn-bush. Nat. ord., *Rutacææ*.) See *Toddalia*.
V. lanceolata. See *Toddalia lanceolata*.

Vera'trum. (From *vere*, truly, and *ater*, black; colour of the roots. Nat. ord., *Liliacææ*; Tribe, *Veratracææ*.)

The plants in this genus are all poisons. Hardy herbaceous perennials. Seeds and divisions in spring; deep, rich loam.

- V. album*. 5. White. July. Europe. 1548. Red. Lil. t. 447.

- V. album Lobelia'num*. White. June. South Europe. 1818. Syn., *V. Lobelianum*.
 — *viride*. 5. Green. July. North America. 1742. Syn., *V. viride* and *Helonias viridis*, B. M. t. 1096.
 — *angustifolium*. A synonym of *Stenanthium angustifolium*.
 — *frigidum*. A synonym of *Stenanthium frigidum*.
 — *Lobelia'num*. See *V. album*, var. *Lobelianum*.
 — *Maackii*. 2. Dark purple. Summer. Eastern Siberia. 1888. Gf. t. 1070.
 — *nigrum*. 3. Dark purple. June. Siberia. 1596. B. M. t. 963.
 — *parviflorum*. 2. Green. June. Carolina. 1809. Syn., *Melanthium bracteolare*.
 — *Sabadilla*. A synonym of *Xerophyllum Sabadilla*.
 — *viride*. See *V. album*, var. *viride*.

Verba'scurn. Mullein. (From *barbascum*, bearded; the bearded stamens. Nat. ord., *Scrophulariacææ*; Tribe, *Verbascææ*.)

All yellow-flowered where not otherwise mentioned. All freely by seeds; perennials also by division of the roots in spring.

HARDY HERBACEOUS.

- V. æthiopicum*. May. Mount Sinai. 1825.
 — *alopecurus*. 3. July. France. 1820.
 — *aristiacum*. 5. July. Austria. 1818.
 — *betonicæfolium*. 2. July. Armenia. 1825.
 — *chryserium*. June. Palestine. 1827.
 — *collinum*. 3. July. Germany. 1820.
 — *cupreum*. 3. Brown. July. Caucasus. 1798. B. M. t. 1226.
 — *fasciculatum*. May. Mount Sinai. 1826.
 — *ferrugineum*. Andr. Rep. t. 162. See *V. phœniceum*.
 — *hyoserifolium*. June. Levant. 1829.
 — *lanatum*. 3. July. Italy. 1825.
 — *nigrum*. 2. July. England.
 — *orientale*. 2. July. Caucasus. 1821.
 — *ovatifolium*. 1. Tauria. 1804. B. M. t. 1037.
 — *phœniceum*. 3. Purple. July. South Europe. 1796. B. M. t. 885. Syn., *V. ferrugineum*.
 — *plieatum*. July. Greece. 1816. Sibth. Fl. Gr. t. 226.
 — *spinosum*. 1. Purple. July. Crete. 1824. Evergreen.
 — *thapsoides*. July. Portugal. 1819.
 — *triste*. 2. Yellow, red. July. South Europe. 1688.
 — *undulatum*. 3. July. South Europe. 1819.

HARDY BIENNIALS.

- V. auriculatum*. June. Levant. 1826. Sibth. Fl. Gr. t. 225.
 — *bannaticum*. July. Hungary. 1820.
 — *bipinnatifidum*. June. Tauria. 1813. B. M. t. 1777.
 — *Boerhaavi*. 2. July. South Europe. 1781. Annual.
 — *candidissimum*. 4. May. Naples. 1823.
 — *ceratophyllum*. June. Levant. 1829.
 — *Chai'zii*. 3. July. France. 1821.
 — *cuspidatum*. 4. May. Vienna. 1817.
 — *densiflorum*. January. Italy. 1825.
 — *formosum*. 2. July. Russia. 1818. B. R. t. 558.
 — *glabrum*. 2. July. Europe. 1805.
 — *gnaphalodes*. 2. July. Caucasus. 1825.
 — *gossypinum*. 4. July. Caucasus. 1820.
 — *grandiflorum*. 4. July. Europe. 1820.
 — *hæmorrhoidale*. 2. White, purple. July. Madeira. 1777. Greenhouse.
 — *indicum*. July. Nepal.
 — *leptostachyum*. 3. July. South France. 1825.
 — *longiflorum*. 3. July. Naples. 1824.
 — *lychnitis*. 3. July. Britain.

- V. lyratum*. 4. June. Spain. 1819.
 — *macranthum*. 3. July. Portugal. 1820.
 — *maja'le*. 3. July. Montpellier. 1817.
 — *monopessulanum*. June. South France. 1824.
 — *montanum*. 3. July. France. 1819.
 — *Mycosotis*. B. M. t. 236. See *Ramondia pyrenaica*.
 — *ni'veum*. 3. May. Naples. 1823.
 — *olympicum*. 5. Summer. Levant. 1833. Gfl. t. 1078.
 — *ovatum*. 3. July. Spain. 1824.
 — *pinnatifidum*. 1. July. Archipelago. 1788. Greenhouse. Sibth. Fl. Gr. t. 223.
 — *pulverulentum*. 3. July. England.
 — *pyramidalium*. 3. July. Caucasus. 1804. Swt. Fl. Gard. t. 31.
 — *repandum*. 3. July. Europe. 1813.
 — *rotundifolium*. 4. July. Italy. 1823.
 — *rubiginosum*. 4. Yellow, red. July. Hungary. 1817.
 — *rugosum*. June. South Europe. 1820.
 — *sinuatum*. 2. July. South Europe. 1570. Sibth. Fl. Gr. t. 227.
 — *spectabile*. 2. Yellow, purple. July. Tauria. 1820.
 — *Steve'ni*. 5. July. Siberia. 1821.
 — *tauricum*. 2. Yellow, purple. August. Tauria. 1839. B. M. t. 3799.
 — *thapsus*. 6. July. Britain. Eng. Bot. ed. 3, t. 937. Aaron's Rod.
 — — *elongatum*. July. Europe. 1813.
 — *versifolium*. 3. Purple. July. Bohemia. 1823.
 — *virgatum*. 5. August. Britain.

Verbe'na. Vervain. (From the Celtic *Ferfain*. Nat. ord., *Verbenaceae*.)

Annuals and biennials, by seed in a slight hot-bed 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 peat. In autumn they can scarcely be kept too cool. The smallest piece will form a better plant than a larger piece.

GREENHOUSE HERBACEOUS.

- V. alata*. 5. Rosy. August. Monte Video. 1823. Swt. Fl. Gard. ser. 2, t. 41.
 — *amœna*. 1. Pinkish-purple. July. Mexico. Paxt. Mag. vii., p. 3.
 — *Arraniana*. 1½. Purple. August. 1836.
 — *barbata*. 1. Pink. August. Mexico. 1826.
 — *chamædrifolia*. 1. Scarlet. August. Buenos Ayres. 1827. B. M. t. 3333. Syn., *V. Melindres*.
 — *diffusa*. 3. Blue. July. N. America. 1818.
 — *glandulosa*. 2. Pale. July. 1832.
 — *incisa*. 2. Red. August. Panama. 1836. B. M. t. 3628.
 — *Melindres*. B. R. t. 1184. See *V. chamædrifolia*.
 — *mutabilis*. Andr. Rep. t. 535. See *Stachylarpheta mutabilis*.
 — *pulchella*. 1. Purple. July. Buenos Ayres. 1827. Swt. Fl. Gard. t. 295.
 — *radicans*. ½. Lilac. July. Chili. 1832.
 — *sulphurea*. 1. Sulphur. July. Chili. 1832. B. R. t. 1748.
 — *teucroides*. 2. Purplish. July. Monte Video. 1837. B. M. t. 3694.
 — *triphyllo*. B. M. t. 367. See *Lippia citriodora*.
 — *Tweediana*. 1. Scarlet. August. Brazil. 1834. B. M. t. 3541.
 — *veno'sa*. 2½. Rosy. July. Buenos Ayres. 1830. B. M. t. 3127.
- HARDY ANNUALS AND BIENNIALS.
V. Aubletia. 1. Purple. August. N. America. 1774. Biennial. B. M. t. 308.

- V. bracteossa*. 1. Pink. July. Mexico. 1820. Biennial. B. M. t. 2910.
 — *cane'scens*. ½. Blue. July. Mexico. 1824.
 — *e'legans*. ½. Blue. July. Mexico. 1826. Biennial.
 — *lasiostachys*. 2. Purple. July. California. 1826. Biennial.
 — *litorea*. 3. Grey. July. S. America. 1832.
 — *multifida*. Blue. July. Peru. 1818.
 — *pinnatifida*. 4. Purple. July. N. America. 1810. Biennial.
 — *trifida*. 1. Purple. August. Mexico. 1818.

HARDY HERBACEOUS.

- V. Aubletia Drummondii*. 1½. Lilac. July. Texas. B. R. t. 1925.
 — *Drummondii*. See *V. Lamberti*, var. *rosea*.
 — *erinoides*. Swt. Fl. Gard. ser. 2, t. 347. See *V. multifida*.
 — *Lamberti*. 1½. Purple. July. S. America. B. M. t. 2200.
 — — *rosea*. 1½. Pink. July. Carolina. Swt. Fl. Gard. ser. 2, t. 363.
 — *multifida alba*. White. May. Chili. 1839.
 — *Sabi'ni*. ½. Purplish. July. Chili. 1834.
 — *officinale venosa*. Bluish. August. Oxford. 1837.
 — *polystachya*. 4. Red. July. Mexico. 1820.
 — *pulchella corolla-alba*. 1. Whitish. July. 1834.
 — *rugosa*. 2. Violet. July. Buenos Ayres. 1833. Swt. Fl. Gard. ser. 2, t. 318.
 — *scabra*. 4. Red. July. Mexico. 1825.
 — *sororia*. 2. Purple. July. Nepal. 1824. Swt. Fl. Gard. t. 202.

Verbena, Lemon, or Sweet-scented. *Lippia citriodora*.

Verbesi'na. (Altered from *Verbena*. Nat. ord., *Compositæ*; Tribe, *Helianthoides*.)

Stove or greenhouse, yellow-flowered, herbaceous perennials, from Mexico. Seeds and divisions of the root; rich, sandy loam.

- V. alata*. B. M. t. 1716. See *V. occidentalis*.
 — *atriplicifolia*. 3. July. 1823. Now known as MONTANOA ARBORESCENS.
 — *crocata*. 2. Summer. 1812. Syns., *Platypterus crocata* and *Montanoa crocata*. B. M. t. 1627. Stove.
 — *encelioides*. 2. August. 1785. Syn., *Ximenesia encelioides*.
 — *helianthoides*. 3. South America. 1825. Syn., *Actinomeris helianthoides*.
 — *occidentalis*. 3. July. South America. 1803. Syns., *V. occidentalis* and *Actinomeris alata*.
 — *pinnatifida*. 3. August. 1826. Jacq. H. Schoenh. t. 305.
 — *salsicifolia*. 2. July. 1825.
 — *sativa*. B. M. t. 1017. See *Veslingia sativa*.
 — *virginica*. 2. White. August. North America. 1812. Hardy.

Vere'ia. (Derivation doubtful. Nat. ord., *Crassulaceæ*.) See **Kalanchoe**, where it has been erroneously spelt **Vareia**.

- V. acutiflora*. Andr. Rep. t. 560. See *Kalanchoe acutiflora*.
 — *crenata*. Andr. Rep. t. 21. See *Kalanchoe crenata*.

Verge-cutter. A tool with a semi-circular blade fixed on a long handle for cutting the edges of turf around flower-beds, or walks.

Vernal Grass, Sweet-scented.
Anthoxanthum odoratum.

Vernonia. (Named after W. Ver-
non, a botanical traveller. Nat. ord.,
Compositæ; Tribe, *Vernoniaceæ*.)

All purple-flowered where not otherwise men-
tioned. Hardy, by seeds and divisions; tender,
by seeds, divisions, and cuttings under a hand-
light; rich, sandy loam; stove treatment.

STOVE EVERGREENS, ETC.

- V. acutifolia*. 4. December. S. America. B.
M. t. 3062.
— *anthelmintica*. Lilac. August. E. Indies.
1770. Biennial. Syn., *Ascaricida anthel-
mintica*.
— *arborescens*. 5. November. Jamaica. 1733.
— *aspera*. White. June. E. Indies. 1823.
— *axilliflora*. 1½. Lilac. September. Bahia.
B. R. t. 1464.
— *Calvoana*. 8-12. White and purple. Ja-
nuary. Cameroon Mountains. 1862.
B. M. t. 5698.

- *centriflora*. See *V. scorpiodes*.
— *cinerea*. July. E. Indies. Biennial.
— *flavosa*. 1½. September. Brazil. 1823. B.
M. t. 2477.
— *fruticosa*. 4. October. W. Indies. 1818.
— *linearis*. 1. October. S. America. 1825.
Annual.
— *odoratissima*. 4. October. Caraccas. 1817.
— *pinifolia*. 2. Summer. South Africa. 1863.
Syn., *Webbia pinifolia*. B. M. t. 6412.
Greenhouse perennial.
— *scorpioides*. 1. Lilac-rose. Brazil. 1826.
Syn., *V. centriflora*.
— *sericea*. 5. December. Brazil. 1825. B. R.
t. 522.

HARDY HERBACEOUS.

- V. altissima*. 12. October. Ohio. 1820.
— *angustifolia*. 4. September. N. America.
1817.
— *glauca*. 4. July. N. America. 1710.
— *novboracensis*. 6. August. N. America.
1710.
— *oligophylla*. September. N. America. 1710.
— *pandurata*. 4. October. 1825.
— *pratensis*. 8. October. N. America. 1732.
— *scaberrima*. 4. October. N. America.
1824.
— *serratifolia*. September. Mexico. 1824.
— *teres*. July. Nepal. 1821.

Veronica. Speedwell. (The mean-
ing is doubtful. Nat. ord., *Scrophu-
lariaceæ*; Tribe, *Digitalææ*.)

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°.

GREENHOUSE HERBACEOUS, ETC.

- V. Anderssonii*. 3. Purple. September. A
garden hybrid. Fl. Ser. t. 658. There is
a variegated form.
— *Colemanii*. New Zealand.
— *cretica*. ½. May. Crete. 1819.
— *decussata*. 1. July. Falkland Isles. 1776.
Evergreen. B. M. t. 242.
— *Derventica*. 3. Pale blue or white. June.
Australia. 1802. Syn. *V. labiata*. B.
M. t. 1660 and t. 8461.
— *dianthifolia*. ½. May. N. Holland. 1823.
— *distans*. 1. April. N. Holland. 1825.
— *elliptica*. White. May. New Zealand.
1852.
— *formosa*. 3. White. April. Van Diemen's
Land. 1835. Evergreen. B. M.
t. 4512

- V. gracilis*. 1. May. N. S. Wales. 1820.
— *Hulkeana*. Lilac. New Zealand. 1865. B.
M. t. 5484.
— *labiata*. B. M. t. 1660 and t. 3461. See *V.
Derventica*.
— *Lindleyana*. White. September. New
Zealand. 1843. Evergreen. Paxt. Mag.
xii., p. 247.
— *nevæ*. White. May. Van Diemen's Land.
1840. Evergreen. Ic. Pl. t. 640.
— *parviflora*. 1. May. New Zealand. 1822.
Evergreen.
— — *angustifolia*. Lilac. New Zealand.
1822.
— *perfoliata*. 1. August. N. S. Wales. 1815.
B. R. t. 1930.
— *plebeia*. 1. June. N. Holland. 1820.
— *salsifolia*. 3. White. July. New Zea-
land. 1843. Evergreen. B. R. 1846,
t. 5.
— *speciosa*. 2. Van Diemen's Land. 1835.
Evergreen. B. M. t. 4075.
— — *imperialis*. Purple-red. New Zealand.
1877.
— *syriaca*. ½. Blue. June. Syria. 1857.

HARDY ANNUALS.

- V. ceratocarpa*. March. Caucasus. 1835.
— *didyma*. All seasons. Naples. 1827.
— *poliata*. ½. March. Britain.

HARDY AQUATICS.

- V. anagalloides*. Calabria. 1836.
— *caroliniana*. 1. June. Carolina. 1821.
— *parvularia*. 1. Red. July. Austria.
1824.
— *scutellata*. 2. Flesh. May. Britain.

HARDY HERBACEOUS, ETC.

- V. abrotanifolia*. 2. August. Siberia. 1830.
— *acutifolia*. 1. Red. May. France. 1821.
— *Allionii*. ½. May. South Europe. 1740.
Evergreen.
— *alpina*. ½. May. Europe. Eng. Bot. ed. 3,
t. 980.
— — *heterophylla*. ½. May. Europe.
— — *integrifolia*. ½. May. Silesia. 1814.
— — *obtusifolia*. ½. July. Scotland.
— — *pusilla*. ½. August. Piedmont. 1819.
— — *rotundifolia*. ½. May. Europe. 1816.
— — *Wormskid latii*. A large-leaved variety.
1819. B. M. t. 2975.
— *aphylla*. ½. May. Italy. 1775.
— *arguta*. 3. July. South Europe. 1812.
— *Armstrongii*. 1-3. White. New Zealand.
1888.
— *austriaca*. 1½. August. South Europe
1812.
— *austriaca*. 1. July. Austria. 1748.
— *azurea*. 3. May. 1821.
— *Baumgartenii*. May. Transylvania. 1826.
— *bellidiodes*. ½. May. Switzerland. 1775.
— *brachyphylla*. July. 1822.
— *brevifolia*. 1. May. 1822.
— *carneola*. White; anthers reddish-yellow.
Summer. New Zealand. See also *V.
pinguifolia*.
— *caucasica*. 1. Pale red. June. Caucasus.
1816. B. C. t. 1369.
— — *latifolia*. ½. Pale red. June. Caucasus.
1820.
— *chamaedrys*. ½. June. Britain. Eng. Bot.
ed. 3, t. 986.
— — *lamiifolia*. August. 1825.
— — *variegata*. ½. August.
— *Clusii*. ½. August. Hungary. 1822.
— *complicata*. 2. September. Europe. 1812.
— *crassifolia*. 2½. Violet. May. Europe.
1822.
— *crenulata*. 1½. August. South Europe.
1814.
— *crinita*. 1. July. Hungary. 1822.
— *crispata*. 2. June.
— *cupressoides*. ½-4. Violet. New Zealand.

- V. cupressoides varia'bilis*. New Zealand. G. C. 1888, iii. p. 20, figs. 5 and 7. Syn., *V. salicornioides*.
- *decu'bens*. White. New Zealand. 1888.
- *denta'ta*. 1. May. Europe. 1818.
- *depau'pera'ta*. 3. June. Hungary. 1823.
- *diosma'eo'lia*. Lilac. July. Van Diemen's Land. 1835.
- *ela'tior*. 7. August. South Europe. 1808.
- *e'legans*. 2. Pink. May. South France. 1822.
- *exalta'ta*. 4. June. Siberia. 1816.
- *filifo'rmis*. 3. May. Levant. 1780.
- *folio'sa*. 3. August. Hungary. 1805.
- *fruticul'o'sa*. 1. Flesh. July. Scotland. Evergreen.
- *gentianifo'lia*. 1½. May. Levant. 1748.
- *gentianoi'des*. 2. Violet. June. Levant. 1748. B. M. t. 1002.
- *gla'bra*. 4. August. South Europe. 1804.
- *a'liba*. 4. White. August.
- *Godefroya'na*. 3. White. New Zealand. 1888.
- *gra'ndis*. 1½. White. August. Siberia. 1826.
- *Hecto'ri*. 1½-2. Pink, white. New Zealand. 1888.
- *hy'brida*. 1. June. England.
- *inca'na*. 2. May. Russia. 1759.
- *inci'sa*. 2. July. Siberia. 1739. B. C. t. 1397.
- *Jacqui'ni*. 1. May. Austria. 1748.
- *lacinia'ta*. 2. July. Siberia. 1780.
- *latifo'lia*. 1. White, blue. May. Austria. 1748. Swt. Fl. Gard. t. 23.
- *leuca'ntha*. 2. White. July. Siberia. 1817.
- *linaria'eo'lia*. August. Siberia. 1822.
- *loganio'i'des*. 1. White, pink. New Zealand. 1888.
- *longibractea'ta*. 1. May. 1817.
- *latifo'lia*. 1½. July. 1818.
- *longifo'ra*. 1. Lilac. June. 1824.
- *longifo'ra*. 3. August. South Europe. 1781.
- *abbrevia'ta*. May. 1823.
- *a'liba*. 3. White. August.
- *incarna'ta*. 3. Flesh. August.
- *latifo'lia*. June. Crimea. 1821.
- *subsessilis*. 2-4. Blue. July. Japan. 1878.
- *Lya'libi*. 1. White. May. New Zealand. 1880. B. M. t. 6456.
- *maritima*. 2. August. Sweden. 1570.
- *variega'ta*. 1½. July.
- *me'dia*. 3. August. Germany. 1804.
- *melanco'lica*. 1. June. 1820.
- *melisso'eo'lia*. 1. May. 1826.
- *mentha'eo'lia*. 1. August. Austria. 1823.
- *Meyeri*. July. Dauria. 1837.
- *Michra'zii*. 1. July. 1834.
- *Micra'ntha*. 1½. White. May. Portugal. 1810.
- *microphy'lla*. 1. June. Hungary. 1822.
- *Mulleria'na*. 1. June. Syria. 1825.
- *multi'fida*. 1. June. Siberia. 1748. B. M. t. 1679.
- *negle'cta*. 1½. July. Siberia. 1797. Swt. Fl. Gard. t. 55.
- *ni'tens*. 2. July. Europe. 1817.
- *falca'ta*. June. 1820.
- *ni'tida*. 2. July. Europe. 1817.
- *nummular'ia*. 1. June. Pyrenees. 1820.
- *officina'lis*. 1. June. Britain. Eng. Bot. ed. 3, tt. 984-985.
- *orch'i'dea*. 1. August. Europe. 1819. B. M. t. 2210.
- *orienta'lis*. 1. July. Levant. 1748. B. C. t. 419.
- *pa'llida*. 1. May. Tauria. 1821.
- *panicula'ta*. 1½. June. Russia. 1797.
- *pectina'ta*. 1. May. Italy. 1819.
- *peduncul'a'ris*. 1. March. Caucasus. 1826.
- V. persicifo'lia*. 2. August. 1823.
- *patra'a*. 1. May. Caucasus. 1821.
- *pilo'sa*. 1½. July. Bohemia. 1819.
- *pinguifo'lia*. White. June. New Zealand. 1870. Syn., *V. carnosula* of B. M. t. 6147 and t. 6587.
- *pinna'ta*. 1. May. Siberia. 1776.
- *pinna'tifida*. 1. June. 1817.
- *pliea'ta*. 2. June. Bohemia. 1817.
- *polysta'chya*. 2. July. 1817.
- *Po'nae*. 1. September. Pyrenees. 1822.
- *prae'ita*. 4. August. 1817.
- *prae'cox*. 1. June. South Europe. 1775.
- *prostra'ta*. 1. May. Germany. 1774. B. M. t. 3683.
- *satureia'eo'lia*. 1. July. South Europe.
- *re'pens*. White. September. Europe. 1829.
- *ruth'e'nica*. 2. April. Russia. 1821.
- *salicornio'i'des*. See *V. cupressoides*, var. *variabilis*.
- *saxa'tilis*. 1. June. Scotland. Eng. Bot. ed. 3, t. 981.
- *Schmi'dtii*. 1. June. Bohemia. 1820.
- *serpyllifo'lia*. 1. May. Britain.
- *humif'u'sa*. 1. May. Europe.
- *negle'cta*. 1. May. Britain.
- *quaterna'ta*. 1. May. Europe.
- *tene'lla*. 1. May. Europe.
- *seti'gera*. 1. May. Scotland.
- *sibi'rica*. 3. July. Dauria. 1779.
- *spica'ta*. 1. August. England.
- *spu'ria*. 2. August. Siberia. 1731.
- *Stephania'na*. 1. June. Persia. 1821.
- *stoloni'fera*. June.
- *tau'rica*. 1. June. Siberia. 1820. B. C. t. 911.
- *tene'lla*. 1. May. France. 1820.
- *tenuifo'lia*. 1. June. Pyrenees. 1821.
- *Teu'crium*. 2. July. Germany. 1596. B. C. t. 425.
- *ticine'nis*. August. Ticin. 1819.
- *Tournefortii*. 1. May. France. 1824.
- *Trave'rsii*. 2. White. Summer. New Zealand. 1873. B. M. t. 6390.
- *trichocarpa*. 1. June. Levant. 1821.
- *villo'sa*. 1½. August. South Europe. 1824.
- *virgi'nica*. 5. White. July. Virginia. 1714.
- *incarna'ta*. 5. Flesh. July. Virginia. 1714.
- *Wormskio'ldii*. See *V. alpina*, var. *Wormskio'ldii*.

Versailles Laurel. *Pru'nus Lauroce'rasus latifo'lia*.

Verschaffe'tia. (Named in honour of *M. A. Verschaffelt*, who introduced the first known species. Nat. ord., *Palmæ*; Tribe, *Areceæ*. Syn., *Regelia*.) Stove palm. For cultivation, see PHENIX.

V. melanoche'tes. 12-25. Seychelles. 1871.

— *spe'ndida*. 80. Seychelles. 1864. Syns., *Regelia magnifica*, *R. majestica*, and *R. princeps*.

Vertico'rdia. (Derivation not given. Nat. ord., *Myrtaceæ*; Tribe, *Chamaelaucieæ*.)

Greenhouse evergreens, from Australia. Cuttings of young shoots in sand, under a bell-glass, in April or May; fibry loam and sandy peat. Winter temp., 35° to 45°.

V. acer'o'sa. Yellow. April. 1842.

— *Bro'wnii*. 1. White. April. 1826.

— *densifo'ra*. White. June.

— *Fontane'sii*. 1. White. April. 1826.

— *helia'ntha*. Yellow. May.

— *ins'gnis*. Pink. April. 1839.

- V. nitens*. 3. Golden-yellow. W. Australia. 1862. Syn., *Chrysorrhoe nitens*. B. M. t. 5286.
 — *pennigera*. Lilac. April. 1841.
 — *serrata*. Yellow. May. 1841. Syn., *Chrysorrhoe serrata*.
 — *setigera*. Lilac. May.

Vervain. *Verbe'na*.

Vervain, Bastard. *Stachytarpheta*.

Vervain Sage. *Salvia Verbena'ca*.

Vesica'ria. (From *vesica*, a bladder, or blister; inflated seed-pods. Nat. ord., *Cruciferae*; Tribe, *Alyssineae*. Allied to *Aubrietia*.)

All yellow-flowered. Seeds, division, and cuttings of the young shoots under a hand-light; common soil.

- HARDY ANNUALS.
V. gracilis. June. Texas. 1834. B. M. t. 3533.
 — *grandiflora*. July. Texas. 1835. B. M. t. 3464.
 — *sinuata*. A synonym of *Alyssum sinuatum*.

- HARDY EVERGREENS.
V. arotica. 1. August. N. Amer. 1828. B. M. t. 2882.
 — *arenosa*. 1. August. N. Amer. 1826.
 — *cretica*. A synonym of *Alyssum creticum*.
 — *Ludoviciana*. June. Louisiana. 1825. Herbaceous.
 — *reticulata*. 1. May. South Europe. 1700. Herbaceous.
 — *utriculata*. 1. May. Levant. 1730.

Vesli'ngia. (After *John Vesting*, 1598-1649, Professor of Botany at Padua. Nat. ord., *Compositae*; Tribe, *Helianthodeae*.)

Stove, annual herb.

- V. sativa*. 6. Yellow. August. Tropical Africa. 1806. Syns., *Guizotia oleifera* and *Verbesina sativa*. B. M. t. 1017.

Vespu'ccia. (After *Amerigo Vespucci*, 1451-1512. Nat. ord., *Alismaceae*.) Now referred to *Hydrocleis*.

Stove, aquatic herb.

- V. Humboldtii*. Yellow. May. Tropical America. This is now known as *HYDROCLEIS COMMERSONI*.

Vestia. (Named after *Dr. Vest*, a German. Nat. ord., *Solanaceae*; Tribe, *Cestrineae*. 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. lycioides*. 3. Yellow. June. Chili. 1815. B. M. t. 2412; B. R. t. 299.

Vetch. *Vi'cia*.

Vetch, Bastard or Bladder. *Phaca*.

Vetch, Bitter. *O'robus*.

Vetch, Chickling. *La'thyrus sativus*.

Vetch, Crown. *Coronilla*.

Vetch, Liquorice. *Astragalus glycyphyllos*.

Vetch, Medick. *Onobrychis*.

Vetch, Milk. *Astragalus*.

Vibor'gia. (Named after *E. Viborg*, a Danish botanist. Nat. ord., *Leguminosae*; Tribe, *Genisteae*. Allied to *Aspalanthus*.)

Greenhouse yellow-flowered evergreens, from South Africa. Cuttings of young shoots in sandy soil, under a glass, in May; sandy loam and fibry peat. Winter temp., 40° to 50°.

- V. obcordata*. 2. July.
 — *sericea*. 3. July. 1810.

Vibu'num. (From *vicio*, to tie; use of flexible shoots. Nat. ord., *Caprifoliaceae*; Tribe, *Sambuceae*.)

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. monogynum*. Java.
 — *rugosum*. 4. May. Canaries. 1796. B. M. t. 2082.
 — *suspensum*. White, yellow. February. 1853.
 — *tinoides*. 4. S. Amer. 1820. Stove.
 — *tomentosum*. 6. Japan.
 — *villosum*. 6. Jamaica. 1824.

HARDY EVERGREENS.

- V. Awafuki*. Japan. 1841.
 — *cassinoides*. 3. June. N. Amer. 1761.
 — *laevigatum*. 10. May. N. Amer. 1724.
 — *Mulla'ha*. Himalayas.
 — *pygmaea*. 11. Himalayas. 1841.
 — *sinese*. China. 1841.
 — *Tinus*. 5. July. South Europe. 1595. B. M. t. 38. *Laurus-Tinus*.
 — *hirtum*. 5. July. South Europe.
 — *lucidum*. 10. August. Algiers.
 — *lucidum variegatum*. 10. August.
 — *strictum*. 6. August. South Europe.
 — *strictum variegatum*. 6. August. South Europe.
 — *virgatum*. 6. August. Italy.

HARDY DECIDUOUS.

- V. acerifolium*. 4. June. N. Amer. 1736. Wats. Dendr. t. 118.
 — *cotinifolium*. 10. June. Himalaya. 1830. B. R. t. 1650.
 — *dahuricum*. 2. June. Dahuria. 1785.
 — *dentalium*. 5. June. N. Amer. 1763. Wats. Dendr. t. 25.
 — *dilatatum*. 10. White. June. Japan. 1845. Syn., *V. plicatum*, var. *dilatatum*.
 — *edule*. 12. May. N. Amer. 1812.
 — *Lanta'na*. 10. May. Britain.
 — *foliis-variegatis*. 10. May.
 — *grandifolium*. 10. June.
 — *lantanoides*. 5. June. N. Amer. B. C. t. 1570.
 — *lenta'go*. 8. July. Spain. 1761.
 — *subpedunculatum*. A variety with short flower-stalks. 1889.
 — *macrocephalum*. 20. China. 1844. B. R. 1847. t. 43.
 — *Keteleeri*. This is supposed to be the wild type. 1863.
 — *molle*. 6. May. N. Amer. 1812.
 — *nitidum*. 2. June. N. Amer. 1758.
 — *nudum*. 8. June. N. Amer. 1752. B. M. t. 2281.
 — *squamatum*. 6. July. N. Amer. 1822.
 — *obovatum*. 2. April. N. Amer. 1812. B. C. t. 1476.

- V. obovatum punctifolium*. 2. May. N. Amer. 1812.
 — *odoratissimum*. 2. May. China. 1818. B. R. t. 456.
 — *O'pulus*. 10. July. Britain. Eng. Bot. ed. 3, t. 639.
 — *fo'lis-variegat'is*. June.
 — *na'num*. 4.
 — *sterile*. July.
 — *orientale*. 5-8. White. Caucasus. 1868.
 — *tomentosum*. White. Japan. 1868.
 — *Oxyoc'cus*. 12. June. N. Amer. B. C. t. 1123.
 — *mo'llis*. 10. July. N. Amer. 1841.
 — *subintegri'folium*. 10. July. Columbia.
 — *pauciflorum*. Eastern United States. Gard. and For. iii. p. 4, fig. 1.
 — *plicat'um*. 10. May. China. 1846. B. R. 1847, t. 51.
 — *prunifolium*. 8. May. N. Amer. 1731. Wats. Dendr. t. 23.
 — *pubescens*. 3. June. N. Amer. 1736.
 — *pyrifolium*. 6. June. N. Amer. 1812. Wats. Dendr. t. 22.
 — *Sandanke'wa*. 6. White. Japan. 1875.
 — *Siebo'dii*. Japan.
 — *stellatum*. North America. 1839.
 — *Vette'ri*. A garden hybrid between *V. Lentago* and *V. nudum*. 1839.

Vicia. Vetch. (From *vincio*, to bind; referring to the tendrils clasping. Nat. ord., *Leguminosæ*; Tribe, *Vicieæ*. Syns., *Ervum* and *Faba*.)

Purple-flowered climbers, unless otherwise mentioned. Annuals, seeds; perennials, seeds and divisions; good garden-soil.

HARDY ANNUALS.

- V. atro-purpurea*. 3. June. Algiers. 1815. B. R. t. 871.
 — *bie'nnis*. 2. August. Siberia. 1753.
 — *calcear'ta*. 2. Red, blue. July. Barbary. 1790.
 — *Fa'ba*. 3. White. July. Egypt. Syn., *Faba vulgaris*. Broad Bean.
 — *equi'na*. 3. Purple. July.
 — *glabra*. 2. July. Switzerland. 1819.
 — *grandiflora*. 1. Yellow. July. South Europe. 1818.
 — *hirsuta*. 1½. Yellow. July. Siberia. 1819.
 — *hybrida*. 1½. Yellow. July. England. Jacq. Vind. t. 146.
 — *longifolia*. 2. Cream. July. Syria. 1818.
 — *narbone'nsis*. 3. July. France. 1690.
 — *Nissolia'na*. 3. July. Levant. 1773.
 — *Nusqu'nez*. 1½. July. Europe. 1818.
 — *panno'nica*. 1½. White. June. Hungary. 1836.
 — *peregrina*. 1½. July. South Europe. 1779.
 — *psed' do-cra'cea*. 2. Yellow. June. South Europe. 1820.
 — *punctata*. July. Switzerland. 1819.
 — *sativ'a*. 3. May. Britain.
 — *serratifolia*. 3. June. Hungary. 1723.
 — *stria'ta*. 1½. July. Tauria. 1723.
 — *syr'aca*. 2. June. Syria. 1816.
 — *Thou'ini*. 2. June. Europe. 1800.
 — *trichoc'lyz*. White. June. Sardinia. 1836.
 — *triflora*. 2. July. Italy. 1820.
 — *villo'sa*. 3. June. Germany. 1815.

HARDY HERBACEOUS.

- V. abbreviata*. 2. Pale blue. June. Caucasus. 1813.
 — *attis'sima*. 3. Pale blue. August. Barbary. 1820.
 — *america'na*. 3. White. June. N. Amer. 1800.
 — *ame'na*. 2. June. Siberia. 1818.
 — *argentea*. 1. Pink. June. Pyrenees. 1827. B. M. t. 2946.

- V. bithynica*. July. Britain. Jacq. Vind. t. 147.
 — *Bivo'nii*. Rose. July. Sicily. 1828.
 — *cape'nsis*. 1. July. Cape of Good Hope. 1802.
 — *carolinia'na*. 2. White. June. Carolina. 1820.
 — *casu'bica*. 3. Light blue. July. Germany. 1711.
 — *cra'cea*. 2. July. Britain. Eng. Bot. ed. 3, t. 385.
 — *floribus-al'bis*. 2. White. July.
 — *floribus-ru'bris*. 2. Red. July.
 — *Dennesia'na*. Blue, changing to fawn. Azores. B. M. t. 6967.
 — *denta'ta*. 4. July. Siberia. 1819.
 — *dumetorum*. 3. July. France. 1752.
 — *Gera'di*. 2. July. South Europe. 1810.
 — *levigata*. 1½. Pale yellow. May. England.
 — *onobrychio'ides*. 1. June. South Europe. 1759. B. M. t. 2206.
 — *oroboi'des*. 2. Blue. June. Siberia. 1758. Syn., *Orobus lathyroides*. B. M. t. 2098.
 — *pellu'cida*. 1. July. Cape of Good Hope. 1773. Greenhouse.
 — *pere'nnis*. 3. June. South Europe.
 — *pisiflor'mis*. 2. Cream. July. Austria. 1739.
 — *polyphy'lla*. 2. July. Algiers. 1816. Sibth. Fl. Gr. t. 699.
 — *pyrena'ica*. 1. May. Pyrenees. 1818.
 — *si'cula*. Purple. May. 1827. Syns., *Orobus atro-purpureus*, B. R. t. 1763, and *O. Fischeri*.
 — *tenuifolia*. 1½. July. Germany. 1799. B. M. t. 2141.
 — *variegata*. 3. June. Caucasus. 1816.

GREENHOUSE SHRUB.

- V. galegifolia*. Andr. Rep. t. 319. A synonym of *Suaresonia galegifolia*.

Vicia Fa'ba, or Broad Bean. There are many varieties of this vegetable; but we shall only name those which are clearly distinct and valuable.

Early Mazagan.—This is from two to four feet high, and has seeds rather larger than horse-beans. Sow in spring, and the beans will be fit for table in about ten weeks. There are many varieties.

Long-Pod.—Sandwich, or Lisbon, has various names attached to these. Seeds whitish, about an inch long, and half that in width, flat. Very productive; good for maiu summer-crops. Sown in spring, about twelve weeks elapse before the beans are fit for table. Three to five feet high.

Johnson's Wonderful.—This is a long-pod, but even more productive; and we consider it the best of all the varieties. Pods very numerous; many with six or even eight beans in them, and bearing a succession of pods; seeds rather more broad in proportion to length.

Dutch Long-Pod has seeds still broader in proportion to length.

Green Long-Pod.—Nonpareil, or Genoa, differs chiefly from other long-pods by its seeds being green.

Toker has white, broad, oval seeds. Height, five feet. Sown in spring, its

beans are ready in twelve weeks ; rather coarse-flavoured.

Windsor.—Seeds whitish, flat, circular, an inch in diameter; only two or three in a pod. Produces a succession of pods. Four feet high. Many other names prefixed.

Green Windsor differs chiefly from the preceding in the colour of its seed.

The Red-Seeded, White-Blossomed, Red-Blossomed, and some others, have no merits equal to the preceding. The *Fan*, not being more than one foot high, is useful, in small gardens, to grow among other crops; but it is not productive, and its beans come all at once.

Other sorts are:—*Monarch Long-Pod*, *Marshall's Early Prolific*, *Taylor's Windsor Leviathan*, *Seville Giant Long-Pod*, *Beck's Dwarf Green Gem*, *Green Long-Pod*, *Mammoth Long-Pod*. These are all distinct and first-class varieties.

Soil and Situation.—The soil should vary with the season. For the winter-planting and early crops, a moderately rich and dry soil is best adapted to them, since, if too moist, the seed is apt to decay; whilst a cool-bottomed, more tenacious soil is best for the spring and summer sowings. The situation cannot be too unshaded; but a protection from violent winds is very beneficial.

Times and Modes of Sowing.—For the first production, in the following year, a large sowing of Long-pods may be made during the middle of November; and sowings may be continued to be made, from the beginning of January to the end of June, once every two or three weeks. Not later than the 1st of July a last sowing may be made. The *Early Mazagan* is best for the earliest and latest plantings, to produce the same year. When two to three inches high ridges should be drawn up on either side of the rows, which will facilitate covering during frosty weather. Bracken or other light litter will answer for a covering.

Sowing for Transplantation.—If the season has been lost for sowing at proper time, in the natural soil, for the early crops, or ground could not be spared or made ready, then sow for transplanting, either in small pots, turf-sods, or gentle hotbed, and of such extent as can be covered with a frame. If frames and hand-glasses are deficient, matting or litter, kept from injuring the plants by means of hooping, etc., is sometimes employed. Care must be taken that the beans are not weakened by a deficiency of air and light; to guard against it the lights should be taken entirely off every

day that excessive wet or cold does not forbid their removal. The usual time for removing them into the open ground, in a south border, is February, in mild and open weather.

Sowing to remain.—When sown to remain, the seed may be inserted in double rows, in drills, drawn by the hoe, from two and a half to three feet apart, from double row to double row, the double rows four inches apart, and two deep. Previous to sowing, in summer, if dry weather, the seed should be soaked for two or three hours in water; or, if sown in drills, these should be well watered immediately before the insertion.

When advanced to a height of three to four inches, earth up as recommended for the early crops. This should be often repeated. As soon as the various crops come into full blossom, two or three inches length of each stem is broken off. This, by preventing its increase in height, causes more sap to be afforded to the blossom, consequently causing it to advance with more rapidity, and to set more abundantly.

For Seed.—None of the pods ought to be gathered for the table from those plants intended for seed, the after-production never being so fine, and the plants raised from them are always deficient in vigour. They are fit for harvesting when the leaves have become blackish, which occurs at the end of August, or early in September. The pods may be gathered from the stems when ripe enough, and spread out thin, upon a dry, airy, boarded floor, to dry. Those only should be preserved that are fine and perfect. They are best stored in the pods until required. Seed-beans will sometimes vegetate after being kept for eight or ten years, but are seldom good for anything when more than two years old.

Insects.—See *Aphis fabæ*.

Victoria. (Named after Her Majesty *Queen Victoria*. Nat. ord., *Nymphaeaceæ*; Tribe, *Nymphaeæ*. Alliance near *Euryale* and *Nymphaea*.)

Stove herbaceous aquatic. Generally by seeds, sown in strong peat, and planted out in a reservoir of heated water as soon as germinated. From the size of the leaves, the tank must be twenty-five 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.

V. regia. Rosy-white. Autumn. River Amazon. 1836. B. M. tt. 4275-8. A description of this plant, accompanied by magnificent plates, was published by Sir William Hooker.

Victorian Hazel. *Pomaderris apetalæ*.

Vieusesu'xia. (Named after *M. Vieusesseux*, a Swiss botanist. Nat. ord., *Iridææ*; Tribe, *Moræææ*.) See *Moræa*.

Bulbs, from South Africa, requiring the same treatment as *IXIAS*.

- V. Bellend'ni.* See *Moræa tricuspis*, var. *Bellend'ni*.
 — *glauco'psis.* See *Moræa edulis*, var. *glauco'psis*.
 — *iridioi'des.* Red. Lil. t. 340. A synonym of *Moræa Candolleana*.
 — *lurida.* See *Moræa lurida*.
 — *spirali's.* See *Moræa unguicularis*.
 — *tenuis.* See *Moræa tenuis*.
 — *tricu'spis.* See *Moræa tricuspis*.
 — *tripetaloi'des.* See *Moræa tripetala*.
 — *unguicula'ris.* See *Moræa unguicularis*.
 — *villosa.* See *Moræa villosa*.

Vigna. (Named after *D. Vigni*, a commentator on Theophrastus. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*. Allied to *Dolichos*.)

Hardy, or half-hardy, yellow-flowered, climbing annuals. Seeds in a slight nothed in March, and afterwards planted out in the beginning of May, or sown in the end of April in sandy, light soil.

- V. Burchellii.* Purple. Summer. South Africa. 1816. Syn., *Otoptera Burchellii*. Greenhouse.
 — *Ca'tjang.* Yellow or red. July. East Indies. 1776. Syns., *Dolichos sesquipedatis*, *D. sinensis*, B. M. t. 2232, *D. tranquebaricus* and *D. unguiculatus*.
 — *glabra.* Yellow. July. Southern United States. 1685. Syn., *Dolichos luteolus*. Jacq. Vind. t. 90.

Viguie'ra. (Named after *L. G. A. Viguier*, a French botanist. Nat. ord., *Compositæ*; Tribe, *Helianthoidææ*. 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 fibry loam. Winter temp., 50° to 55°; summer, 60° to 75°.

- V. dentata.* 3. July. Mexico. 1826.
 — *helianthoi'des.* 3. July. Cuba. 1825.
 — *linearis.* 2. Yellow. September. Mexico. 1823. Syn., *Helianthus linearis*. B. B. t. 523. Half-hardy.
 — *prostrata.* July. N. Amer. 1800. Hardy.
 — *rigida.* G. C. 1881, xvi. p. 396. See *Helianthus rigidus*.

Villami'llia. (Derivation uncertain. Nat. ord., *Phytolaccææ*; Tribe, *Riviniææ*.)

Stove evergreen. For culture, see *RIVINA*.
V. octandra. 2. White. May. West Indies. 1752. Syn., *Rivina octandra*.

Villano'va. (After *T. M. Villanova*, 1757-1802, Professor of Botany at Valencia. Nat. ord., *Compositæ*; Tribe, *Helenioidææ*. Allied to *Palafoxia*.)

Hardy annual. Seeds in the open border in April.

- V. chrysanthemoi'des.* 1 to 2. Yellow. Colorado. September. 1878.

Villare'sia. (In honour of *M. Villarez*, a Spaniard. Nat. ord., *Olacinææ*; Tribe, *Icacinææ*.)

Stove shrub. For cultivation, see *MONETIA*.
V. mucronata. White. September. Chili.

Villa'rsia. (Named after *Villars*, a French botanist. Nat. ord., *Gentianeææ*; Tribe, *Menyantheææ*.)

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 stove or greenhouse treatment. The hardest like the protection of the latter, though they may stand frequently in the open air.

HERBACEOUS PERENNIALS.

- V. Cris'ta-galli.* See *Menyanthes Cris'ta-galli*.
 — *geminata.* June. Australia. 1828. A synonym of *Limnanthemum geminatum*.
 — *sarmento'sum.* 1. June. Australia. 1806. Syn., *Limnanthemum sarmentosum*. B. M. t. 1328.
 — *Simsii.* July. Nepaul. 1792.

HERBACEOUS AQUATICS.

- V. capita'ta.* 1. W. Australia. 1879. Bog plant. B. M. t. 6420.
 — *chile'nsis.* 1. June. Chili. 1832. B. C. t. 1994.
 — *cordata.* See *Limnanthemum nymphæoides*.
 — *indica.* See *Limnanthemum nymphæoides*.
 — *lacunosa.* 2. White. June. N. America. 1812. A synonym of *Limnanthemum lacunosum*.
 — *nymphæoi'des.* See *Limnanthemum nymphæoides*.
 — *ovata.* June. South Africa. 1786. Syns., *Menyanthes ovata*, B. M. t. 1909, and *M. capensis*.
 — *parmassi'folia.* 2. August. New S. Wales. 1825. Syns., *Menyanthes exaltata*. B. M. t. 1029, and *M. excelsa*.
 — *renifo'rnis.* 1. July. Australia. 1820. B. R. t. 1533.

Vilmori'nia. (Named after *M. Vilmorin*, a celebrated French nurseryman. Nat. ord., *Leguminosææ*; Tribe, *Galegeææ*.)

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 fibry loam. Winter temp., 55° to 60°; summer, 60° to 85°.

- V. multiflora.* 6. Purple. Domingo. 1826. Syn., *Citioria multiflora*.

Vimina'ria. Rush Broom. (From *vimen*, a twig; the twiggy, leafless branches. Nat. ord., *Leguminosææ*; Tribe, *Podalyriææ*. Allied to *Daviesia*.)

Greenhouse, yellow-flowered evergreens, 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. denudata.* 3. August. 1780. B. M. t. 1190.
 — *laterifo'ra.* 3. July. 1824.

Vi'ncæ. Periwinkle. (From *vinculum*, a band; the tough, long shoots. Nat. ord., *Apocynæææ*; Tribe, *Plumieriææ*.)

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. acutiflora*. See *V. media*.
 — *herba cea*. 1½. Purple. June. Hungary. 1816. B. M. t. 2002.
 — *major*. 2. Purple. August. England. Eng. Bot. ed. 3, t. 905.
 — — *elegantissima*. Leaves blotched with creamy-white.
 — — *variegata*. 2. Blue. July. England.
 — *media*. 1. Blue. August. Mediterranean region. Syn., *V. acutiflora*.
 — *minor*. 1. Blue. August. Britain. Eng. Bot. ed. 3, t. 906.
 — *ocellata*. 1. White, red. June. E. Ind. Stove.
 — *pustulata*. ½. Blue. August. Tranquebar. 1778. Stove annual.
 — *rosea*. 1. Rose-coloured. May. E. Ind. 1778. Stove. B. M. t. 248.
 — — *alba*. 1. White. June. E. Ind. Stove.
 — *variegata*. Blue. April.

Vincetoxicum. (From *vincere*, to conquer, and *toxicon*, poison; supposed to be an antidote. Nat. ord., *Asclepiadaceæ*.)

Hardy perennials. For culture, see CYNANCHUM.

- V. acutum*. White. July. South Europe. 1596. Twiner.
 — *fuscatum*. 3. Yellow. July. South Europe. 1817. Syn., *Cynanchum minus*.
 — *japonicum*. White. Summer. Japan.
 — *medium*. 3. White. May. Eastern Europe.
 — *nigrum*. 3. Brown. July. South Europe. 1596. Syn., *Cynanchum nigrum*. B. M. t. 2390.
 — *officinale*. 3. White. May. Europe. 1596. Syn., *Cynanchum Vincetoxicum*.
 — *pilosum*. White. July. South Africa. 1726. Syn., *Cynanchum pilosum*. B. R. t. 111. Greenhouse.
 — *purpurascens*. Dull purple. Japan. 1850.

Vine. *Vitis vinifera*. See Grape Vine.

Vine Bower. *Clematis viticella*.

Vine Leek. *Allium ampeloprasum*.

Vine Maple. *Acer circinatum*.

Violet. The Violet. (The Latin name. Nat. ord., *Violaceæ*; Tribe, *Violeæ*.)

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. arboreascens*. 1½. May. Spain. 1779.
 — *betonicaefolia*. ½. August. Australia. 1820.
 — *cæspitosa*. ½. Violet. March. Nepal. 1825.
 — *decumbens*. ½. June. Cape of Good Hope. 1819.
 — *hederaea*. ½. July. N. Holland. 1823. B. C. t. 1133. Syn., *Erpetion hederaceum*.
 — *humilis*. ½. White. May. Mexico. 1824.
 — *palmaris*. 1. Purple. May. South Europe. 1836. Kn. and West. t. 86.
 — *pedunculata*. ½. Yellow. May. California. 1856. B. M. t. 5004.
 — *pygmaea*. ½. August. Peru. 1822.
 — *reniformis*. ½. July. N. Holland. 1823.

HARDY PERENNIALS.

- V. affinis*. April. N. Amer. 1802.
 — *allegahaniensis*. ½. May. N. Amer. 1824.
 — *alpina*. ½. Purple. June. Austria. 1823.
 — *altaica*. ½. Dark purple. May. Siberia. 1808. B. M. t. 1776.
 — — *purpurea*. ½. Purple. May. Siberia. 1810.
 — *ambigua*. ½. May. Hungary. 1823.
 — *amœna*. ½. Purple. June. Scotland.
 — *arenaria*. June. Britain. Eng. Bot. ed. 3, t. 174 bis.
 — *asarifolia*. ½. May. N. Amer. 1820.
 — *aspera*. ½. Pale yellow. May. Nepal. 1824.
 — *attenuata*. ½. White. July. N. Amer. 1759.
 — *bannatica*. ½. Yellow, purple. August. Germany. 1820. Annual.
 — *bicolor*. ½. White. May. N. Amer. 1818. Annual.
 — *bistorta*. ½. Yellow. June. Alps, Europe. 1752. B. M. t. 2089.
 — *blanda*. ½. White. May. N. America. 1803.
 — *calcarata*. ½. May. Switzerland. 1752.
 — — *albiflora*. White. Gf. t. 1028.
 — — *Halleri*. Violet.
 — *campestri*. ½. Purple. April. Tauria. 1824.
 — *canadensis*. ½. White. May. N. Amer. 1783. Swt. F. Gard. ser. 2, t. 62.
 — — *dicolor*. ½. Blue, white. June. N. Amer. 1783.
 — *canina*. ½. May. Britain. Dog Violet.
 — *cenisia*. ½. June. Mount Cenis. 1759.
 — *clandestina*. ½. Brown. April. Pennsylvania. 1800.
 — *collina*. ½. May. Poland. 1822.
 — *concolor*. 1. Green. June. N. Amer. 1788. Linn. Trans. vi. t. 28.
 — *cornuta*. ½. May. Pyrenees. 1776. B. M. t. 791.
 — *cucullata*. ½. May. N. Amer. 1762. B. M. t. 1795.
 — — *variegata*. Violet, white. 1880.
 — *dactyloides*. ½. May. Siberia. 1820.
 — *debitis*. ½. April. N. Amer. 1820. *B. C. t. 1378.
 — *declinata*. ½. June. Pannonia. 1818.
 — *digitata*. ½. June. Virginia.
 — *dissecta*. Violet. Altaia.
 — *emarginata*. May. N. Amer.
 — *epipsela*. ½. Yellow. Livonia. 1822.
 — *eriocarpa*. ½. Yellow. June. N. Amer. 1823. Swt. Fl. Gard. t. 102.
 — *flabellifolia*. ½. June. N. Amer. 1823. B. C. t. 777.
 — *flavicornis*. ½. Yellow, blue. June. Britain.
 — *glabella*. Yellow. March. California. 1884.
 — *glauca*. ½. May. Poland. 1822.
 — *Gmeliniana*. ½. May. Siberia. 1820.
 — *gracilis*. ½. Purple. June. Greece. 1817. Sibth. Fl. Gr. t. 222.
 — *grandiflora*. ½. Yellow. July. Switzerland.
 — *hastata*. ½. Yellow. May. Carolina. 1823.
 — *hirsuta*. ½. May. Bohemia. 1820.
 — *hirta*. ½. Greyish. May. England. Eng. Bot. ed. 3, t. 172.
 — *japonica*. ½. May. Japan. 1818.
 — *Kitabehiana*. Yellow. April. Switzerland. 1824. Annual.
 — *Krokei*. ½. Pale red. May. Siberia. 1820.
 — *laetca*. ½. Crimson. May. England. Eng. Bot. ed. 3, t. 176.
 — *lanceolata*. ½. White. June. N. Amer. 1759. B. C. t. 211.
 — *Langsdorffii*. ½. June. Siberia. 1823.
 — *litorea*. June. Baltic.
 — *lutea*. ½. Yellow. June. Britain.

- V. mira bilis*. $\frac{1}{2}$. July. Germany. 1732.
 — *montana*. 1. May. Alps. 1683. B. M. t. 1595.
 — *stricta*. Cream. May. England. 1819.
 — *Munbyana*. $\frac{1}{2}$. Violet. Spring.
 — *luttea*. Yellow.
 — *neglecta*. $\frac{1}{2}$. Yellow. Crimea. 1817.
 — *nummularifolia*. $1\frac{1}{2}$. May. South France. 1820.
 — *Nutta lili*. $\frac{1}{2}$. Yellow. May. Missouri. 1812.
 — *obliqua*. $\frac{1}{2}$. Yellow, blue. May. N. Amer. 1762.
 — *ochroleuca*. $\frac{1}{2}$. Cream. May. N. Amer. 1800.
 — *occulata*. $\frac{1}{2}$. Veiny. June. 1832. Annual.
 — *odorata*. $\frac{1}{2}$. Purple. June. Britain. Eng. Bot. ed. 3, t. 171. Sweet Violet.
 — *albida*. $\frac{1}{2}$. White. April. Britain.
 — *paludosa pleina*. Pale lavender. Double-flowered. Neapolitan violet.
 — *oreades*. $\frac{1}{2}$. Purple. June. Tauria. 1818.
 — *ovata*. $\frac{1}{2}$. May. N. Amer. 1783.
 — *palmaris*. $\frac{1}{2}$. Yellow. June. Nepal. 1824.
 — *palmaria*. $\frac{1}{2}$. May. N. Amer. 1752. B. M. t. 535.
 — *variegata*. $\frac{1}{2}$. Purple, white. June. N. Amer.
 — *pachystris*. $\frac{1}{2}$. May. Britain. Eng. Bot. ed. 3, t. 170.
 — *pennsylvanica*. $\frac{1}{2}$. June. N. Amer.
 — *papilionacea*. $\frac{1}{2}$. May. N. Amer. 1800.
 — *Patrinii*. June. Siberia. 1822.
 — *pedata*. $\frac{1}{2}$. May. N. Amer. 1759. B. M. t. 89.
 — *flabellata*. $\frac{1}{2}$. May. Georgia.
 — *ranunculifolia*. $\frac{1}{2}$. Whitish. June. N. Amer. 1818.
 — *pedatifida*. $\frac{1}{2}$. June. N. Amer. 1826.
 — *pennsylvanica*. Yellow. June. 1772.
 — *persicifolia*. 1. Cream. June. Germany. 1817.
 — *pinata*. $\frac{1}{2}$. Violet. June. South Europe. 1752.
 — *præmorsa*. $\frac{1}{2}$. Yellow. May. Columbia. 1823. B. R. t. 1254.
 — *primulæfolia*. $\frac{1}{2}$. June. Carolina. 1783.
 — *prostrata*. $\frac{1}{2}$. Cream. June. Teneriffe. 1824.
 — *pube scens*. $\frac{1}{2}$. Yellow. June. N. Amer. 1772. Swt. Fl. Gard. t. 223.
 — *pumila*. $\frac{1}{2}$. May. France. 1818.
 — *ericetorum*. May. Germany. 1826.
 — *lancifolia*. May. Germany.
 — *pyrenaica*. $\frac{1}{2}$. May. Pyrenees. 1817.
 — *pyrolæfolia*. $\frac{1}{2}$. Yellow. January. Patagonia. 1851. Fl. Ser. t. 665.
 — *radicans*. $\frac{1}{2}$. June. Carolina. 1823.
 — *rothomagensis*. $\frac{1}{2}$. July. France. 1781. B. M. t. 1498.
 — *rotundifolia*. $\frac{1}{2}$. Pale yellow. May. N. Amer. 1800.
 — *Ru'ppii*. $\frac{1}{2}$. May. Italy. 1822. B. C. t. 686.
 — *sagittata*. $\frac{1}{2}$. White, blue. July. N. Amer. 1775. B. C. t. 1471.
 — *sarmentosa*. $\frac{1}{2}$. June. Caucasus. 1824.
 — *Schmidtiana*. $\frac{1}{2}$. May. Austria. 1821.
 — *Selkirkii*. $\frac{1}{2}$. June. N. Amer. 1822.
 — *striata*. $\frac{1}{2}$. Striped. June. N. Amer. 1772.
 — *sudavis*. $\frac{1}{2}$. June. Ukraine. 1823. Swt. Fl. Gard. ser. 2, t. 126.
 — *sudetica*. $\frac{1}{2}$. Yellow. Germany. 1805.
 — *sylobatica*. Lilac. March. Britain.
 — *sylvestris*. $\frac{1}{2}$. May. Hungary. 1826.
 — *tricolor*. $\frac{1}{2}$. Yellow, purple. August. Britain. Eng. Bot. ed. 3, t. 178. Heartsease; Pansy.
 — *arvensis*. $\frac{1}{2}$. Yellow, purple. June. Britain.
 — *elegans*. $\frac{1}{2}$. Veiny. Summer. Altai. 1832.

- V. tricolor hirta*. June. Pannonia. 1820.
 — *tripartita*. $\frac{1}{2}$. Yellow. June. N. Amer. 1823.
 — *uliginosa*. $\frac{1}{2}$. Purple. April. Carinthia. 1823.
 — *umbrosa*. Lilac, purple. Russia. 1873.
 — *uniflora*. $\frac{1}{2}$. Yellow. June. Siberia. 1774.
 — *valde'ria*. $\frac{1}{2}$. Purple. May. Mount Cenis. 1759.
 — *variegata*. $\frac{1}{2}$. Pale violet. May. Dahuria. 1817. Gf. t. 20.
 — *Villarsiana*. $\frac{1}{2}$. June. Vallesia.
 — *Zoysei*. $\frac{1}{2}$. Yellow. August. Carinthia.

Violet Forcing.—To obtain *Neapolitan Violets* in winter, select a warm, sheltered corner; cast out trenches a foot deep and five feet wide into the alleys, and make a turf wall all round to the desired height, for holding about fifteen or eighteen inches of leaves, rubbish-heap refuse, or any fermenting materials likely to afford a little bottom-heat, upon which place about eight or nine inches of rich, open soil. The width regulate by any lights to be spared for a time, or thatched hurdles, or other protectors. Take the plants, up from the store plantation carefully, with balls of earth to their roots, and plant from ten to twelve inches apart each way, first clearing them of any side-shoots or suckers; afterwards keep clear of dead leaves, etc., 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 October 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 October; 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. *Vi'ola.*

Violet, Adder's. *Goodye'ra pube'scens.*

Violet, Bog. *Pingu'cula.*

Violet, Cape. *Ioni'dium cape'nse.*

Violet, Corn. *Specula'ria hy'brida.*

Violet, Dame's. *He'speris matro'nalis.*

Violet, Dog. *Vi'ola cani'na.*

Violet, Dog's Tooth. *Erythro'nium de'ns-ca'nas.*

Violet, False. *Ru'bus Daliba'rdis.*

Violet, Foreign. *Schweigge'ra.*

Violet, Fringed. *Thysano'tus.*

Violet Fungi. *Æci'dium depau'perans* and *Æ. Vi'olæ.* Violets are often attacked by a Fungus which appears in yellow patches on their leaves. This is the *Æ. Vi'olæ*, and if these patches are magnified they will be found to be composed of minute cups (cluster-cups) filled with spores. *Æ. depau'perans* is much less common, and differs in having the cluster-cups solitary, and not collected in patches as in *Æ. Vi'olæ*. Both species greatly injure the Violet plants, by destroying their leaves and dwarfing their growth. The Fungus should be destroyed by burning the infected plants on its first appearance, to prevent its spreading.

Violet, Mercury's. *Campa'nula Me'dium.*

Violet, Spurless. *Vi'ola heder'a'cea.*

Violet, Tongue. *Schweigge'ra.*

Violet, Water. *Hotto'nia palu'stris.*

Viper Gourd. *Trichosa'nthes angui'na.*

Viper's Bugloss. *E'chium.*

Viper's Grass. *Scorzone'ra hispa'nica.*

Vire'ya. (After *Jul. Jos. Virey*, 1775-1846, a Pharmacist in Paris. Nat. ord., *Ericaceæ*; Tribe, *Rhodoreæ*.) A synonym of *Rhododendron*. *V. retu'sa.* A synonym of *Rhododendron retusum*.

Virgi'lia. (Named after *Virgil*, the Roman poet. Nat. ord., *Leguminosæ*; Tribe, *Sophoreæ*. Allied to *Sophora*.)

Greenhouse, yellow-flowered evergreens, from South Africa, where not otherwise specified. Cuttings of half-ripened shoots in sand, under a glass, in April; sandy loam and fibry peat. *V. lu'tea* is generally propagated by layers in spring and autumn.

V. au'rea. 6. July. Abyssinia. 1777.

— *capen'sis.* 2. Purple, white. July. 1767. B. M. t. 1590.

— *helioi'des.* A synonym of *Gaillardia pulchella*. (Nat. ord., COMPOSITÆ.)

— *intru'sa.* 8. July. 1790. B. M. t. 2617.

Syn., *Calpurnia intrusa*.

— *lu'tea.* See *Cladrastis tinctoria*.

— *robinioi'des.* 8. August. 1818. Syn., *Calpurnia robinioi'des*.

— *sylva'tica.* 4. August. 1816. Syn., *Calpurnia sylvatica*.

Virginian Cowslip. *Merte'nsia virgi'nica.*

Virginian Creeper. *Ampelo'psis quinquefo'lia.*

Virginian Date Palm. *Diospy'ros virgini'a'na.*

Virginian Poke. *Phytola'cea de-ca'ndra.*

Virginian Silk. *Periplo'ca gra'ca.*

Virginian Stock. *Malco'mia mari'tima.*

Virgin's Bower. *Cle'matis.*

Viro'la. (From the Guianese name. Nat. ord., *Myristicaceæ*.) A synonym of *Myristica*.

V. seb'fera. A synonym of *Myristica seb'fera*.

Visca'ria. Rock Lychnis. (From *viscus*, bird-lime; the glutinous stems. Nat. ord., *Caryophyllaceæ*; Tribe, *Sileneæ*.) See *Lychnis*.

Seeds in open border, in April; or in a sheltered dry place in September; perennials by seeds and divisions; dry garden-soil.

V. a'ba. See *Lychnis neglecta*.

— *albi'ra.* A form of *Lychnis Viscaria*.

— *alpi'na.* See *Lychnis alpina*.

— *ce'li-ro'sa.* See *Lychnis celi-rosa*.

— *helve'tica.* See *Lychnis helvetica*.

— *negle'ta.* See *Lychnis neglecta*.

— *ocula'ta.* B. R. 1843, t. 53. A synonym of *Lychnis aspera*.

— *vulga'ris.* See *Lychnis Viscaria*.

Viscum. Mistletoe. (From *viscus*, bird-lime; the berries contain a viscid matter like bird-lime. Nat. ord., *Loranthaceæ*; Tribe, *Visceæ*.)

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. albu'm. 2. Green. May. England. Eng. Bot. ed. 3, t. 635.

Vis'mia. (Named after *M. Visme*, a Lisbon merchant. Nat. ord., *Hypericaceæ*; Tribe, *Vismiceæ*.)

Stove, yellow-flowered evergreens. Cuttings of firmish side-shoots in sand, in May, under a bell-glass, and placed in bottom-heat; sandy

peat, fhry loam, and a little rough charcoal. Winter temp., 50° to 55°; summer, 60° to 35°.

V. braziliensis. 8. August. Brazil. 1824.

— *glabra*. 10. Red. July. S. Amer. 1824. B. C. t. 1752.

— *guianensis*. 8. August. Guiana. 1824.

— *sessilifolia*. May. Guiana. 1826.

Vísnea. (Said to be after a Lisbon merchant named *Visne*. Nat. ord., *Ternströmiaceæ*.)

Greenhouse, evergreen tree.

V. mocanera. Whitish. March. Canary Islands. 1815. Ic. Pl. t. 253.

Vítex. Chaste-tree. (From *vicio*, to bind; the flexible branches. Nat. ord., *Verbenaceæ*; Tribe, *Viticeæ*.)

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-castus. 6. White, blue. Sicily. 1570. Sibth. Fl. Gr. t. 609.

— *atifolia*. 6. White, blue. September. Sicily. 1570.

STOVE EVERGREENS.

V. alata. 10. September. E. Ind. 1820.

— *altissima*. 8. Ceylon. 1810. Wight, Ic. t. 1466.

— *arbo'ra*. 30.

— *bicolor*. See *V. Negundo*.

— *bignonioides*. Blue. Caraccas. 1826.

— *capitata*. Blue. June. Trinidad. 1822.

— *Donia'na*. Sierra Leone. 1824.

— *giga'ntea*. Guayaquil. 1826.

— *heterophylla*. Blue. E. Ind. 1820.

— *ilicifolia*. Summer. West Indies.

— *incisa*. See *V. Negundo*, var. *incisa*.

— *latifolia*. Blue. July. E. Ind. 1820.

— *leucopylon*. 4. Ceylon. 1793. Wight, Ic. t. 1467.

— *Linde'ni*. Lilac, red. May. Columbia. 1872. B. M. t. 6230.

— *Negu'ndo*. 4. India. 1812. Syn., *V. bicolor*.

— *incisa*. 4. August. China. 1758. Syn., *V. Negundo* of B. M. t. 364.

— *ovata*. 4. July. China. 1796.

— *salt'gna*. Blue. July. E. Ind. 1823.

— *triflora*. 6. Cayenne. 1819.

— *trifolia*. 4. E. Ind. 1759.

— *variegata*. Violet-purple; leaves white-edged. Polynesia. 1876.

— *umbrosa*. 30. Jamaica. 1823.

Vítis. The Vine. (From the Celtic *swyd*, pronounced *vid*, best of trees. Nat. ord., *Ampelideæ*.)

Greenhouse or hardy deciduous climbers, all but one green-flowered. Few are worth growing except *vinifera* and its varieties; the other species are viewed chiefly in this country as botanical curiosities. 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.

Many of the species enumerated below are cultivated under the names of CISSUS and AMPELOPSIS, which are synonyms of VITIS.

V. acuminata. Eastern Asia. 1890.

— *æstivalis*. 20. May. North America. 1656. American Summer Grape.

— *albo-nitens*. Brazil. 1871. Syn., *Cissus albinitens*. Stove.

V. amazonica. Leaves silver-veined, red beneath. Amazon. 1866. Syn., *Cissus amazonica*. Stove.

— *antarctica*. July. Australia. 1790. Syn., *Cissus antarctica*. B. M. t. 2488.

— *Baine'sii*. Green. W. Tropical Africa. 1864. B. M. t. 5472.

— *Berlandi'ri*. Texas. 1888.

— *blanda*. May. North America.

— *cape'nsis*. South Africa. 1887. Rev. Hort. 1887, p. 372.

— *capriolata*. Temperate Himalayas.

— *chontale'nsis*. Scarlet. Nicaragua. 1869. Syn., *Cissus chontalensis*.

— *cirrho'sa*. Green. S. Africa. 1866.

— *Cogne'tice*. Japan. 1890.

— *cordifo'lia*. 12. May. North America. 1806. *V. riparia*, B. M. t. 2429, is a form of this.

— *Davidia'na*. China. 1868. Syn., *Cissus Davidiana*, *C. platanifolia*, and *C. rubricaulis*.

— *dissecta*. See *Ampelopsis aconitifolia*.

— *Endre'sii*. Leaves velvety green, with purplish veins. Costa Rica. 1875.

— *fleuzou'sia*. Himalayas. 1841. Syn., *V. parvifolia*.

— *gongylo'des*. See *V. pterophora*.

— *heterophylla*. 10. Blue. Japan. 1820.

— *humulifolia*. 2-5. Green. Japan; China. 1838. B. M. t. 5682.

— *hypoglau'ca*. Yellow. Victoria. 1866.

— *indivi'sa*. Eastern North America. 1838.

— *jappo'nica*. Green. Japan. 1875. Syn., *Cissus japonica*.

— *crassifolia*. Leaves bright green above, cobwebby beneath.

— *marmorata*. Leaves blotched with yellow. 1875.

— *javalensis*. Scarlet. Nicaragua. 1869. Syn., *Cissus javalensis*.

— *Labrusca'na*. 12. June. North America. 1656. Jacq. H. Schoenb. t. 426. Syn., *V. Thunbergii*.

— *lanata*. Green. May. Himalayas. 1824.

— *Linde'ni*. Leaves green, with white mottlings. Columbia. 1870. Syn., *Cissus Lindeni*.

— *macro'pus*. Green. W. Tropical Africa. 1864. B. M. t. 5479.

— *multifida gra'cilis*. China. 1891.

— *parvifolia*. See *V. fleuzou'sa*.

— *planicaulis*. Green. Sikkim. 1849. B. M. t. 5685.

— *pterophora*. Autumn. Brazil. B. M. t. 6803. Syn., *V. gongyloides*. G. C. 1883, xix. p. 52. Stove.

— *quadrangula'ris*. Summer. India and Malaya.

— *reniformis viola'cea*. China. Rev. Hort. 1838, p. 536, fig. 132.

— *ripa'ria*. See *V. cordifolia*.

— *Romane'tina*. China. Rev. Hort. 1838, p. 536, fig. 131.

— *obtusifolia*. Leaves cordate, almost entire, furnished with white tomentum beneath. China. 1891.

— *serotina*. A late fruiting form. China. 1891.

— *rutilans*. Eastern Asia. Rev. Hort. 1890, p. 444.

— *sempervirens*. See *V. striata*.

— *striata*. Greenish. South Brazil and Uruguay. 1881. Syn., *V. sempervirens*, *Cissus striata*, and *Ampelopsis sempervirens*. Hardy evergreen climber.

— *Thunbergii*. See *V. Labrusca*.

— *tricuspidata*. See *Ampelopsis tricuspidata*.

— *velutinus*. Red. Malay Islands. 1859.

— *vinifera*. Green. June. South of the Caspian Sea. Bent. et Tr. t. 66.

— *amure'nsis*. Leaves woolly on both sides when young. Gfl. t. 339.

- V. vinifera* *apiifolia*. 20. June. 1648. Syn., *V. laciniosa*.
 — *vitigifera*. Green. E. Indies. 1772.
 — *vulpina*. May. North America. Jacq. H. Schoenb. t. 425. Bullace; Muscadine.

Vittade'nia. (From *vitta*, a riband, and *aden*, a gland. Nat. ord., *Compositæ*; Tribe, *Asteroideæ*.) See **Erigeron**.

V. triloba. See *Erigeron mucronatus*.

Vitta'ria. (From *vitta*, a riband; shape of fronds. Nat. ord., *Filices*; Syn., *Tæniopsis*.)

Stove, brown-spored ferns, with grass-like fronds. See **FERNES**.

- V. angustifolia*. Malacca.
 — *elongata*. S. America.
 — *ensiformis*. May. Brazil.
 — *graminifolia*. 1. July. Brazil. 1820.
 — *lineata*. 2. August. S. America. 1793. Syn., *Tæniopsis lineata*.
 — *revoluta*. June. Nepal. Syn., *Tæniopsis revoluta*.
 — *scopolendrina*. 1½. New Guinea. Syn., *Tæniopsis scolopendrina*.
 — *zosterifolia*. S. America.

Vivia'nia. (Named after *Dr. Viviani*, a Swiss botanist. Nat. ord., *Geraniaceæ*; Tribe, *Vivianeæ*.)

Greenhouse, Chilean evergreens. Cuttings of young shoots in sand, under a bell-glass, in May; sandy loam and fibry peat. Winter temp., 45° to 50°; summer, 60° to 70°.

- V. grandiflora*. 2. Red. July. 1832.
 — *marifolia*. 2. Red. July. 1832.
 — *parviflora*. 2. White. July. 1832.

Voandzei'a. (Said to be from its Malagasy name, *Voandzon*. Nat. ord., *Leguminosæ*.)

Creeping, etove herb, which forces its seed-pods into the earth to ripen. For culture, see **ARACHIS**.

- V. subterranea*. ½. Pale yellow. July. Tropical Africa, etc. 1823. Bombarra Ground Nut; Underground Bean.

Vochy'sia. (From *Vochy*, the Guianese name of *V. guianensis*. Nat. ord., *Vochysiaceæ*. Syn. *Vochisia* and *Vochya*.)

Stove shrubs or trees. Compost of loam and peat. Cuttings.

- V. guianensis*. 12. Yellow. August. Guiana. 1822.
 — *tomentosa*. 25. Yellow. August. Guiana. 1826.

Volkame'ria. (After *Joh. Christoph Volkamer*, a botanist of Nürnberg, died 1720. Nat. ord., *Verbenaceæ*; Tribe, *Viticeæ*.) See **Clerodendron**.

- V. aculeata*. See *Clerodendron aculeatum*.
 — *angustifolia*. Andr. Rep. t. 554. See *Clerodendron heterophyllum*.
 — *buxifolia*. See *Clerodendron inerme*.
 — *fragrans*. See *Clerodendron fragrans*.
 — *inermis*. See *Clerodendron inerme*.
 — *japonica*. A synonym of *Clerodendron fragrans*.
 — *Kampferi*. See *Clerodendron squamatum*.

Voua'pa. (From the Guianese name. Nat. ord. *Leguminosæ*.)

Stove, evergreen tree. Sandy loam and a little peat. Cuttings.

- V. bifolia*. 10. Violet. May. South America. 1823. This is now known as **MACROLOBIUM BIFOLIUM**.

Vo'ya. (Guianese name. Nat. ord., *Gentianeæ*.)

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. cœrulea*. Blue. June. Trinidad. 1824.
 — *rosea*. Red. July. Guiana. 1822.
 — *uniflora*. Yellow. June. W. Ind. 1824.

Vriesia. (Named after *Dr. de Vriese*, a Dutch botanist. Nat. ord., *Bromeliaceæ*; Tribe, *Tillandsiæ*.) See **Tillandsia**.

Many of the plants enumerated below have originated as garden hybrids, and have not received names under **TILLANDSIA**.

- V. Alberti*. A hybrid between *Tillandsia incurvata* and *Vriesia Morreniana*. Rev. Hort. 1889, p. 300.

- *anceps*. See *Tillandsia anceps*.
 — *Barilleti*. See *Tillandsia Barilleti*.
 — *Bilbergiæ*. See *Tillandsia Bilbergiæ*.
 — *brachystachys*. See *Tillandsia carinata*.
 — *cæspitosa*. See *Tillandsia Schlechtendahlii*.
 — *cardinalis*. Hybrid between *Tillandsia brachystachys* and *T. Krameri*.
 — *carinata*. See *Tillandsia carinata*.
 — *chrysostrachys*. See *Tillandsia chrysostrachys*.
 — *corallina*. See *Tillandsia corallina*.
 — *crocaliphora*. See *Tillandsia Barilleti*.
 — *Duvaliana*. See *Tillandsia Duvaliana*.
 — *Falkenbergii*. See *Tillandsia heliconioides*.
 — *fenestrata*. See *Tillandsia fenestrata*.
 — *fulgida*. A hybrid between *Tillandsia Duvaliana* and *T. incurvata*.
 — *gigantea*. See *Tillandsia regina*.
 — *gladioliflora*. See *Tillandsia gladioliflora*.
 — *glaucophylla*. B. M. t. 4415. See *Tillandsia glaucophylla*.
 — *Glazioviana*. See *Tillandsia regina*.
 — *gracilis*. See *Tillandsia gracilis*.
 — *Graviana*. A hybrid between *Tillandsia psittacina*, var. *Morreniana* and *T. Barilleti*. 1890.

- *guttata*. See *Tillandsia guttata*.
 — *heliconioides*. See *Tillandsia heliconioides*.
 — *hieroglyphica*. See *Tillandsia hieroglyphica*.
 — *incurvata*. See *Tillandsia incurvata*.
 — *imperialis*. A form of *Tillandsia regina*.
 — *insignis*. A hybrid between *Tillandsia Barilleti* and *T. splendens*.
 — *Jonghei*. See *Tillandsia Jonghei*.
 — *Kittelia*. Na. Gf. 1890, p. 326. A hybrid between *Tillandsia Barilleti* and *T. Saundersii*.

- *leodieuse*. A hybrid between *Tillandsia psittacina*, var. *Morreniana*, and *T. Barilleti*.

- *Lindeni*. See *Tillandsia Lindeni*.
 — *Magniana*. Gf. 1889, p. 343. A hybrid between *Tillandsia Barilleti* and *T. fenestrata*.

- *Ma'ria*. Rev. Hort. 1889, p. 300. A hybrid between *Tillandsia Barilleti* and *T. carinata* (*Vriesia brachystachys*).

- *Morre'no-Barilletiana*. Ill. Hort. 1889, p. 103, t. 91. A hybrid between *Tillandsia Barilleti* and *T. psittacina*, var. *Morreniana*.

- *parabaica*. See *Tillandsia parabaica*.
 — *Philippo-Coburgi*. See *Tillandsia Philippo-Coburgi*.

- *Platzmanni*. See *Tillandsia Platzmanni*.

- V. psittacina*. B. R. 1843, t. 10. See *Tillandsia psittacina*.
 — *brachystachya*. } See *Tillandsia carinata*.
 — *carinata*. }
 — *Truffantia* na. See *Tillandsia incurvata*.
 — *pulverulenta lineata*. BRAZIL. Rev. Hort. 1888, p. 89, fig. 20.
 — *reticulata*. See *Tillandsia reticulata*.
 — *retroflexa*. See *Tillandsia psittacina-scalaris*.
 — *Rodrigasia* na. See *Tillandsia Rodrigasiana*.
 — *sanguinolenta*. See *Tillandsia sanguinolenta*.
 — *Saundersii*. See *Tillandsia Saundersii*.
 — *scalaris*. See *Tillandsia scalaris*.
 — *splendens*. See *Tillandsia splendens*.
 — *tessellata*. See *Tillandsia tessellata*.
 — *tricolor*. See *Tillandsia tricolor*.
 — *versatilis*. Ill. Hort. 1889, p. 73, t. 87. A hybrid between *Tillandsia Duvalliana* and *T. carinata*.
 — *viminalis*. } See *Tillandsia viminalis*.
 — *viridiflora*. }
 — *Warmiingii*. See *Tillandsia Warmiingii*.
 — *Wauraneae*. See *Tillandsia Wauraneae*.
 — *Weyringeria* na. Gf. 1890, p. 7. A hybrid between *Tillandsia Barilleti* and *T. scalaris*.
 — *Willmachiana*. See *Tillandsia Barilleti*.
 — *xiphostachys*. See *Tillandsia xiphostachys*.
- Vulneraria.** (From *vulnus*, a wound. Nat. ord., *Leguminosae*; Tribe, *Loteae*.) A synonym of *Anthyllis*.
V. rubriflora. A synonym of *Anthyllis vulneraria*, var. *rubriflora*.

W.

Wachendorfia. (Named after E. J. Wachendorf, a Dutch botanist. Nat. ord., *Hæmodoraceae*; Tribe *Euhæmodoraceae*.)

Greenhouse, South African bulbs; yellow-flowered, except where otherwise mentioned, and requiring the same treatment as the larger Ixias. They bloom in April.

- W. brevifolia*. 1. Purple. 1795. B. M. t. 1166.
 — *Bregnia* na. 1. 1825.
 — *graminea*. 1.
 — *Hibbertii*. 2. 1823.
 — *hirsuta*. 1½. Violet. 1687. B. M. t. 614.
 Syn., *W. villosa*.
 — *paniculata*. 2. 1700. B. M. t. 616 and t. 2610.
 — *tenuella*. 1. 1816.
 — *thyrsiflora*. 2. May. 1759. B. M. t. 1060.
 — *villosa*. Andr. Rep. t. 398. See *W. hirsuta*.

Waefer Ash. *Ptelea trifoliolata*.

Wahlenbergia. (Named after Dr. Wahlenberg, author of "Flora Laponica." Nat. ord., *Campanulaceae*.)

All are blue-flowered, except when otherwise mentioned. Seeds under a glass in the beginning of April, and planted out in the end of May; division of perennials, and cuttings of the young shoots in the beginning of summer, under a hand-light; sandy peat and loam, and a cool, moist situation.

GREENHOUSE ANNUALS, ETC.

- W. albo-marginata*. Ic. Pl. t. 818. See *W. saxicola*.
 — *capillaris*. May. N. Holland. 1824. Biennial.
 — *cernua*. Blue, white. July. Cape of Good Hope. 1804. Biennial.

- W. dehiensis*. White. June. Bengal. 1818.
 — *graecilis*. April. N. S. Wales. 1794. Biennial.
 — *litoralis*. April. Van Diemen's Land. 1820. Biennial.
 — *Roylei*. A synonym of *Codonopsis ovata*.
 — *saxicola*. 1½. Pale lilac. June. New Zealand. B. M. t. 6613. Syn., *W. albo-marginata* and *W. vincoflora*. Perennial. New Zealand Bluebell.
 — *tuberosa*. 1½. 2. White, rose. Juan Fernandez. 1874. B. M. t. 6155.
 — *undulata*. Violet-blue. South Africa. B. M. t. 7174.
 — *vincoflora*. See *W. saxicola*.

HARDY PERENNIALS.

- W. arvensis*. May. Spain. 1825.
 — *capillaris*. White. May. Cape of Good Hope. 1822.
 — *grandiflora*. A synonym of *Platycodon grandiflorum*.
 — *Kitabii*. Violet. June. Hungary. 1823.
 — *repens*. 1. White. July. 1830.
 — *tenuiflora*. 1. Violet-blue. August. Dalmatia. 1879. Syn., *Edraianthus tenuifolius* and *E. caudatus*.

HARDY ANNUALS.

- W. capensis*. July. 1819. Syn., *W. elongata*.
 — *axiflora*. June. Cape of Good Hope. 1787.
 — *diversiflora*. July. Cape of Good Hope. 1822.
 — *elongata*. See *W. capensis*.
 — *flavilis*. May. Cape of Good Hope. 1836.
 — *hispidula*. Blue, white. June. Cape of Good Hope. 1816.
 — *linedaris*. White. July. Cape of Good Hope. 1822.
 — *lobeloides*. Pale red. July. Madeira. 1777. Syn., *W. pendula*.
 — *mutabunda*. White. July. Calabria. 1830.
 — *pendula*. See *W. lobeloides*.
 — *procumbens*. July. Cape of Good Hope. 1824.

Waileisia. (In honour of G. Wailes, Esq., a great cultivator of orchids. Nat. ord., *Orchideae*; Tribe, *Vandee-Cymbidieae*.) Now united with **Dipodium**.

Stove epiphytal orchid. See ORCHIDS.

- W. picta*. 1. Yellow, crimson. Java. 1849. Now known as **DIPODIUM PICTUM**.
 — *punctata*. 1-2. Red, purple. Australia. 1822. Now known as **DIPODIUM PUNCTATUM**.
 — *rosea*. A synonym of *Dipodium pictum*.

Wai'tzia. (In honour of M. Waitz. Nat. ord., *Compositae*. Syn., *Morna*.) Annuals of the Everlasting type. For cultivation, see **MORNA**.

- W. acuminata*. See *W. corymbosa*.
 — *au'rea*. 1-2. Golden-yellow. Summer. Australia. 1836. Syn., *Morna nitida*, B. R. t. 1941.
 — *corymbosa*. White, yellow. Swan River. 1864. B. M. t. 5443. Syn., *W. acuminata*.
 — *grandiflora*. Yellow. W. Australia. 1864. One of the finest.
 — *nivea*. 1½. White or pink. Summer. Australia. 1836. Syn., *Morna nivea*, B. R. 1838, t. 9.
 — *Sleeziana* na. Yellow. Swan River. 1861. Syn., *W. tenella*, B. M. t. 5342.
 — *tenuella*. See *W. Sleeziana*.

Wake Robin. *A'rum maculatum* and *Trillium grandiflorum*.

Waldsteinia. (Named after F. von Waldstein, a German botanist.)

Nat. ord., *Rosaceæ*; Tribe, *Potentilleæ*.
Syn., *Comaropsis*. Allied to *Geum*.)

Hardy herbaceous perennials. For culture, see *GEUM*.

W. Donia'na. 1. Yellow. May. N. America. 1800. Syn., *Comaropsis Doniana*.

— *fragrarioides*. 1. White. May. N. America. 1803. Syn., *Comaropsis fragrarioides* and *Dalibarda fragrarioides*. B. M. t. 1567.

— *geoi'des*. 3. Yellow. June. Hungary. 1804. B. M. t. 2595.

— *trifolia*. 4. Yellow. April. Eastern Europe.

Walke'ra. (Named after *Dr. R. Walker*, founder of the Cambridge Botanic Garden. Nat. ord., *Ochnaceæ*; Tribe, *Ochneæ*.)

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. integrifolia. 12. Guiana.

— *serrata*. 12. Guiana. 1824.

Walking Leaf. *Scolopendrium rhizophyllum*.

Walks. See **Concrete and Gravel Walks.**

Wall-ress. *A'rabis*.

Wall Fern. *Polypodium vulgare*.

Wallflower. *Cheira'nthus*.

Wall'chia. (In honour of *Dr. Wallich*, once curator of the Calcutta Botanic Garden. Nat. ord., *Palmae*; Tribe, *Areceæ*.)

Moist stove palms, requiring 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. caryotoides. Yellowish-white. July. India. 1825.

— *densiflora*. Sikkim. Himalaya. B. M. t. 4584.

This is the same as *W. oblongifolia*.

Wallisia. See **Tillandsia.**

Wall Pennywort. *Cotyle'don Umbellatus*.

Wall Pepper. *Se'dum a'cre*.

Wall Rue. *Asple'nium Ru'ta-muraria*.

Walls are usually built in panels, from fifteen to thirty 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, nine 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 outward 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 eight inches. It is strengthened at every twenty feet by piers of fourteen-inch work, built in the same manner, with bricks laid on edge.

In every instance a wall should never be lower than eight feet. The thickness usually varies with the height of the wall, being nine inches if it is not higher than eight feet; thirteen and a half inches, if above eight and under fourteen feet; and eighteen inches, from fourteen up to twenty 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 compartments *a a a*, to facilitate the circulation of smoke and heat from the base or surface of the ground, to within one or two 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 forty feet, and from ten to

fifteen high, may be heated by one fire, the furnace of which, *b*, being placed one or two feet below the surface of the ground, the first course, or flue, *c*, will commence one foot above it, and be two feet six inches or three feet high, and the second, third, and fourth courses, *d*, *e*, *f*, narrower as they ascend. The thickness of that side of the flue next the south or preferable side should, for the first course, be four 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 three, for the third two and three quarters, and for the fourth two and a half 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.*

Value'wa. (After *P. A. Walejew.* Nat. ord., *Orchideæ*; Tribe, *Vandee-Oncideæ.*)

Stove orchid. For culture, see GOMEZA.
W. pulch'ella. Yellow, purple. Brazil. 1892.

Wardian Case. See **Glass Case.**

Wa'rra. (Named after *F. Warre*, a botanical collector. Nat. ord., *Orchideæ*; Tribe, *Vandee-Cryptopodieæ.* Allied to *Grobya.*)

Stove orchids, grown in baskets. See ORCHIDS.

W. bidenta'ta. Purple, white. September. Caraccas. 1843.

— *ca'ndida.* Purple, white. February. Bahia. 1850.

— *cyane'a.* B. R. 1845, t. 28. See *Aganisia cyanea.*

— *digita'ta.* Brazil. 1856.

— *discolor.* See *Zygopetalum discolor.*

— *margin'a'ta.* } See *Zygopetalum marginatum.*

— *quadra'ta.* }

— *rube'scens.* Red. April. Brazil. 1838.

— *tri'color.* 2. Yellow, purple. August. Brazil. 1843. Syn., *Maxillaria Warreana.* B. C. t. 1884.

— *stapelioides.* Flower barred with brown. Columbia. 1873.

— *Walesia'na.* Cream colour. Brazil.

Warszewiczia. (After a Russian botanist named *Warszewicz.* Nat. ord., *Rubiaceæ*; Tribe, *Cinchoneæ.*)

Stove evergreen tree. For culture, see MACROCENMUM.

W. cocc'inea. Red. Trinidad. Syn., *Macrocennum coccineum.*

Warszewiczella. (Diminutive of *Warszewiczia.* Nat. ord., *Orchideæ*; Tribe, *Vandee-Cyrtopodieæ.*) A synonym of *Zygopetalum.*

W. aroma'tica. See *Zygopetalum aromaticum.*

— *pic'ta.* See *Zygopetalum pictum.*

W. Wendlandi discolor. Warn. Orch. Alb. t. 126.

See *Zygopetalum Wendlandi*, var. *discolor.*

Washingtonia. (After *George Washington*, the American statesman. Nat. ord., *Palmæ*; Tribe, *Corypheæ.*)

Tall greenhouse palms. For culture, see CHAMÆROPS.

W. filifera. 30. California. Syns., *Brahea filamentosa*, *Pritchardia filamentosa* and *P. filifera.*

— *giga'ntea.* A synonym of *Sequoia gigantea.* (Nat. ord., *Conifereæ.*)

— *robu'sta.* 7. California. 1883. Rev. Hort. 1885, p. 403, fig. 73.

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 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 is 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 frequently 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. (*Nasturtium officinale.*) *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 three or four inches can be kept up. These trenches are three yards broad, and eighty-seven 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 three or four 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 two or three 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 barrow-fuls 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 six 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, etc.

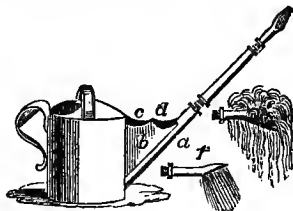
Waterfall. See **Cascade.**

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 zig-zag bends in the spout, to break from the plant the force of the water. *Shelf* watering pots are small and flat-bodied,

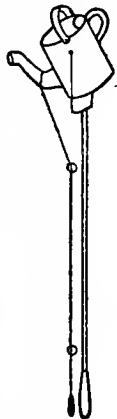
for giving water to plants overhead, and near the glass in greenhouses or stoves.

The accompanying engraving is of a watering pot designed by Mr. G. Thompson, who 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; *a* is the spout to which the roses are screwed; *b*, the box to contain either spout out of use; *c* and *d*, the holes in which the joints are placed; *e*, a large rose, for watering flower-beds; *f*, a smaller rose, for watering plants in pots.

Watering Pot, High-level. This instrument has been designed for watering plants on high shelves, or at the back of a bench or border, and rendering it unnecessary to remove the front rows of pots or to step upon the border. It consists (as shown in the annexed figure) of an ordinary watering-pot suspended between metal prongs attached to a long handle, somewhat resembling a pitchfork. On the front of this handle are screwed two rings, through which a cord attached to the spout of the pot is passed. The pot is so balanced as to remain vertical until by pulling the cord it can be tilted to the angle required to allow the water to pass out of the spout. It can be used with or without a rose.



Water Aloe. *Stratio'tes aloi'des.*

Water Anemone. *Ranu'nculus aqua'tilus.*

Water Archer. *Sagittaria sagittifolia*.

Water Ash, Carolina. *Fraaxinus platyca'rpa*.

Water Avens. *Geum rivale*.

Water Balsam. *Tyto'nia na'tans*.

Water Bean. *Nelumbium*.

Water Betony. *Scrophularia aquatica*.

Water Caltrops. *Tro'pa na'tans*.

Water Cress. *Nasturtium officinale*.

Water Elder. *Viburnum Opulus*.

Water Flag. *Iris pseu'do-a'corus*.

Water Gladiole. *Bu'tomus umbellatus*.

Water Leaf. *Passiflora laurifolia*.

Water Lentils. *Le'mna*.

Water Lettuce. *Pistia stratiotes*.

Water Lily. *Nymphaea*.

Water Lily, New Zealand. *Ranunculus Lyallii*.

Water Melon. *Citrullus vulgaris*.

Water Milfoil. *Myriophyllum*.

Water Oak. *Quercus aquatica*.

Water Parsnip. *Sium*.

Water Plants. See **Aquarium**.

Water Reed. *Aru'ndo*.

Water Soldier. *Stratiotes aloides*.

Water Spike. *Potamogeton*.

Water Thyme. *Elo'dea*.

Water Vine. *Tetrad'cera potato'ria*.

Water Violet. *Hottonia palustris*.

Water White Oak. *Quercus lyrata*.

Watsonia. (Named after *W. Watson*, a London apothecary. Nat. ord., *Iridaceae*; Tribe, *Ixiaceae*. Allied to *Gladiolus*.)

Bulbs, from South Africa, except where otherwise mentioned. For culture, see **GLADIOLUS**.

W. aletroides. 1½. Scarlet. June. 1774. B. M. t. 533. Syns., *W. tubulosa*, *Antholyza tubulosa* and *Gladiolus tubulosus*.

— *variegata*. 1½. Variegated. June. 1774.

— *angustata*. ¾. Scarlet. June. 1823. Syns., *W. fulgida*, *W. iridifolia*, var. *fulgens*, B. M. t. 600, *Antholyza fulgens*, Andr. Rep. t. 192, and *Gladiolus Meriana*, var. Jacq. Ic. t. 231.

— *brevifolia*. 1. Pink. May. 1774. B. M. t. 601. Syn., *Antholyza spicata*. Andr. Rep. t. 36.

— *campanulata*. Probably a form of *Ixia columellaris*.

W. coccinea. 1. Bright crimson. Syn., *W. Meriana*, var. B. M. t. 1194.

— *compacta*. See *W. plantaginea*.

— *cylindrica*. 1. Pale red. Madagascar? 1871.

— *densiflora*. 2. Rose. Natal. 1878. B. M. t. 6400.

— *fistulosa*. ½-1. Red. Syns., *Gladiolus fistulosus*, Jacq. H. Schoenb. t. 6, *Ixia cepacea*, *I. fistulosa*, B. M. t. 523 and *Micranthus fistulosus*.

— *fulgida*. See *W. angusta*.

— *humilis*. 1. Crimson. June. 1754. B. M. t. 63 and t. 1193. Syn., *Gladiolus lacatus*, Jacq. Ic. t. 232.

— *iridifolia*. See *W. Meriana*, var. *iridifolia*.

— *lacata*. A synonym of *W. humilis*.

— *Liliago*. See *Anthericum Liliago*.

— *Ludwigii*. See *W. Meriana*, var. *roseo-alba*.

— *marginata*. 4-5. Bright rose. July. B. M. t. 608. Syn., *Gladiolus marginatus*.

— *minor*. A small flowered variety. B. M. t. 1530.

— *Meriana*. 2-3. Bright rose. May. 1750. Syns., *Antholyza Meriana*, B. M. t. 418, and *Gladiolus Merianus*. Red. Lil. t. 11.

— *iridifolia*. 2½. Flesh-coloured. May. 1795. Syns., *W. iridifolia* and *Gladiolus iridifolius*, Jacq. Ic. t. 234. There is a form *O'Brienti*. G. C. 1839, vi. p. 334.

— *roseo-alba*. 1. Pink, white. July. Syns., *W. Ludwigi*, *W. roseo-alba*, B. M. t. 537, and *Gladiolus roseo-albus*.

— *plantaginea*. ½-1. Pink. June. 1774. B. M. t. 553. Syns., *W. compacta*. B. C. t. 1577, *Ixia plantaginea*, *Gladiolus plantagineus*, *Micranthus plantagineus*, and *Phalangium spicatum*.

— *punctata*. ½-1. Dark red or violet. June. 1800. Syns., *W. rubens*, and *Gladiolus spicatus*.

— *racemosa*. Probably a form of *Ixia columellaris*.

— *retusa*. Rose-red. Syn., *Ixia polystachya*, B. M. t. 629.

— *revoluta*. A synonym of *Gladiolus Watsonius*.

— *rosea*. 4-5. Bright rose-red. July. 1803. Syns., *Gladiolus iridifolius*, var. Jacq. Ic. t. 235, and *G. pyramidalis*, Andr. Rep. t. 335.

— *roseo-alba*. See *W. Meriana*, var. *roseo-alba*.

— *rubens*. See *W. punctata*.

— *spicata*. 1. Pink. May. 1791. Syn., *Micranthus cepaceus*.

— *striatiflora*. 1-1½. Rose-red. June. 1810. B. M. t. 1416.

— *tubulosa*. See *W. aletroides*.

Wattle. *Acacia* and *Citharexylum*.

Wax Dammar. *Podocarpus nerifolia*.

Wax Flower. *Ho'ya*.

Wax Flower, Clustered. *Stephanotis floribunda*.

Wax Myrtle. *Myrica cerifera*.

Wax Palm. *Copernicia cerifera*.

Wax Plant. *Cer'nthe maj'or*.

Wax Tree. *Vismia guianensis*.

Way Bread. *Planta'go*.

Wayfaring Tree. *Viburnum Lan'at'na*.

We'bbia. (In honour of *Mr. P. B. Webb*. Nat. ord., *Compositae*; Tribe, *Vernoniaceae*.)

Half-hardy sub-shrub. For cultivation, see VERNONIA.

W. pinifolia. Purple. Natal. 1863.

We'bera. (After George Henry Weber, 1752-1828, Professor of Botany at Kiel. Nat. ord., *Rubiaceæ*.)

A small stove tree. For culture, see VANGUERIA.

W. corymbosa. White. Summer. India. B. R. t. 119.

Wedelia. (After George Wolfgang Wedel, 1645-1721, a professor at Jena. Nat. ord., *Compositæ*.)

Greenhouse or half-hardy perennials. Seeds or cuttings.

W. aurea. See *Zexmenia aurea*.

W. biflora. Yellow. July. E. Indies. 1818.

Syn., *Wollastonia biflora*. Annual.

W. hispidula. 1 $\frac{1}{2}$. Yellow. June. Mexico. 1819.

B. M. t. 543. Syn., *Zexmenia texana*.

W. radiosa. 2. Yellow. June. Brazil. 1820.

B. R. t. 610. Sub-shrub.

Weed-wind or With-wind. *Convolvulus arvensis*.

Weeping Arbor-vitæ. *Thuja orientalis*, var. *pendula*.

Weeping Ash. *Fraxinus excelsior*, var. *pendula*.

Weeping Beech. *Fagus sylvatica*, var. *pendula*.

Weeping Cherry. *Cerasus semperflorens*.

Weeping Elm. *Ulmus glabra* var. *pendula* and *Ulmus montana* var. *pendula*.

Weeping Mountain Ash. *Pyrus Aucuparia*, var. *pendula*.

Weeping Oak. *Quercus pedunculata*, var. *pendula*.

Weeping Poplar. *Populus grandidentata* var. *pendula*, and *Populus Tremula* var. *pendula*.

Weeping Red Cedar. *Juniperus virginiana*, var. *pendula*.

Weeping Willow. *Salix babingtonica*.

Weevil. See **Anthonomus**.

Weigela. (Named after C. E. Weigel, a botanical writer. Nat. ord., *Caprifoliaceæ*.) A synonym of **Diervilla**.

Hardy deciduous shrubs. Cuttings in spring and autumn, under a hand-light, or even in a protected border. It forces as easily as a Lilac. Sandy loam and a little leaf-mould.

W. amabilis. Fl. Ser. t. 855. See *Diervilla hortensis*.

— *rosea*. B. M. t. 4396. See *Diervilla rosea*.

— *monstrosa*. A synonym of *Diervilla rosea*, var. *monstrosa*.

Weinmannia. (Named after J. W. Weinmann, a German botanist. Nat. ord., *Saxifrageæ*; Tribe, *Cunoniaceæ*.)

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. elliptica. 4. May. S. America. 1824.

— *glabra*. 6. May. Jamaica. 1815.

— *hirta*. 6. May. Jamaica. 1820.

— *ovata*. 6. May. Peru. 1824.

GREENHOUSE.

W. australis. Australia. 1836.

— *paniculata*. Australia. 1831.

— *pubescens*. 1847.

— *trichosperma*. Chiloe.

— *trifoliata*. June. South Africa. 1820. Syn.,

Platylophus trifolius.

— *venosa*. Kn. and West. t. 65. A synonym of

Acrophyllum venosum.

Wel'fia. (Named in honour of the royal family (Guelph) of Hanover. Nat. ord., *Palmeæ*; Tribe, *Areceæ*. Allied to *Geonoma*.)

Stove palm. Seeds. Rich loam and leaf-mould, mixed with a little old cow-dung. Summer temp., 65° to 85°; winter, 60° to 70°.

W. regia. Amazons. 1869.

Wellingtonia. (In honour of the great Duke of Wellington. Nat. ord., *Coniferae*; Tribe, *Taxodiæ*.) See **Sequoia**.

This is the loftiest of known trees. Specimens are known with trunks 300 feet high, and 20 feet in diameter. It is an evergreen, and perfectly hardy.

W. gigantea. See *Sequoia gigantea*.

— *pyramidalis compacta*. Rev. Hort. 1891, p. 166. A garden variety of *Sequoia sempervirens*.

Welsh Nut. *Juglans regia*, the Walnut.

Welsh Onion. See **Ciboul**.

Welsh Poppy. *Meconopsis cambrica*.

Welwi'tschia. (Named in honour of Dr. Frederic Welwitsch, a talented botanical traveller. Nat. ord., *Gnetaceæ*.)

This truly remarkable plant is one of the wonders of the Vegetable Kingdom. It is a native of the elevated plateau near Cape Negro, in Western Tropical Africa, and of Damara Land; and only grows in dry arid places where rain hardly ever falls. It forms a short obconic trunk about two feet long, the greater part of which is buried in the earth, only rising above the soil a few inches. From the base of the trunk, roots run down very deep into the earth. The top is flat and rough, and somewhat two-lobed; in old plants it is often three to four feet in diameter. From a deep groove at the margin of each lobe proceed the two leaves—the only ones the plants ever has, and are the cotyledons or seed leaves. The leaves are six to eight feet long, or longer; they spread out on each side of the plant upon the ground, and in old plants are split up from apex to base into ribbon-like pieces. From the edge of the top of the trunk,

just within the leaves, arise the forked stems which bear the cones; these are produced in plenty, and their bright crimson-scarlet colour adds to the very remarkable appearance of the plant. Although it was first made known in Europe by Dr. Welwitsch, it appears to have been first discovered by Mr. C. J. Anderson, an eminent African traveller. This wonderful plant has been introduced into the Royal Gardens, Kew, but we do not know if it yet exists in any other establishment. It will probably prove very difficult to cultivate, on account of the impossibility of imitating the natural conditions under which it flourishes. It appears that the most probable method of succeeding with it would be to inclose a space within brick walls to a height of about three feet from the earth; this should be filled up to a height of about sixteen or eighteen inches with a very light porous soil, such as a mixture of light sandy loam and broken bricks, in the proportion of two parts of the former to one of the latter. Above this the space should be filled in with sand and brick rubbish mixed with a little sandy loam—about a tenth part of the latter, just to help to bind it. If planted in this way the long descending roots would penetrate into the lower soil, and derive sufficient nourishment and water from it, as the water would ascend into the lower stratum from the earth by capillary attraction, whilst the upper stratum, being dry, will prevent the plant from rotting. It should be fully exposed to the sun, and no water given it, though at evening a slight syringing over the leaves and crown would probably be beneficial, as this would in some way approach the dews to which it is subjected in its native country. The temperature should not be allowed to get below 50°.

W. mirabilis. Damara Land. 1863 and 1878. Trans. Linn. Soc. xxiv. 1-14; B. M. tt. 5368-9.

Wendla'ndia. (Named after J. C. Wendland, curator of the Botanic Garden, Hanover. Nat. ord., *Rubiaceæ*; Tribe, *Cinchoneæ*. 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, fibry peat, and a little charcoal. Winter temp., 45° to 55°; summer, 60° to 80°.

W. paniculata. July. Malay. 1820.
— *populifolia*. See *Cocculus carolinus*.
— *tinctoria*. July. India. 1815.

Werne'ria. (Named after A. G. Werner, the celebrated mineralogist. Nat. ord., *Compositæ*; Tribe, *Senecionideæ*. 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. rigida. ½. February. Quito. 1828.

Western Yew. *Taxus brevifolia*.

West Indian Cockspur. *Pisodia aculeata*.

West Indian Mugwort. *Parthenium Hystero-phorus*.

Westri'ngia. (Named after J. P. Westring, physician to the King of Sweden. Nat. ord., *Labiatae*. Allied to *Prostranthera*.)

Greenhouse 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. angustifolia. See *W. rigida*.

— *cinerea*. See *W. rigida*.

— *Dampieri*. White. September. 1803. B. M. t. 3308.

— *eremicola*. 3. Pale blue. June. 1823. B. M. t. 3438. Syn., *W. longifolia* of B. E. t. 1481.

— *longifolia*. Lilac. Summer. 1878. See also *W. eremicola*.

— *rigida*. 3. White. 1823. *W. angustifolia* and *W. cinerea* (B. M. t. 3307) are forms of this.

— *rosmariniformis*. Pale blue. July. 1791. Syn., *W. rosmarinacea*, Andr. Rep. t. 214.

— *rubrifolia*. 3. Blue. June. 1820.

— *triphylia*. Blue. September. 1823.

West Wind, Flower of the. *Zephyranthes*.

Weymouth Pine. *Pinus Strobus*.

Whangee Cane. The stem of *Phyllostachys nigra*.

Wheat. *Triticum vulgare*.

Wheat, Buck. *Fagopyrum esculentum*.

Wheat, Guinea or Turkey. *Zea Ma'ys*.

Whin. *Ulex*.

Whin-berry. *Vaccinium Myrtillus*.

Whin, Petty. *Genista a'nglica*.

White Alder. *Weinmannia trifoliata*.

White Arum Lily. *Richardia africana*.

White Ash. *Fraxinus americana*.

White Basswood, American. *Tilia heterophylla*.

White Beam Tree. *Pyrus A'ria*.

White Bladder Flower. *Physalis a'nthus a'lbens*.

White Bothen. *Chrysanthemum Leucanthemum*.

White Bottle. *Silene inflata*.

White Butterwood. *Trichilia spondioides*.

White Camassia. *Camassia esculenta*, var. *Leichtlinii*.

White Cedar. *Chamaecyparis, Thuja gigantea*, and *T. occidentalis*.

White Cypress. *Taxodium distichum*.

White Elm. *Ulmus americana*.

Whiteheadia. (After the Rev. Henry Whitehead, who discovered this

plant. Nat. ord., *Liliaceæ*; Tribe, *Veratrea*.)

Greenhouse bulb. Rich soil. Offsets.

W. bifolia. 1½. Pale green. April. South Africa. 1792. Syn., *Eucomis bifolia*, B. M. t. 480, and *Melanthium massoniacifolium*.

White-heart Hickory. *Cary'a tomentos'a*.

White Hellebore. *Veratrum*.

White Lime. *Tilia arge'ntea*.

White Pine. *Pinus fle'xilis*.

White Potherb. *Valeriana'lla olito'ria*.

White Root. *Polygona'tum multi'lorum*.

White Thorn. *Crata'gus Oxy'aca'ntha*.

White Tree. *Melaleu'ca leucade'ndron*.

White Vine. *Cle'matis Vita'lba*.

White Wood. *Liriod'e'ndron tuli'pifera* and *Tilia america'na*.

Whitfieldia. (Named after T. Whitfield, a botanical collector of African plants. Nat. ord., *Acanthaceæ*. Allied to *Barleria*.)

For culture, see *BARLERIA*.

W. lateritia. 3. Lilac, red. December. Sierra Leone. 1841. B. M. t. 4155.

Whitlavia. (In honour of F. Whitlow, Esq., an Irish botanist. Nat. ord., *Hydrophyllaceæ*.) See *Phacelia*.

Hardy annual.

W. grandiflora. B. M. t. 4813. See *Phacelia Whitlavia*.

Whitleya. (After Mr. Whitley, once a nurseryman at Fulham. Nat. ord., *Solanaceæ*; Tribe, *Hyoscyameæ*.) See *Scopolia*.

W. stramonifolia. Swt. Fl. Gard. t. 125. See *Scopolia lurida*.

Whitlow Grass. *Dra'ba* and *Parony'chia*.

Whitten Tree. *Vibu'rum Opul'us*.

Whitwort. *Pyre'thrum Parthe'nium*.

Whortleberry. *Vacci'num Myr'tillus*.

Widdringtonia. (In honour of Captain Widdrington. Nat. ord., *Coniferæ*.)

Greenhouse evergreen shrubs. Cuttings.

W. cupressoides. 10. Cape of Good Hope.

— *juniperoides*. Cape of Good Hope.

Widow Wail. *Cneo'rum*.

Wiga'ndia. (Named after J. Wigand, Bishop of Pomerania. Nat.

ord., *Hydrophyllaceæ*. Allied to *Hydrolea*.)

Stove herbaceous. Seeds in a hotbed in spring; and by cuttings of the young shoots, taken off with a heel, after the plant has broken afresh after pruning; sandy loam and fibry peat, with charcoal nodules. Winter temp., 50° to 55°; summer, 60° to 85°.

W. caracasana. See *W. macrophylla*.

— *Ku'nthii*. Blue. April. Mexico. 1837.

— *macrophylla*. 10. Lilac. April. Caracacs.

1836. Syn., *W. caracasana*, B. R. t. 1966.

— *urens*. 6. Violet-blue. Summer. Mexico?

1830.

— *Vigieri*. 6. Lilac. Autumn. Mexico?

1868.

Wig Tree. *Rhu's Cotinus*.

Wikstroemia. (After J. E. Wikström, 1780-1856, a Swedish botanist. Nat. ord., *Thymelaceæ*.)

Greenhouse deciduous shrub. For culture, see *THYMELEA*.

W. Alberti. 2. Golden-yellow. Bokhara. 1887.

Syn., *Stellera Alberti*. Gf. t. 1262.

Wild Apple. *Py'rus Ma'lus*.

Wild Bergamot. *Mona'rda fistulo'sa*.

Wild Clary. *Sa'lvia Verbena'ca*.

Wild Clove. *Pime'nta d'cris*.

Wild Date. *Phœ'nix sylve'stris*.

Wild Hyacinth. *Sci'lla nu'tans*.

Wild Irishman. *Disca'ria Tou-ma'tou*.

Wild Olive. *Olea europæ'a* and *Elæ'agnus*.

Wild Snowball. *Ceano'thus america'nus*.

Wild Water Lemon. *Passiflo'ra fo'etida*.

Wild William. *Ly'chnis Flos-cu'culi*.

Willdenowia. (After C. L. Willdenow, 1765-1812, Professor of Botany at Berlin. Nat. ord., *Restiaceæ*.)

Greenhouse rush-like perennial herb. Loam, peat, and sand. Divisions.

W. teres. 3. Brownish. South Africa. 1790.

See also *Restio subverticillatus*.

Willemetia. (In honour of P. E. Willemet, a botanical author of the eighteenth century. Nat. ord., *Rhamneæ*.)

Greenhouse shrub. Compost of loam and peat. Cuttings in sand under a bell-glass.

W. africana. 12. White. May. South Africa.

Syn., *Noltia africana*.

Willow. *Sa'lix*.

Willow, American Water. *Dia'nthera america'na*.

Willow, French or Persian. *Epilo'bium angustifolium*.

Willow Grass. *Poly'gonum amphi'bium.*

Willow Herb. *Epilo'bium.*

Willow, Kilmarnock Weeping. *Sa'ra Capre'a*, var. *pe'ndula.*

Willow, Weeping. *Salix baby'lonica.*

Willughbe'ia. (Named after F. Willughby, a pupil of Ray. Nat. ord., *Apocynaceæ.* Allied to *Allamanda.*)

Stove evergreen. For culture, see ALLAMANDA.

W. édulis. 10. Pale pink. July. India. 1818.

Wind Flower. *Gentia'na pneumona'ntke* and *Anemo'ne.*

Window-bearing Orchid. *Cryptophora'nthus.*

Wind-root. *Ascle'pias tubero'sa.*

Wind Rose. *Ræme'ria hybrida.*

Wine-berry. *Vacci'nium Myr'tillus.*

Wine Palm. *Caryo'ta u'rens* and *Phœ'nix sylve'stris.*

Wint'era. (After Capt. W. Winter. Nat. ord., *Magnoliaceæ*; Tribe, *Winteræ.*) See *Drimys.*

W. aroma'tica. See *Drimys Winteri.*

— *granate'nsis.* See *Drimys granatensis.*

Winter Aconite. *Era'nthis hyema'lis.*

Winter Berry. *I'lex.*

Winter Bloom. *Hamame'lis virgi'nica.*

Winter Cherry. *Phys'alix Alke'ke'ngi.*

Winter Clover. *Miche'lla re'pens.*

Winter Cress. *Barbare'a.*

Winter Daffodil. *Sternbe'rgia lu'tea.*

Winter Garden. A term used to denote a large glass structure, in which sufficient heat is maintained to exclude frost during winter. It is usually of sufficient size to allow of the interior being laid out in paths, and beds in which to plant such showy evergreens as Camellias, Himalayan Rhododendrons, Bamboos, Palms, Tree-ferns, Araucarias, and numerous other plants from temperate regions. The pillars may be festooned with tea-roses and other climbing plants, and hardy bulbs may be liberally planted amongst the shrubs. When well done, such a garden should be a source of interest throughout the year, and a welcome rendezvous during the winter.

Winter-green. *Pyro'la.*

Winter-green, Aromatic or Creeping. *Gaulthe'ria procu'mbens.*

Winter-green, Chickweed. *Trienta'lis.*

Winter Hawthorn. *Aponoge'ton dista'chyon.*

Winter Moth. See *Cheimatobia.*

Winter Sweet. *Ori'ganum heracleo'ticum.*

Winter Wolf's Bane. *Era'nthis hyema'lis.*

Wire-Worms are the larvæ of various species of *Elatæ*, *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 Anemone, Ranunculus, etc., 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., *Leguminosæ.*)

Hardy deciduous, 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. brachybo'trys. 5. Violet-purple. April. Japan. Fl. Ser. t. 880.

— *chine'nsis.* See *W. sinensis.*

— *Consequa'na.* 15. Blue. June. China. 1818. Paxt. Mag. vii. p. 127.

— *floribu'nda.* May. Japan.

— *frute'scens.* 10. July. N. Amer. 1724.

Swt. Fl. Gard. ser. 2, t. 104. Syn., *Glycine frutescens*, B. M. t. 2103, and *Thyrsanthus frutescens.*

— *japo'nica.* White. July. Japan.

— *multi'ju'ga.* Lilac, purple. Japan. 1874.

Fl. Ser. t. 2002.

— *sine'nsis.* 20. Purplish. May and August.

China. 1816. Syn., *W. chinensis*, B. E. t. 650, *Glycine chinensis*, B. M. t. 2083, and *G. sinensis*, B. E. t. 650.

— *a'ba.* 20. White. April. China. 1846.

- W. sine'nsis flo're-pl'e'no.* A double-flowered variety. 1882.
 — — — *macrobotrys.* White, bluish-purple. Japan. 1870.
 — — — *variega'ta.* Leaves with silvery variegation. 1886.

Wista'ria, Tuberos - rooted.
A'prios tubero'sa.

Witch Elm. *U'lmus monta'na.*

Witches' Thimble. *Sile'ne mari'tima.*

Witch Hazel. *Hamame'lis.*

Withering'gia. (Named after *Dr. Withering*, a British botanist. Nat. ord., *Solanaceæ*. Allied to *Capsicum*.)

Greenhouse herbs and evergreens. Perennials; by seed, and divisions of the plant and tubers; evergreens, by cuttings in sand, under a bell-glass; rich, sandy loam. Winter temp., 38° to 48°.

W. crassifo'lia. 2. Yellow. June. Cape of Good Hope. 1706. Evergreen.

— *monta'na.* 1. White. June. Peru. 1822. B. M. t. 2768.

— *purpu'rea.* 3. Pale purple. July. Chili. 1829. Tuberos. B. C. t. 1892.

— *stramonifo'lia.* 3. Yellow. June. Mexico. 1823. Evergreen.

Withe Rod, American. *Vibu'rnum nu'dum.*

Withy. *Sal'ix fra'gilis:*

Witloof. A variety of *Cicho'rium Intybus.*

Witse'nia. (Named after *M. Witsen*, a Dutch patron of botany. Nat. ord., *Irideæ*; Tribe, *Sisyrinchieæ*.)

Greenhouse, purplish-flowered shrubs, 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 fibry loam, with a little rough charcoal, and well-drained. Winter temp., 40° to 48°.

W. corymbo'sa. 3. June. 1803. B. M. t. 895.

— *mau'ra.* 4. December. 1790. B. E. t. 5.

— *parti'ta.* April. 1822. This is now known as

KLATTIA PARTITA.

— *ramo'sa.* 1. April. 1819.

Woad, Dyer's. *Isa'tis tincto'ria.*

Woad, Waxen. *Geni'sta tincto'ria.*

Woad, Wild. *Re'seda Lute'ola.*

Wolf Berry. *Symphoricar'pus occi'denta'lis.*

Wolf Chop. *Mesembrya'nthemum lupi'num.*

Wolf's Bane. *Aconi'tum.*

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. (Named after *Dr. Wollaston*, an eminent chemist. Nat. ord., *Compositæ*.) See **Wedelia.**

An annual. Seeds in a hotbed in March or April; plants pricked out, and afterwards bloomed in the greenhouse or plant-stove; sandy loam and peat.

W. biflo'ra. See *Wedelia biflora.*

Woman's-cap Orchid. *Thelymi'tra.*

Wood Ashes. See **Ashes.**

Woodbine. *Loni'cera Periclyme'num.*

Woodbine, American. *Ampe'lo'psis quinquefo'lia.*

Wood Fern. *Polypo'dium vulga're.*

Woodfo'rdia. (After *J. Woodford*, an Edinburgh botanist. Nat. ord., *Lythrariceæ*.)

Stove shrub. Compost of sandy loam and peat. Seeds; cuttings.

W. floribu'nda. 1-4. Scarlet. May. India. Syns., *W. tomentosa*, *Grislea tomentosa*, B. M. t. 1906, and *Lythrum fruticosum*, Andr. Rep. t. 467.

Wood Lice. See **Oniscus.**

Wood Lily. *Pyro'la mi'nor* and *Tri'llium.*

Wood Nut. *Co'rylus Avella'na.*

Wood Laurel. *Da'phne Laure'ola.*

Woodruff or Woodrowel. *Aspe'ricula.*

Woo'dsia. (Named after *J. Woods*, a British botanist. Nat. ord., *Filices*.)

Hardy, brown-spored ferns, except *mo'llis* and *pube'scens*, which require the stove. See **FERNS.**

W. cauca'sica. September. Caucasus.

— *glabe'lla.* September, N. Amer. 1827.

— *hyperbo'rea.* 3. July. Scotland. Eng. Bot. ed. 3. t. 1863.

— *ilve'nsis.* 3. June. Britain. Eng. Bot. ed. 3. t. 1862.

— *mo'llis.* July. Brazil.

— *obtu'sa.* 3. June. N. Amer. 1836.

— *Perrinia'na.* June. N. Amer.

— *polysticho'i des.* China. 1863.

— — — *Ve'i'tchii.* 3-1. Japan. 1861.

— *pube'scens.* June. Brazil. 1826.

— *scopuli'na.* Rocky Mountains. 1882.

— *vesti'ta.* June. N. Amer. 1816.

Wood Sorrel. *Oxa'lis Acetose'lla.*

Wood Tongue Fern. *Drymo'glossum.*

Wood Violet. *Vi'ola sylva'tica.*

Woodwa'rdia. (Named after *T. J. Woodward*, a British botanist. Nat. ord., *Filices*.)

Hardy brown-spored ferns. *W. radi'cans* requires shelter in winter. See **FERNS.**

W. angustifo'lia. 1. August. N. Amer. 1812

Syn., *Lorinseria areolata.*

— *Harla'ndii.* 1-13. Hong Kong.

— *japo'nica.* September. Japan.

— *orienta'lis.* China. 1858.

- W. radi'cans.* 1½. July. Madeira. 1779.
 — *crista'ta.* 1878.
 — *thelypteroides.* September. N. Amer.
 — *virg'nicæ.* 1. August. N. Amer. 1724.

Wood Waxen. *Geni'sta tinctor'ria.*

Woody Nightshade. *Sola'num Dulcamara.*

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.

Wo'rmia. (Named after *O. Wormius*, a Danish naturalist. Nat. ord., *Dillenia* etc.) Allied to *Dillenia*.)

- Stove evergreens. For culture, see *DILLENTIA*.
W. Burbi'dgei. Yellow. Borneo. 1879. B. M. t. 6531.
 — *dentata.* See *W. trigueta*.
 — *trigueta.* 20. White. May. Ceylon. 1818. Syn., *W. dentata*.

Wormwood. *Artemi'sia.*

Wounds. See **Extravasated Sap.**

Woundwort. *Anthy'llis vulneraria.*

Wreathe-wort, Purple. *Orchis ma'scula.*

Wrightia. (Named after *Dr. Wright*, of Jamaica. Nat. ord., *Apocynaceæ*. Allied to *Alstonia*.)

Stove evergreen shrubs, or trees, with white flowers, and from the East Indies, except where otherwise described. For culture, see *ALSTONIA*.

- W. angustifolia.* 8. September. S. Amer. 1752.
 — *antidysenterica.* See *W. zeylanica*.
 — *cocci'nea.* 12. Scarlet. July. 1822. B. M. t. 2896.
 — *du'bia.* Orange. June. 1813. Syn., *Cameraria dubia*, B. M. t. 1846.
 — *pube'scens.* 4. Green, yellow. March. N. Holland. 1829. B. C. t. 1929.
 — *tineto'ria.* 15. 1812. B. R. t. 933.
 — *zeylanica.* 10. 1778. Syn., *W. antidysenterica*.

Wulfe'nia. (Named after *F. Wulfen*, a botanical author. Nat. ord., *Scrophulariaceæ*.)

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. Amherstiana.* 3. Lilac. July. Chinese Tartary. 1846.
 — *carinthi'aca.* 1½. Blue. July. Carinthia. 1817. B. M. t. 2500.
 — *Notonia'na.* See *Klugia Notoniana*.

Wulffia. (Named after *J. C. Wulff*, author of "Flora Borussia." Nat. ord., *Compositæ*. Allied to *Rudbeckia*.)

Stove perennial 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. maculata. Yellow. June. Brazil. 1822. B. R. t. 662. Syn., *Gymnolomia maculatum*.

Wu'rmbea. (Named after *F. V. Wurmbe*, a Dutch naturalist. Nat. ord., *Liliacæ*; Tribe, *Anguillaricæ*. Allied to *Androcymbium*.)

Half-hardy or greenhouse bulbs, from South Africa, and all but one white-flowered. For culture, see *MELANTHIUM*. The three last are sometimes regarded as varieties of *W. campanulata*.

W. campanulata. ½. June. Syn., *Melanthium monopetalum*, B. M. t. 1291.

— *longiflora.* ¾. May. 1788.

— *pub'ula.* ½. May. 1800.

— *purpurea.* 1. Purple. May. 1788. Syn., *Melanthium spicatum*, B. M. t. 694.

Wych Elm. *U'lmus montana.*

Wye'thia. (After *N. B. Wyeth*, the discoverer of this genus. Nat. ord., *Compositæ*.)

Hardy perennial herbs. For culture, see *HELIANTHUS*.

W. angustifolia. ½-2. Yellow. Autumn. Rocky Mountains.

Wymot. *Althæa.*

X.

Xanthi'sma. (From *xanthisma*, yellowness; on account of its yellow flowers. Nat. ord., *Compositæ*; Tribe, *Asteroidææ*. Allied to *Haplopappus*.)

Hardy annual. Seeds in the open border in April.

X. texanum. 1-3. Yellow. Texas. 1877. B. M. t. 6275.

Xanthocephalum. (From *xanthos*, yellow, and *cephale*, a head; in the flower-heads are yellow. Nat. ord., *Compositæ*; Tribe, *Asteroidææ*.)

X. centauroides is a greenhouse sub-shrub, which may be increased by cuttings; *X. gymnospermoides* is a hardy annual by seeds.

X. centauroides. 1½. Yellow. Summer. Mexico. 1826. Syn., *Grindelia coronopifolia*.

— *gymnospermoides.* 2-4. Orange-yellow. September. New Mexico. 1859. Syn., *Gutierrezia gymnospermoides*, B. M. t. 5155.

Xanthoceras. (From *xanthos*, yellow, and *keras*, a horn; alluding to the yellow horn-like glands or nectaries between the petals. Nat. ord., *Sapindacææ*.)

A small hardy tree. It is difficult to propagate in any other way than from seeds, but root-cuttings sometimes succeed. Light garden-soil.

X. sorbifolia. White, purple. China. 1870.

Xanthochymus. (From *xanthos*, yellow, and *chymos*, juice; the plants

having abundant yellow juice. Nat. ord., *Guttiferæ*; Tribe, *Garciniæ*.)

Stove evergreen trees. For cultivation, see GARCINIA.

X. dulcis. 20. Creamy-white. February. Mollucca Islands. 1820. B. M. t. 3088.

— *ovalifolius*. E. Indies. Gamboge erroneously was supposed to be obtained from its sap. Syn., *Garcinia ovalifolia*.

— *pictorius*. 40. White. E. Indies. Syn., *Garcinia Xanthochymus*.

Xanthorhiza. Yellow Root. (From *xanthos*, yellow, and *rhiza*, a root. Nat. ord., *Ranunculaceæ*.)

Hardy evergreen shrub. Suckers; sandy loam and peat; does best in a moist situation.

X. apifolia. 3. Purple, green. February. N. America. 1766. B. M. t. 1736.

Xanthorrhæa. Grass-tree. (From *xanthos*, yellow, and *rheo*, to flow; yellow juice. Nat. ord., *Juncæ*; Tribe, *Xeroteæ*.)

Greenhouse, white-flowered plants, from Australia. For culture, see APHYLLANTHES.

X. australis. 3. 1824. Evergreen.

— *bracteata*. 2. 1810. Herbaceous.

— *haustilis*. 4. 1803. Evergreen. B. M. t. 4722.

Syn., *X. resinosa*.

— *humilis*. See *X. Pumilio*.

— *meadia*. 2. 1803. Evergreen.

— *minor*. 2. 1804. Herbaceous.

— *Preissii*. 1-8. Greenish-yellow. B. M. t. 6033.

— *Pumilio*. 2. 1825. Syn., *X. humilis*.

— *quadrangulata*. Greenish. S. Australia. 1874.

— *resinosa*. See *X. hastilis*.

Xanthosia. (From *xanthos*, yellow; the plants having a yellow down. Nat. ord., *Umbelliferæ*.)

Greenhouse shrubs. For cultivation, see TRACHYMENE.

X. pilosa. 1-2. White. S. E. Australia. Syns., *X. hirsuta* and *X. montana*. Trans. Linn. Soc. x., t. 22.

— *rotundifolia*. 1½. White. June. W. Australia. 1836. B. M. t. 3582.

Xanthosoma. (From *xanthos*, yellow, and *soma*, a body; the edible roots. Nat. ord. *Aroideæ*; Tribe, *Colocasiæ*. Allied to *Caladium*.)

Stove plants. For culture, see CALADIUM.

X. auriculatum. Spathe green, white; spadix white. Tropical America. 1869.

— *Barilleti*. 3. Brazil. Rev. Hort. 1882, p. 269, fig. 68.

— *belophyllum*. Yellow. Tropical America.

— *helleborifolium*. 1½-2. Spathe and spadix whitish. Tropical America. 1793.

Syns., *Acontias helleborifolius* and *Arum helleborifolium*.

— *Jacquinii*. Yellow. May. S. America. 1816. Evergreen.

— *Lindeni*. 1-1½. Spathe brownish-green outside, white within. Columbia. 1871. Syn., *Phyllotænium Lindeni*.

— *magnificum*. A robust variety. Syn., *Phyllotænium Lindeni*, var. *magnificum*.

— *maculata*. Syn., *Alocasia albo-violacea*.

— *Maximiliani*. 5. Purple-violet, whitish, green. Brazil. 1860.

— *mirabile*. Spathe pale yellow. Tropical S. America. 1874.

X. plu'mbea. See *Alocasia cuprea*.

— *robustum*. Yellow. Mexico.

— *sagittifolia*. White. May. W. Indies. 1710. Herbaceous.

— *violaceum*. White, yellow; leaf-stalks purple. Tropical America. 1864.

— *Wallisii*. Leaves green, with whitish veins. Antioquia. 1869.

Xanthoxylum. See *Zanthoxylum*.

Xeranthemum. (From *xeros*, dry, and *anthos*, a flower; everlasting flower. Nat. ord., *Compositæ*; Tribe, *Inuloidæ*.)

The flowers, after being dried, may be dyed of any colour. Hardy annuals. Seeds in the open border in April.

X. annuum. 3. Purple. July. South Europe. 1570.

— *cane'scens*. B. M. t. 420. See *Helipterum canescens*.

— *erectum*. White. June. Persia. 1836.

— *fulgidum*. B. M. t. 414. See *Helichrysum fulgidum*.

— *herbaceum*. Andr. Rep. t. 487. See *Helichrysum squamosum*.

— *inapertum*. 2. Purple. July. South Europe. 1620.

— *longipapposum*. White. June. Persia. 1836.

— *orientale*. See *Chardinia xeranthemoides*.

— *rigidum*. Andr. Rep. t. 387. See *Helichrysum striatum*.

— *sesamoides*. B. M. t. 425, and var. *sulphureum*. B. M. t. 763, are synonyms of *Helipterum sesamoides*.

Xerone'ma. (From *xeros*, dry, and *nema*, a thread; because the filaments of the stamens dry up and persist. Nat. ord., *Liliacæ*; Tribe, *Asphodeleæ*. Allied to *Anthericum*.)

A beautiful stove herbaceous perennial, with the foliage and habit of an iris. Seeds, and divisions of the rootstock. Rich, sandy loam and leaf-mould. Summer temp., 60° to 80°; winter, 55° to 65°.

X. Modrei. 1½. Crimson. New Caledonia. 1878. G. C. 1878, x. p. 17.

Xerophyllum. (From *xeros*, dry, and *phyllon*, a leaf; dry, grassy leaves. Nat. ord., *Liliacæ*; Tribe, *Nartheciæ*. Allied to *Helonias*.)

White-flowered, herbaceous perennials, from North America. Seeds and division of the plant in spring. A rather moist, peaty border suits them best. *X. Sabadii* requires a stove.

X. asphodeloides. 1. May. 1765. Syns., *X. setifolium*, B. R. t. 1613, and *Helonias asphodeloides*, B. M. t. 748.

— *gramineum*. See *Stenanthium angustifolium*, var. *gramineum*.

— *Sabadii*. 3. Vera Cruz. 1830.

— *tenax*. 1½. May. 1811. Syn., *Helonias tenax*.

Xerophyta. (From *xeros*, dry, and *phyton*, a plant; dry plant. Nat. ord., *Amaryllidæ*; Tribe, *Velloziæ*.) See *Vellozia*.

Stove perennial. Seeds; suckers. Sandy loam, mixed with a little brick-rubbish. Care must be taken not to overwater the plants. Summer temp., 65° to 85°; winter, 60° to 70°.

X. retinervis. See *Vellozia retinervis*.

Xerotes. (From *xerotes*, dryness; the nature of these plants. Nat. ord., *Juncaceæ*; Tribe, *Xeroteæ*.)

Greenhouse, perennial herbs. Rich, light soil. Divisions.

X. longifolia. 3. Greenish-white. June. Australia. 1798. B. E. 1838, t. 3. Australian Tussock Grass.

— *rigida*. 1. Greenish-white. June. Australia. 1791. B. C. t. 798.

Ximenesia. (Named after J. Ximenes, a Spanish apothecary. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)

Yellow-flowered, Mexican plants. Annuals, by seeds in the open border in April; perennials, also, by division of the plant in spring, and these, in general, will want the protection of a dry, cool pit in winter.

ANNUALS.

X. Cavanillei. A synonym of *Echinacea heterophylla*.

— *foetida*. 2½. August. 1824. A synonym of *Encelia foetida*.

— *heterophylla*. 2. July. 1827. A synonym of *Encelia heterophylla*.

HERBACEOUS PERENNIALS.

X. cordata. 3. September. 1826. A synonym of *Encelia cordata*.

— *enceloides*. See *Verbesina enceloides*.

Xime'nia. (Named after F. Ximenes, a Spanish naturalist. Nat. ord., *Olacaceæ*.)

Stove or greenhouse shrubs or trees. Cuttings of half-ripened shoots in sand, under a glass, in May, and in bottom-heat; sandy, fibry peat, and lumpy loam. Winter temp., 55° to 60°; summer, 60° to 85°.

X. americana. 15. Yellowish. Tropics. 1759.

— *incarnata*. 40. White. Jamaica. 1810.

— *lanceolata*. Yellow. April. China. 1820.

— *oblongifolia*. Green. June. Australia. 1823.

Xiphi'dium. (From *xiphos*, a sword; sword-like leaves. Nat. ord., *Hæmodoraceæ*; Tribe, *Hæmodoreæ*. Allied to *Wachendorfia*.)

Stove, West Indian, herbaceous perennials. Divisions of the plant as fresh growth commences; rich, fibry loam and fibry peat, and a small portion of charcoal and sand. Winter temp., 50° to 58°; summer, 60° to 85°.

X. floribundum. 1. White. S. America. 1845.

— *album*. 1½. White. 1787.

— *cæruleum*. 1½. Blue. 1793.

— *giganteum*. White. October. 1845.

Xiphion. (From *xiphion*, a corn-flag. Nat. ord., *Irideæ*; Tribe, *Moraceæ*.)

These are the Irises with bulbous rootstocks. For cultivation, see IRIS. A full account of this genus is given by Professor M. Foster in the Journal of the Royal Horticultural Society, 1893.

X. filifolium. 2. Violet, yellow. Spain and Morocco. 1869. B. M. t. 5923.

— *histris*. ¾. Purple, yellow. Mount Lebanon. 1873. B. M. t. 6033.

— *ju'nceum*. 1½. Yellow. July. Algeria. 1869. Syn., *Iris juncea*. B. M. t. 5890.

— *Kolpakowskiana*. ½. Violet-purple, lilac, yellow. Spring. Turkestan. 1878. B. M. t. 6489. Syn., *Iris Kolpakowskiana*.

X. planifolium. ½. Lilac, yellow. Algeria. Syn., *Iris alata*.

— *reticulata*. ½. Violet-purple, yellow. Asia Minor. Syn., *Iris reticulata*. B. M. t. 5577. See G. C. 1885, xxiii., p. 607.

— *Sisyri'nchium*. Blue-purple, yellow. S. Europe. Syn., *Iris Sisyri'nchium*.

— *tingita'num*. 2. Violet - purple, yellow. Morocco. 1872. Syn., *Iris tingitana*. B. M. t. 6775.

— *vulga're*. 1-2. Violet-purple. June. Spain. Syn., *Iris Xiphium*. B. M. t. 666.

Xiphop'teris. Sword Fern. (From *xiphos*, a sword, and *pteris*, a fern. Nat. ord., *Filices*.) Now united with **Poly-podium**.

Stove, brown-spored ferns. See FERNS.

X. heterophylla. ½. June. N. Holland 1824.

— *myosuroi'des*. June. W. Indies. 1824.

— *serrulata*. ½. June. W. Indies. 1823.

Xylo'bium. (From *xylon*, wood, and *bios*, life; plants growing on wood. Nat. ord., *Orchideæ*; Tribe, *Vandæ-Maxillariæ*.)

Stove, epiphytal orchids. For culture, see MAXILLARIA.

X. Colleyi. Reddish-brown with purple spots. Trinidad. Syn., *Maxillaria Colleyi*.

— *conca'vum*. ¾. Pale yellow. June. Guatemala. 1844. Syn., *Maxillaria concava*.

— *corruga'tum*. Pale brownish-purple; lip pale yellow with purple veins. Venezuela. 1844. Syn., *Maxillaria corrugata*.

— *de'color*. 1. Sulphur, white. Jamaica. Syn., *Maxillaria decolor*. B. M. t. 3981.

— *elonga'tum*. 1. Pale yellow; lip purplish-brown. Central America. 1847. Syn., *Maxillaria elongata*.

— *fovea'tum*. 1. Pale straw-colour. Demerara. 1839. Syn., *Maxillaria foveata*.

— *leontoglo'ssum*. 1-3. Yellow with red spots. March. New Grenada. B. M. t. 7085. Syn., *Maxillaria leontoglossa*.

— *pallidi'florum*. 1. Pale sulphur, whitish. Venezuela. 1826. *Maxillaria pallidiflora*. B. M. t. 2866.

— *squa'lens*. 1. Flesh-colour, with purple stripes; lip dark purple. Brazil. 1828. Syn., *Maxillaria squalens*. B. M. t. 2955.

Xylome'lum. (From *xylon*, wood, and *melon*, an apple; in allusion to the woody fruit. Nat. ord., *Proteaceæ*.)

Greenhouse shrub. Allied to LAMBERTIA, to which refer for cultivation.

X. pyriforme. New S. Wales. 1869.

Xylophy'lla. (From *xylon*, wood, and *phyllon*, a leaf; texture of the leaves. Nat. ord., *Euphorbiaceæ*; Tribe, *Phyllanthææ*.) See **Phyllanthus**.

Stove, yellow- and red-flowered evergreens, from Jamaica, unless otherwise mentioned. For culture, see PHYLLANTHUS.

X. angustifolia. See *Phyllanthus angustifolius*.

— *elongata*. B. C. t. 1091. See *Phyllanthus angustifolius*.

— *falcata*. B. E. t. 373. See *Phyllanthus falcatus*.

— *latifolia*. B. M. t. 1021. See *Phyllanthus speciosus*.

— *montana*. B. M. t. 2652. See *Phyllanthus angustifolius*.

X. obovata. See *Phyllanthus obovatus*.
— *speciosa*. See *Phyllanthus speciosus*.

Xylo'pia. (From *xylon*, wood, and *piéron*, bitter; the wood and fruit of *X. gla'bra* are called Bitterwood in the West Indies. Nat. ord., *Anonaceæ*.)

Stove trees or shrubs. Cuttings of firm, stubby side-shoots one year old, with most of the leaves adhering, in sand, under a bell-glass; sandy loam and fibry peat. Winter temp., 50° to 55°; summer, 60° to 85°.

X. frutescens. 4. Guiana. 1823.

— *glabra*. 40. Jamaica. 1820.

— *muricata*. 4. W. Indies. 1779.

Xy'ris. (A name used by Dioscorides for *Iris fetidissima*. Nat. ord., *Xyrideæ*.)

Stove, grass-like perennial. Light rich soil. Divisions.

X. altissima. B. C. t. 1900. A synonym of

Bobartia spathacea.

— *operculata*. 1. Whitish; bracts black.

June. Australia. 1804. B. M. t. 1158.

Xysmalo'bium. (From *xysma*, a fragment, and *lobos*, a division; the corona is finely divided. Nat. ord., *Asclepiadaceæ*.)

Warm greenhouse perennial herb, requiring the same treatment as GOMPHOCARPUS.

X. padifolium. 3. Purplish-green, yellowish. South Africa. 1867. Syn. *Gomphocarpus padifolius*. Ref. Bot. t. 254.

Y.

Yacca-wood Tree. *Podocarpus Purdieana*.

Yam. *Dioscorea*.

Yang-mae Tree. *Myrica Nagei*.

Yarrow. *Achillea*.

Yarrow, Soldier's. *Stratoides aloides*.

Yate, or Yeit Tree. *Eucalyptus cornuta*.

Yellow Archangel. *Lamium Galeobdolon*.

Yellowby. *Chrysanthemum segutum*.

Yellow Cress. *Barbarea praecox*.

Yellow Elder. *Tecoma stans*.

Yellow Everlasting Flower. *Helichrysum arenarium*.

Yellow Garden Hawk Weed. *Toxipis barbata*.

Yellow Iris. *Iris Pseudocorus*.

Yellow Larkspur. *Tropaeolum*.

Yellow Battle. *Rhinanthus Cristagalli*.

Yellow Rocket. *Barbarea vulgaris*.

Yellow Star Flower. *Sternbergia lutea*.

Yellow Star of Bethlehem. *Gagea lutea*.

Yellow Sultan. *Centauria suaveolens*.

Yellow Water Lily. *Nuphar luteum*.

Yellow Water Lily Fly. *Lispe tentaculata*. This insect is about a quarter of an inch long, and half an inch across the wings. Its body is black, covered with ash down on the back, the head is gilded, the wings grey, and



the abdomen has three whitish triangular spots. It deposits its eggs on the petals of *Nuphar luteum*. These eggs, which are united into bundles, often as many as 100 to a bundle, are oblong, and when highly-magnified exhibit a finely reticulated surface.

Yellow Weed, Dyer's. *Reseda luteola*.

Yellow Wood. *Cladrastis tinctoria*, *Ochrosia borbonica* and *Podocarpus*.

Yellow Wort. *Blackstonia perfoliata* (Syn., *Chloera perfoliata*.)

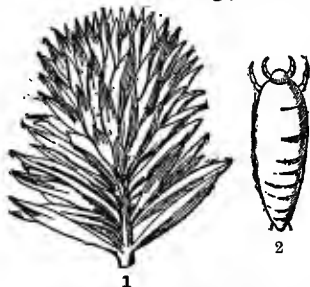
Yew. *Taxus*.

Yew, Chinese. *Podocarpus chinensis*.

Yew, Clustered-flowered. *Cephalotaxus*.

Yew-Gall and Yew-bud Mite. At the termination of the shoots of Yew-trees are often to be found rather large galls, resembling in general appearance miniature artichokes (Fig. 1); they are formed of a large number of densely packed imbricating leaves, and are caused by the attacks of the larva of a small two-winged fly, named *Cecidomyia*

ta'xi. The fly, which does not appear until June, is about one-sixth of an inch long, and about one-third of an inch in expanse; the thorax, antennæ, and legs are ochreous, the abdomen is orange-yellow, and the wings pale greyish. It deposits its eggs in June in



the young growing buds. The larvæ, when hatched, eat into the centre of the bud, causing an arrest of its growth, and gradually it develops into a gall instead of forming a leafy shoot. Inside the gall the yellowish larva passes the winter, changing to the pupa stage in April or May of the following spring. The chrysalis at first is pale, but gradually becomes of a deep brown with age. In June the chrysalis pushes through the top of the gall, and the perfect fly emerges.

The buds of the Yew-tree are also attacked and their growth disturbed by a minute mite, shown at Fig. 2, greatly magnified. We have not seen this mite ourselves, but have borrowed our account and figure of it from the "Gardeners' Chronicle," 1875, iii. p. 659, where it is stated to be causing considerable damage to the hedges of Yew-trees at South Kensington "by injuring the buds, many of which were going black and decaying."

It is described under the name of *Tetranychus ta'xi*; it is "fleshy, milk-white, and translucent, and it has no eyes." The specimens examined had but four legs, and were thought to be "the young of a six-legged, or possibly an eight-legged species." The tail is furnished with two minute bristles.

Where Yew-trees are attacked so severely as to injure their growth to any great extent, either by the *Cecidomyia* or the *Tetranychus*, the only remedy is to hand-pick the galls and the mite-infested buds, and destroy them by burning. In the case of the galls they should be picked and destroyed in the month of March or April whilst the insect is still in a larval state. In the case of the

mite-infested buds we should recommend that they be destroyed as soon as detected.

Yu'cca. Adam's Needle. (Name of the plant in Peru. Nat. ord., *Liliaceæ*; Tribe, *Draceneæ*.)

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. *Y. aloifolia* 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. acuminata*. 6. August. 1800. Swt. Fl. Gard. t. 195.
 — *acutifolia*. 5. White, brown. 1869.
 — *aletriformis*. 2. Cape of Good Hope. 1823. Greenhouse.
 — *aloifolia*. 2. August. S. Amer. 1696. B. M. t. 1700.
 — — *pe'ndula*. 12. August.
 — — *variegata*. 2. August.
 — *angustifolia*. 2. July. Missouri. 1811. B. M. t. 2236.
 — *arcuata*. 1. July. 1817.
 — *argospatha*. White. 1869.
 — *bacca'ta*. White. New Mexico. 1873.
 — *Boerhaavii*. 1870.
 — *canaliculata*. 4. Mexico.
 — *circinata*. 1870.
 — *conca'va*. 1½. August. 1816.
 — *conspicua*. 3. 1818. Greenhouse.
 — *constricta*. 10. White. Mexico. 1862. Syn., *Y. albo-spica*.
 — *cornu'ta*. Leaves broad, red-edged. 1862.
 — *crenulata*. 1818.
 — *De Smetiana*. 1868.
 — *draco'nis*. 8. August. S. Amer. 1732. Greenhouse. B. R. t. 1894.
 — *Ehrenbergii*. Mexico. 1861.
 — *ela'ta*. 7-10. Mexico. Gard. and For. 1889, ii. p. 568, fig. 146.
 — *ensifolia*. White. Mexico. 1870.
 — *exigua*. White, green. S. United States. 1873.
 — *filamentosa*. 2. September. Virginia. 1875. B. R. t. 900.
 — — *grandiflora*. White. S. United States. 1873. Syns., *Y. filamentosa*, vars. *major* and *maxima*.
 — — *variegata*. 2. September.
 — *filifera*. 16. White. Mexico. 1876.
 — *flaccida*. 2. 1816. B. R. t. 1895.
 — *flaxilis*. 4. White. Mexico, 1859.
 — — *falca'ta*. White. 1879.
 — — *no'bilis*. 1879.
 — — *semiteyli'ndrica*. 1870.
 — *fragilifolia*. 1870.
 — *funifera*. Mexico. 1866.
 — *gigantea*. 4-6. White. 1859.
 — *glauca*. White. S. United States. 1814. B. M. t. 2662.
 — *glaucescens*. 2. July. N. Amer. 1819. Swt. Fl. Gard. t. 53.
 — *gloriosa*. 4. July. America. 1596. B. M. t. 1260.
 — — *fo'vitis-variegata'tis*. July.
 — — *me'dio-stria'ta*. Leaves with a central whitish-green stripe. 1880.
 There are, besides the above, the following varieties of this species:—*phica'ta*, *glaucescens*, *no'bilis*, *parviflora*, *minor*, *no'llis*, *tristis*, *pruinosa*, and *Ellaco'mbei*.
 — *gracilis*. July. Mexico. 1829.

- Y. graminifolia*. Mexico. 1838.
 — *guatemalensis*. 6-8. White. Mexico. 1873.
 — *latevirens*. Mexico. 1838.
 — *lineda-ta-lu'tea*. Mexico. 1863. Half-hardy.
 — *longifolia*. Mexico. 1830.
 — *macrocarpa*. 4. Arizona. 1881.
 — *obliqua*. 4. 1808.
 — *ma'jor*. 4. 1808.
 — *orchioides*. 1½. White. 1861.
 — *ma'jor*. White. United States. 1875.
 Syn., *Y. antwerpensis*.
 — *pa'tens*. 1870.
 — *Peacockii*. Mexico? 1879.
 — *periculo'sa*. 1870.
 — *pitcairniifolia*. Mexico. 1838.
 — *puberula*. August. Swt. Fl. Gard. t. 251.
 — *recurva*. See *Y. recurvifolia*.
 — *recurvifolia*. White, red. S. United States.
 1794. Salis. Parad. t. 31. Syns., *Y.*
 recurva, *Y. pendula*, and *Y. japonica*.
 — *rufo-cincta*. 1½. July. 1816. Stove.
 — *rupicola*. 3. White, greenish. Texas. 1850.
 Syn., *Y. lutescens*.
 — *scabri'folia*. 1870.
 — *serratifolia*. Mexico. 1838.
 — *serrulata*. 10. Carolina. 1808.
 — *spectabilis*. Mirador. 1861.
 — *Stokesii*. Leaves variegated. 1862.
 — *stri'cta*. 1. July. Carolina. 1817. B. M.
 t. 2222.
 — *superba*. 10. August. B. R. t. 1690.
 — *tenuifolia*. 1. Malta. 1817.
 — *tortulata*. White, red. S. United States.
 1873.
 — *Treculeana*. 20. White. Texas. 1858.
 — *Whipplei*. 4-12. White. California. 1876.

Z.

Zacintha. (From *Zacanthus*, the ancient name of *Zante*, where this plant was first discovered. Nat. ord., *Compositæ*.)

Hardy annual herb. Seeds sown in the open border in April.

Z. verrucosa. ½-1. Yellow. Summer. Mediterranean region. Sibth. Fl. Gr. t. 820.

Zalacca. (From the Malayan name. Nat. ord., *Palmæ*; Tribe, *Lepidocaryæ*.)

Stemless stove palms. For cultivation, see CYCAS.

- Z. Blumeana*. See *Z. edulis*.
 — *edulis*. Malay Archipelago. 1847. Syns.,
 Z. Blumeana and *Calamus Zalacca*.
 — *nitida*. West Africa. 1884.
 — *Wagne'ri*. India. 1870.
 — *Wallichiana*. Malay Archipelago. 1847.

Zaluzia'nskya. (Named after Dr. Adam Zaluziansky, a botanist of the seventeenth century. Nat. ord., *Scrophulariaceæ*.)

Half-hardy annuals except *Z. lychnidea*, which is a greenhouse sub-shrub. Seeds sown in a warm frame in March or April, or cuttings in autumn. Sandy loam and peat. Winter temp. not below 45°.

- Z. capensis*. ½-1. Whitish. Spring. South Africa.
 — *selaginoides*. ½-1. Yellow, white. May. Cape of Good Hope. 1854.
 — *lychnidea*. ½-1. Pale yellow. Summer. South Africa. 1776. Syns., *Eritrus lychnidea*, B. M. t. 2504, and *Nycteria lychnidea*.

Zamia. (From *zamia*, loss; the barren appearance of the male flowers. Nat. ord., *Cycadaceæ*.)

A race of plants intermediate in habit 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. amphifolia*. Columbia. 1878.
 — *angustifolia*. 2. West Indies. Jacq. Ic. t. 636.
 — *ca'fra*. A synonym of *Encephalartos caffer*.
 — *calocoma*. See *Microcycas calocoma*.
 — *Chigua*. 4. Darien. 1847. Syns., *Z. Lindleyi* and *Z. princeps*.
 — *cyca'difolia*. 3. 1775.
 — *cyca'dis*. A synonym of *Encephalartos caffer*.
 — *de'bilis*. 1. July. West Indies. 1777. B. C. t. 155.
 — *Fische'ri*. 3. Central America. 1849. G. C. 1883, xix. p. 213.
 — *Fraseri*. See *Macrocramia Fraseri*.
 — *furfuracea*. 3. July. West Indies. 1691. B. M. t. 1969.
 — *Ghelli'nckii*. See *Encephalartos Ghellinckii*.
 — *horrida*. See *Encephalartos horridus*.
 — *integrifolia*. 2. July. West Indies. 1768. Jacq. Ic. t. 635; B. M. t. 1851.
 — *K'ckxii*. Cuba.
 — *lanuginosa*. A synonym of *Encephalartos lanuginosus*.
 — *latifolia*. 6.
 — *Letboldii*. Mexico. 1843.
 — *Lindeni*. 8. Ecuador. 1875.
 — *Lindleyi*. See *Z. Chigua*.
 — *Loddigesii*. Mexico. 1844.
 — *longifolia*. A synonym of *Encephalartos longifolius*.
 — *media*. B. M. t. 1838. See *Z. pumila*.
 — *montana*. 4. Columbia. 1873.
 — *muricata*. Venezuela. 1849.
 — *obliqua*. 6. Columbia. 1878. G. C. 1882, xvii. p. 460.
 — *Otto'nia*. Cuba.
 — *pi'cta*. Mexico.
 — *prasin'a*. Honduras. 1881.
 — *princeps*. See *Z. Chigua*.
 — *prunifera*. 14.
 — *pumila*. 1½. West Indies. 1812. B. M. t. 2006. Syn., *Z. media*. Jacq. H. Schoenb. tb. 397-8.
 — *pu'ngens*. A synonym of *Encephalartos pungens*.
 — *pygmaea*. 1. May. West Indies. B. M. t. 1741.
 — *repa'nda*. 6.
 — *Roe'zlii*. Columbia. 1873.
 — *Sieboldi angustifolia*. Cuba. 1878.
 — *Skimme'ri*. 6. Veraguas. 1851. B. M. t. 5242.
 — *spino'sa*. 5.
 — *spiralis*. A synonym of *Encephalartos spiralis*.
 — *tenuifolia*. See *Macrocramia Fraseri*.
 — *tenuis*. 1. Bahamas.
 — *tonkinensis*. Tonkin. 1885. Ill. Hort. t. 547.
 — *tridentata*. A synonym of *Encephalartos tridentatus*.
 — *villo'sus*. See *Encephalartos villosus*.
 — *Wall'sii*. Columbia. 1875.
- Zamioculcas.** (A name compounded of *Zamia*, and *Culcas*, an Arabic name for *Colocasia*; in allusion to its being an Aroid with *Zamia*-like leaves. Nat. ord., *Aroidæ*; Tribe, *Zamioculcastæ*. Syn., *Gonatopus*.)

Stove herbaceous evergreens. Remarkable among Aroids for having pinnate leaves. Divisions of the plant at the root; young plants may also be obtained from the leaflets after they have disarticulated from the rachis, as follows:—Place some leaflets upon some soil, which must be kept damp; in a few days the basal ends of the leaflets commence to swell, and each forms after a short time a small tuber. The tuber with the leaf attached may then be planted in a small pot, but should only just be covered with earth; roots and leaf-buds quickly form, and soon a young plant is established. Sandy loam and leaf-mould, mixed with bits of broken charcoal. Moist atmosphere. Summer temp., 66° to 85°; winter, 60° to 70°.

Z. Boivini. 3. Spathe greenish-yellow, brown; spadix greenish-yellow. Zanzibar. 1873. B. M. t. 6026. Syn., *Gonatopus Boivini*.
— *Loddigei*. 14. Spathe green. Zanzibar. 1828. B. M. t. 5985. Syn., *Caladium zamicefolium*.

Zano'nia. (After James Zanoni, once superintendent of the Botanic Garden at Bologna. Nat. ord., *Cucurbitaceæ*.) See **Alsomitra**.

Z. sarcophylla. See **Alsomitra sarcophylla**.

Zanthoxylum. Toothache-tree. (From *xanthos*, yellow, and *xylon*, wood. Nat. ord., *Rutaceæ*; Tribe, *Zanthoxyloceæ*. Syn., *Xanthoxylum*.)

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. alatum. Spring. Hardy. Half evergreen. — *fraxineum*. 15. March. N. Amer. 1759.
— *mitis*. 10. Yellowish. March. N. Amer. 1818.
— *tricarpum*. 6. July. N. Amer. 1806.

STOVE EVERGREENS.

Z. affine. Mexico. 1826.
— *Budru'nga*. 50. March. E. Ind. 1825.
— *clavata*. 50. W. Ind. 1739.
— *hermaphroditum*. 60. Guiana. 1823.
— *heterophyllum*. Bourbon. 1823.
— *juglandifolium*. W. Ind. 1822.
— *nitidum*. 6. China. 1823. B. M. t. 2558.
— *pinnatum*. May. Norfolk Island. 1829.

Syns., *Blackburnia pinnata* and *Ptelea pinnata*.

— *piperitum*. 6. September. Japan. 1773. Greenhouse.
— *pterosa*. August. Jamaica. 1768.
— *sapindoides*. Jamaica.
— *spinosum*. 6. Jamaica. 1824.
— *tragodes*. 6. St. Domingo. 1759.
— *triphyllum*. 4. Penang. 1820.

Zapa'nia. (After Paul Ant. Zappa, once curator of the Gardens at Pavia. Nat. ord., *Verbenaceæ*.) See **Lippia**.

Z. nodiflora. See **Lippia nodiflora**.

Zauschneria. (Named after M. Zauschner, a German. Nat. ord., *Onagraceæ*. 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 hedging-plant; for the latter purpose, as the flowers are apt to drop too much, mix it with *Cuphea strigillo'ea*; rich, light soil.

Z. californica. 3. Bright scarlet. June. Santa Cruz. 1847.

— *latifolia*. A small form with broader leaves. B. M. t. 4493.

Ze'a. Maize, or Indian Corn. (From *zao*, to live; a food-plant. Nat. ord., *Gramineæ*; Tribe, *Maydeæ*.)

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. Most of the following are garden varieties of *Z. Maïs*.

Z. Cura'gua. 1. June. Chili. 1824.

— *gigantea foliis-variegata*. Leaves variegated with silver, white, and green.

— *gracillima variegata*. Garden variety. Gfl. 1886, p. 640.

— *japonica albo-vittata*. Japanese, white-banded variety. Japan. 1867.

— *Maïs*. 3. June. America? 1562. Bent. and Tr. t. 296. Syn., *Z. alba*. Indian corn; Maize; Mealies. There is a variegated form.

— *tunica'ia foliis-variegatis*. A garden variety with variegated leaves. Wien. Gartz. 1891, p. 457.

Zebra Plant. *Calathea zebri'na*.

Zebra Wood. *Myrtus fragrans* and *Guetta'nda speciosa*.

Zebri'na. (Because the leaves are striped after the manner of a Zebra. Nat. ord., *Commelinaceæ*; Tribe, *Tradescantieæ*. Allied to *Tradescantia*.)

Stove or greenhouse herbaceous perennial, of creeping habit, with handsome white-striped leaves, purple beneath. It makes a good basket-plant, and is also useful for covering the earth of very large pots or tubs, or as an edging in suitable places. Easily increased by cuttings, which root very quickly. Rich light soil. Summer temp., 65° to 80°; winter, 55° to 65°.

Z. pendula. Purple. Summer. Mexico. 1849. Syns., *Cyanotis vittata*, *Tradescantia tricolor*, and *T. zebri'na*.

Zehne'ria. (In memory of Joseph Zehner, a German artist. Nat. ord., *Cucurbitaceæ*.)

Greenhouse climbers. For cultivation, see **SECIUM**.

Z. hastata. Leaves silvery-veined. Japan. 1866.

— *scabra*. Yellowish. South Africa. Syn., *Melothria punctata*.

— *sua'vis*. Cape of Good Hope.

Zelko'va. (Probably from the native name. Nat. ord., *Urticaceæ*; Tribe, *Ulmecæ*.)

Hardy deciduous trees.

Z. acuminata. Green. April. Caucasus. Syns., *Planera acuminata* and *P. japonica*.

— *crenata*. 12. Greenish. April. North America. 1760. Syn., *Planera Richard* and *Ulmus nemoralis*.

Zeno'bia. (A queen of Palmyra. Nat. ord., *Ericaceæ*. Allied to *Andromeda*.)

Hardy shrub, almost evergreen. Seeds and layers. Sandy loam and peat.

Z. speciosa. 2. White. Summer. N. America. 1800. Syns., *Andromeda cassinifolia*, B. M. t. 970, and *A. speciosa*.

Z. pulverulenta. Leaves glaucous above, silvery beneath. Syns., *Andromeda dealbata*, B. R. t. 1010, and *A. pulverulenta*, B. M. t. 667.

Zephyranthes. (From *zephyr*, the west wind, and *anthos*, a flower. Nat. ord., *Amaryllidæ*; Tribe, *Amaryllææ*. Allied to *Habranthus*.)

Half-hardy bulbs, with only one flower on a stalk. For culture, see *HABRANTHUS*.

Z. Andersoni. †. Bright yellow inside, coppery-red outside. June. Montevideo. 1829. Syns., *Amaryllis Andersoni* and *Habranthus Andersoni*. B. R. t. 1345.

— *Atamasco*. †. White. May. North America. 1629. Syn., *Amaryllis Atamasco*. B. M. t. 239.

— *au'rea*. 1. Bright yellow. December. Peru. Syn., *Pyrolirion aureum*.

— *ca'ndida*. †. White. September. Peru. 1822. B. M. t. 2607. Syn., *Amaryllis candida*. B. R. t. 724.

— *carina'ta*. †. Pink. May. Mexico. 1824. Syn., *Z. grandiflora*. B. R. t. 902.

— *citr'i'na*. †. Bright yellow. Tropical America. 1881. B. M. t. 6605.

— *co'ncolor*. 1. Lemon-yellow. Mexico. Syn., *Habranthus concolor*. B. R. 1845, t. 54.

— *Drummo'dii*. A synonym of *Cooperia pedunculata*.

— *fla'va*. 1. Pale golden-yellow. May. Peru. 1833. Syns., *Pyrolirion aureum*, var. *fauce lævi*, B. R. t. 1724, and *P. flavum*.

— *flave'scens*. See *Z. mesochloa*.

— *gracili'flora*. †. Pale purplish-pink. September. Maldonado. 1823. Syn., *Habranthus graciliflorus*. B. M. t. 2464.

— *Lindleya'na*. †-1. Bright red. June. Mexico.

— *macro'siphon*. †-1. Bright red. May. Mexico. 1881.

— *mesochlo'a*. 1. White, green. June. Buenos Ayres. 1825. Syn., *Z. flavescens*.

— *pusi'lla*. See *Haylockia pusilla*. B. R. t. 1371.

— *robu'sta*. †. Rose red. July. Buenos Ayres. 1838. Syn., *Habranthus robustus*. Swt. Fl. Gard. ser. 2, t. 14.

— *ro'sea*. †. Red. May. Havannah. 1823. B. R. t. 821.

— *se'ssilis*. Ref. Bot. t. 212. See *Z. verecunda*.

— *Sporforthi'na*. B. R. t. 1746. A hybrid between *Z. tubispatha* and *Z. carinata*.

— *stri'a'ta*. See *Z. verecunda*.

— *teza'na*. †. Yellow inside, coppery outside. Texas. Syn., *Habranthus Andersoni*, var. *texanus*. B. M. t. 3596.

— *Tred'tice*. †-1. White. April. Florida. 1833.

— *tubispa'tha*. †. White. May. Venezuela, etc. Syn., *Amaryllis tubispatha*. B. M. t. 1586.

— *verecu'nda*. †. Pale red. April. Mexico. 1824. Syns., *Z. sessilis*, *Z. striata*, B. M. t. 2593, *Amaryllis striatula* and *A. verecunda*.

— *versi'color*. †. White, flushed with red and green outside. January. Maldonado. 1824. Syn., *Habranthus versicolor*. B. M. t. 2485.

Zeuxi'ne. (From *zeuxis*, a joining; the petals cohere with upper sepal. Nat. ord., *Orchidææ*; Tribe, *Neottieæ-Spirantheæ*.)

Stove terrestrial orchid. For culture, see *ANÆCTOCHILUS*.

Z. re'gia. †. White, green. Leaves dark green with a whitish or lilac stripe down the centre. Borneo. Syns., *Ænæctochilus lineatus*, *A. striatus*, *Haplochilus regium*, and *Monochilus regium*.

Zexme'nia. (An anagram of *Ximenesia*. Nat. ord., *Compositæ*.)

Z. au'rea is a half-hardy shrub, which may be propagated by cuttings. *Z. ova'ta* is a hardy annual.

Z. au'rea. 1‡. Golden-yellow. September. Mexico. 1829. Syns., *Verbesina aurea* and *Wedelia aurea*. B. M. t. 3384.

— *ova'ta*. 2. Deep orange-yellow. Autumn. Mexico. 1828. Syn., *Tithonia ovata*. B. M. t. 3901.

— *teza'na*. A synonym of *Wedelia hispida*.

Zi'chya. (Named after *Countess Zichy*, a German patroness of botany. Nat. ord., *Leguminosæ*; Tribe, *Phaseoleæ*.) A synonym of *Kennedya*.

Greenhouse evergreen twiners from Australia.

Z. angustifo'lia. See *Kennedya coccinea*.

— *cocci'nea*. Maund, Bot. t. 120. See *Kennedya coccinea*.

— *glabra'ta*. B. M. t. 3956. See *Kennedya glabrata*.

— *heterophy'lia*. A form of *Kennedya coccinea*.

— *inophy'lia*. A form of *Kennedya coccinea*.

— *Molly*. A form of *Kennedya coccinea*.

— *panno'sa*. Paxt. Mag. viii. p. 147. A synonym of *Kennedya coccinea*.

— *seri'cea*. See *Kennedya sericea*.

— *tri'color*. B. R. 1835, t. 52. See *Kennedya coccinea*.

— *villo'sa*. B. R. 1842, t. 63. See *Kennedya coccinea*.

Zie'ria. (Named after *M. Zier*, a Polish botanist. Nat. ord., *Rutaceæ*. Allied to *Boronia*.)

Greenhouse, white-flowered evergreens, from Australia. For culture, see *BORONIA*.

Z. arbore'scens. B. M. t. 1395. See *Z. Smithii*, var. *macrophylla*.

— *hirsu'ta*. See *Z. pilosa*.

— *laevig'ata*. 3. June. 1822. Paxt. Mag. ix. p. 77. Syn., *Z. revoluta*.

— *lanceola'ta*. See *Z. Smithii*.

— *macrophy'lia*. B. M. t. 4451. See *Z. Smithii*, var. *macrophylla*.

— *microphy'lia*. 3. June. 1822.

— *obcord'a'ta*. 4. June. 1824.

— *octa'ndra*. 5. Green. 1825.

— *pauco'flora*. See *Z. pilosa*.

— *pilo'sa*. 4. June. 1822. Linn. Trans. x. t. 17. Syn., *Z. pauciflora*.

— *revolu'ta*. June. 1824.

— *Smi'thii*. 4. 1808. Syn., *Z. lanceolata*, B. C. t. 878.

— *macrophy'lia*. A large variety, sometimes forming a small tree. 1806. Syns., *Z. arbore'scens*, B. M. t. 1395, and *Z. macrophylla*, B. M. t. 4451.

Zi'ngiber. Ginger. (From the Indian name. Nat. ord., *Scitamineæ*; Tribe, *Zingiberææ*.)

Stove herbaceous perennials, from the East Indies; yellow-flowered, where not otherwise mentioned; division of the roots; fibry peat and sandy loam. Winter temp., 40° to 45°; summer, 80° to 90°. See *GINGER*.

Z. Ama'ricans. 3. Penang. 1846.

— *brevifo'lium*. Yellow. Philippines. 1886.

— *capita'tum*. 4. February. 1825.

— *Cassumi'nar*. 2. February. 1807. B. M. t. 1426. Syn., *Z. purpureum*.

— *chrysa'nthum*. 8. July. 1821.

— *chryso'rdia*. White. Guinea. Andr. Rep. t. 555.

— *colora'tum*. 3. Cream-coloured. N. W. Borneo. 1879.

- Z. Da'reeyi*. 3. Leaves bright green, edged and striped with creamy-white. Botanic Garden, Sydney, 1890.
 — *ela'tum*. 6. July. 1820.
 — *liqua'tum*. 2. Pink. June. 1823.
 — *Mi'o'ga*. 2. Pink. May. Japan. 1796. Greenhouse.
 — *offici'na'le*. 2. Red. July. 1605.
 — *pandura'tum*. 5. Pink. June. 1812.
 — *Par'i'shii*. 3. Yellowish, with purple veins. July. Moulmein. 1872. B. M. t. 6019.
 — *purpu'reum*. See *Z. Cassumunar*.
 — *ro'seum*. 2. Rose, yellow. August. 1822.
 — *ru'bens*. 6. Red. October. 1822.
 — *squa'rro'sum*. 2. Pink. August. 1822.
 — *Zeru'mbet*. 4. August. 1690. B. M. t. 2000.

Zi'nnia. (Named after *J. G. Zinn*, a German professor of botany. Nat. ord., *Compositæ*; Tribe, *Helianthoideæ*.)

Mexican annuals. Seeds in April in a hothed; 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. angustifo'lia*. 2. Scarlet. July. 1824.
 — *au'rea*. Orange. 1862.
 — *e'legans*. 2. Scarlet. July. 1796. Jacq. Ic. t. 589.
 — *cocci'nea*. 2. Scarlet. August. 1829. Syn., *Z. violacea* var. *coccinea*. B. R. t. 1294.
 — *Darwi'ni*. A garden hybrid.
 — *fo're ple'no*. A double-flowered variety. 1861.
 — *viola'cea*. Purplish-violet. Syns., *Z. elegans* of B. M. t. 527, and *Z. violacea*, Andr. Rep. t. 55.
 — *Haagea'na*. 1-1½. Golden or orange-yellow. Summer. Central America? 1862.
 — *hy'brida*. 2. June. 1818.
 — *linea'ris*. 1½. Deep orange. Gfl. 1887, p. 667, fig. 171.
 — *multifo'ra*. 2. Scarlet. August. 1770. B. M. t. 149.
 — *paucifo'ra*. 2. Yellow. July. Peru. 1758.
 — *revolu'ta*. 2. Scarlet. July. 1817.
 — *tenuifo'ra*. 2. Scarlet. July. 1799. Jacq. Ic. t. 590.
 — *verticilla'ta*. 2. Scarlet. July. 1789.
 — *viola'cea*. See *Z. elegans*.
 — *cocci'nea*. See *Z. elegans* var. *coccinea*.

Ziza'nia. (From *Zizanon*, the Greek name for some wild grain; it is translated "tares" in the New Testament. Nat. ord., *Gramineæ*.)

Hardy grass of little horticultural value.

- Z. aqua'tica*. A tall aquatic grass with a large panicle. The grain is used by the Indians of N. W. America as food. N. W. America. 1836. Canadian or Indian Rice; Water Oats.

Zizi'phora. (From *zizi*, of the Indians, and *phoreo*, to bear. Nat. ord., *Labiatae*. Allied to *Monarda*.)

Red-flowered, where not otherwise mentioned. Annuals, by seed in April; perennials, by seeds, divisions, and cuttings; dry, sandy loam, in elevated places, such as rock-works; the perennials require a little protection in winter.

HALF-HARDY EVERGREENS.

- Z. acinoi'des*. ½. July. Siberia. 1786. Deciduous.
 — *clinopodioi'des*. ¾. Pink. June. Siberia. 1821.

- Z. clinopodioi'des can'e'scens*. July. 1803.
 — *me'dia*. ½. July. Caucasus. 1822. Syn., *Z. serphyllacea*. B. M. t. 906.
 — *dasy'ntha*. ½. July. Siberia. 1803. Syn., *Z. Pouschkini*. B. M. t. 1093.
 — *Pou'schkini*. See *Z. dasy'ntha*.
 — *serpylla'cea*. See *Z. clinopodioi'des*, var. *media*.

ANNUALS.

- Z. capita'ta*. ½. July. Syria. 1752.
 — *hispa'nica*. ½. June. Spain. 1759.
 — *tau'rica*. ½. Red, purple. August. Tauria. 1816.
 — *tenu'lor*. ¾. Purplish. June. Levant. 1752.

Zi'zyphus. (The Egyptian name of *Z. Lo'tus*. Nat. ord., *Rhamnaceæ*; Tribe, *Zizyphaceæ*.)

Greenish-yellow-flowered, where not otherwise mentioned. Cuttings of the roots, suckers, and cuttings of ripened shoots under a handy-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, ETC.

- Z. flexuo'sa*. 6. Nepaul. 1820.
 — *inci'ru'a*. 5. Nepaul. 1823.
 — *Ju'juba*. 40. April. N. Africa and India. 1759. Jujube Tree. Greenhouse Tree.
 — *Lo'tus*. 2-4. S. Europe and N. Africa. 1731. African or Jubube Lotus. Half-hardy.
 — *spi'na-Chri'sti*. 6. August. Egypt. Christ's Thorn.
 — *ine'rmis*. 6. August.
 — *vulga'ris*. 10. August. S. Europe. 1640.

STOVE EVERGREENS, ETC.

- Z. Caracu'ta*. E. Ind. 1820.
 — *longifo'lia*. India. 1837.
 — *melastomoi'des*. 6. N. Holland. 1824.
 — *mucrona'ta*. 30. South Africa. 1810. Greenhouse.
 — *Nape'ca*. 15. Ceylon. 1816.
 — *ni'tida*. 6. June. China. 1822.
 — *spi'na Chri'sti trine'rvia*. E. Ind. 1821.

EXCLUDED SPECIES.

- Z. myrtoi'des*. See *Condalia microphylla*.
 — *Paliu'rus*. B. M. t. 1893. See *Paliurus aculeatus*.

Zomica'rupa. (From *zoma*, a kind of skirt, and *karpos*, fruit; referring to the pericarp of the fruit, which, when ripe, bursts at the bottom and remains covering the seeds like a skirt. Nat. ord., *Aroidæ*; Tribe, *Zomicarpeæ*.)

Stove tuberous-rooted perennials. For cultivation, see STAUROSTIGMA.

- Z. Pytho'nium*. 1. Glaucous-violet, green. Brazil. 1860.
 — *Riedelia'na*. 1. Green. Brazil. 1860.
 — *Steigeria'na*. 1. Blackish-purple. Brazil. 1860.

Zomicarpe'lla. (Diminutive of *Zomicarpa*. Nat. ord., *Aroidæ*; Tribe, *Zomicarpeæ*.)

Stove aroid.

- Z. macula'ta*. Leaves dark green, spotted with pale green. Spathe dull olive green. New Grenada. 1831.

Zo'rnia. (Named of *J. Zorn*, a German botanist. Nat. ord., *Leguminosæ*; Tribe, *Hedysareæ*.)

Annuals, seeds in a hothed, and the plants afterwards bloomed in the greenhouse; peren-

nials, also, by seeds, and dividing the plants in spring, and requiring to be kept from frost, and rather dry in winter; rich, light, fibry loam.

- Z. angustifolia*. 1. Purple. July. India. 1738. Annual.
 — *capensis*. $\frac{1}{2}$. Yellow. July. Cape of Good Hope. 1824. Greenhouse perennial.
 — *elegantis*. See *Dicerma elegans*.
 — *pulchella*. See *Desmodium pulchellum*.
 — *tetraphylla*. $\frac{3}{4}$. Yellow. July. Carolina. 1824. Greenhouse perennial. Syns., *Anonymos bracteata*, *Myriadenus tetraphyllus* and *Ornithopus tetraphyllus*.

Zosterostylis. (From *zoster*, a ribbon, and *stylis*, a column. Nat. ord., *Orchideæ*; Tribe, *Neottieæ-Daurideæ*.)

Stove orchid. For cultivation, see ORCHIDS.

- Z. arachnitis*. Green, purple. Ceylon. 1863. Syn., *Cryptostylis arachnacea*.

Zuccagnia. (After *A. Zuccagni*, once Director of the Botanic Gardens at Florence. Nat. ord., *Liliaceæ*; Tribe, *Scilleæ*.) A synonym of **Dipcadi**.

Z. viridis. A synonym of *Dipcadi viridis*.

Zygadenus. (From *zygnuo*, to join, and *aden*, a gland; double glands on the perianth. Nat. ord., *Liliaceæ*; Tribe, *Veratrea*. Allied to *Veratrum*.)

Hardy, North American, herbaceous perennials. Seeds, and division of the plant in spring; a moist, shady peat-border.

- Z. bracteatus*. 1 $\frac{1}{2}$. Cream. May. 1811. Syn., *Helonias bracteata*. B. M. t. 1703.
 — *commutatus*. 1. Cream. June. 1811. Syn., *Helonias glaberrima*. B. M. t. 1680.
 — *elegantis*. 1. White. May. 1828.
 — *Fremontii*. 1. Creamy. California. 1871.
 — *glaberrimus*. 1. Cream. June. 1811.
 — *hybridus*. See *Melanthium hybridum*.
 — *monocus*. 2. Brown. June. 1811.
 — *Nuttalli*. $\frac{1}{2}$ -1. White. June. Texas and California. Gf. t. 1121, fig. 2.
 — *virginicus*. See *Melanthium virginicum*.

Zygoclox. (From *Zygopetalum* and *Colax*, between which genera this is a hybrid. Nat. ord., *Orchideæ*.)

For culture, see ZYGOPETALUM.

- Z. Veitchii*. 1. Greenish-yellow, blotched purplish-brown; lip pale yellow with violet-purple stripes. A hybrid between *Colax jugosus* and *Zygopetalum crinitum*. See G. C. 1887, i. p. 765.

Zygopetalum. (From *zygos*, a yoke, and *petalon*, a petal; the union of the bases of the petals and sepals. Nat. ord., *Orchideæ*; Tribe, *Vandee-Cyrtopodieæ*.)

Stove orchids, grown in pots. See ORCHIDS.

- Z. africanum*. B. M. t. 3812. A synonym of *Odontoglossum bictoniense*.
 — *aromatium*. White, blue. Chiriqui. 1867. Syn., *Warsceviczella aromatica*.
 — *Bachhousiana*. Purplish-violet, cream, sulphur. Ecuador. 1887. Syn., *Pescatorea Bachhousiana*.
 — *Beaumontii*. Creamy-white, purplish-violet, yellow. Brazil. 1850. Syns., *Batemannia Beaumontii* and *Galeottia Beaumontii*.

Z. bellum. Pale violet, yellowish, brown. Columbia. 1878. Syn., *Pescatorea bella*.

— *brachypetalum*. Brown, green, bluish-violet. October. Brazil. 1844.

— *stenopetalum*. Brownish-purple, green, violet, white. 1888. Gf. t. 1277.

— *Burkei*. Green, brown; lip white, crimson. Guiana. 1883. Warn. Orch. Alb. t. 142.

— *caudidum*. $\frac{3}{4}$. White, rosy- and bluish-purple. Bahia. Syns., *Huntleya candida*, *Warrea candida* and *Warsceviczella candida*.

— *cerinum*. 1. Pale straw-colour, yellow. Chiriqui. 1861. Fl. Ser. t. 1815. Syns., *Huntleya cerina*, B. M. t. 5598, and *Pescatorea cerina*.

— *citrinum*. Deep yellow, crimson. Late summer. Brazil. 1838. Syns., *Maxillaria citrina* and *Promenaea citrina*.

— *Claui*. Deep purplish-brown, green, violet-purple. 1876. A hybrid between *Z. crinitum* and *Z. maxillare*. Flor. Mag. new ser. t. 267.

— *cochlear*. White, blue. West Indies. B. M. t. 3585.

— *caeleste*. Pale blue, mauve, yellowish. June. Columbia. 1878. Syn., *Bollea caelestis*. B. M. t. 6458. Greenhouse.

— *Crepeauvii*. Dark red, yellow; lip white, violet. Brazil. 1887.

— *crinito-maxillare*. A garden hybrid. Garden, xxxviii, p. 43.

— *crinitum*. Green, brown; lip white, yellow. November. Brazil. 1829. B. C. t. 1687. Syns., *Z. Mackayi* var. *crinitum*, B. M. t. 3402, and *Z. stenochilum*. B. C. t. 1923.

— *caeruleum*. Veined with bright blue.

— *Dayanum*. White, green, violet. Columbia. 1873. Syn., *Pescatorea Dayana*.

— *candidulum*. White, purplish. Columbia. 1875. Syn., *Pescatorea Dayana*, var. *candidula*.

— *rhodacrum*. Sepals and petals with purplish-rose tips. September. 1874. Syn., *Pescatorea Dayana*, var. *rhodacra*.

— *splendens*. White, chocolate-purple. Columbia. 1875.

— *discolor*. Straw-colour, purple, yellow. Central America. Syns., *Warrea discolor*, B. M. t. 4830, and *Warsceviczella discolor*.

— *Dormannianum*. White, pale sulphur. Columbia? 1881. Syn., *Pescatorea Dormanniana*.

— *euglossum*. Lilac. Ecuador. 1877. Syn., *Pescatorea euglossa*.

— *expansum*. Green, brown. Ecuador? 1878.

— *fimbriatum*. $\frac{3}{4}$. White, purple. Syn., *Pescatorea fimbriata*. Gf. t. 1008.

— *forcipatum*. Whitish-ochre, brick-red, purple. 1888.

— *Gairianum*. Violet, black-purple, rose. 1879. Syn., *Pescatorea Gairiana*.

— *Gautieri*. Green, brown, white, purple. Brazil. 1868.

— *gemma*. White. Columbia. 1874. Syn., *Kefersteinia gemma*.

— *Gibezia*. White, violet. Lind. t. 181.

— *gramineum*. Yellow, brown. November. Popayan. 1844. Syn., *Kefersteinia graminea*. B. M. t. 5046.

— *hemixanthum*. White; lip yellow. New Grenada. Syn., *Bollea hemixantha*.

— *intermedium*. Green, blue, purple. November. Brazil. 1844.

— *Jorisia*. Venezuela. 1890. Lind. t. 237.

— *Klabochorum*. White, chocolate, yellow. Tropical America. 1879. Syn., *Pescatorea Klabochorum*.

- Z. Klabocho'rum burfordensis*. Flower darker. 1879.
- *ornatissimum*. A variety tipped with deep mauve-purple. 1884.
- *la'cteam*. White. Chiriqui. 1872. Syn., *Kefersteinia lactea*.
- *Lali'ndei*. Bright light violet, yellow. Columbia. 1874. Syn., *Bollea Lalindei*. B. M. t. 6331.
- *lamello'sum*. 1. White, yellow, brown. August. Columbia. 1875. Syn., *Pescatorea lamellosa*. B. M. t. 6240.
- *lamina'tum*. Light yellow; lip white; column yellowish with green spots. 1885.
- *Lawrencea'tum*. White, yellow, violet. 1878. Syn., *Bollea Lawrenceana*.
- *Lehma'nni*. 1. White, reddish- and mauve-purple. Ecuador. Syn., *Pescatorea Lehmanni*. Warn. Orch. Alb. t. 57.
- *lentigin'o'sum*. Green, purple. July. Brazil. 1843. Syn., *Promenaea lentiginosa*.
- *leopard'i'num*. Greenish-yellow, brown; lip purplish-mauve, ochre. Garden hybrid. 1886.
- *Linde'nia*. Pale rose, white. Venezuela. Lind. t. 275.
- *lu'cidum*. Light brown, purple, bright green, orange, lilac, white. British Guiana. 1889.
- *Macka'yi*. Yellowish-green, brownish-purple, white, blue. Brazil. 1825. B. M. t. 2748. Syn., *Eulophia Mackaiana*. B. R. 1433. Greenhouse.
- *crini'tum*. See *Z. crinitum*.
- *interme'dium*. A variety with paler coloured flowers.
- *margin'a'tum*. White, crimson. Columbia. Syns., *Warrea quadrata* and *W. marginata*.
- *mazilla're*. Green, chocolate, bluish-purple. September. S. America. 1829. B. M. t. 3686. Greenhouse.
- *Melea'gris*. Pale yellow, purplish-brown, white. June. Brazil. Syns., *Batemanntia Meleagris* and *Huntleya Meleagris*. B. R. 1839, t. 14.
- *al'bidu-fu'l'vum*. Tawny, white, rose, yellowish-green. Brazil. 1868. Syn., *Huntleya albidofulva*.
- *micro'pterum*. White, crimson, purple. Syn., *Promenaea microptera*.
- *Murra'y'num*. Greenish, white, purple, yellow. Organ Mountains. 1837. B. M. t. 3674.
- *mystaci'num*. Yellowish-green, white, purple. Columbia. 1881. Syn., *Kefersteinia mystacina*.
- *obtus'a'tum*. Green, brown, violet.
- *pa'llens*. Pale mauve, greenish-yellow, ochre, brownish-purple. 1881. Syn., *Bollea pallens*.
- *Pati'ni*. Blue, yellow. Columbia. 1874. Syn., *Bollea Patinii*.
- *pentachro'mum*. Green, dark brown; lip white, mauve. Hybrid between *Z. Mackayi* and *Z. maxillare*. 1885. Greenhouse.
- *pi'ctum*. Straw-colour, yellowish-white, purple, greenish. 1883. Syn., *Warscewiczella picta*.
- *Rivie'ri*. Green, brown, white, lilac. Brazil. 1873.
- *Roe'zlii*. White, violet. Ecuador. 1874. Syn., *Pescalorea Roezlii*.
- *Rolliso'ni*. Pale yellow, whitish. Autumn. Brazil. 1838. Syns., *Maxillaria Rollisoni*, B. R. 1838, t. 40, and *Promenaea Rollissoni*.
- *rostra'tum*. Whitish, green, brownish-purple. September. Guiana. 1827. B. M. t. 2319. Syn., *Zyosepalum rostratum*.
- *Ruckeria'num*. White, purple, green, yellow. 1885.
- Z. Russehia'num*. Purplish-rose. Tropical America. 1878. Syn., *Pescatorea Russehiana*.
- *Sanderia'num*. Green, brown, bluish-purple. 1883. Gf. t. 1237.
- *sanguinol'e'ntum*. Pale straw-colour or greenish, blood-red, dark purple. Caracas. Syn., *Kefersteinia sanguinolenta*.
- *Sede'ni*. Purplish-brown, green, bluish-purple. Hybrid between *Z. Mackayi* and *Z. maxillare*. 1874.
- *stapehoi'des*. Greenish-yellow, dark purple. Summer. Brazil. 1843. Syns., *Maxillaria stapehoioides*, B. M. t. 3877, and *Promenaea stapehoioides*. There are two varieties—*nigra* and *rubra*.
- *stenoch'i'lum*. See *Z. citrinum*.
- *tri'color*. A synonym of *Aganisia tricolor*.
- *triu'mphans*. White, blue-black. New Grenada. Syn., *Pescatorea triumphans*.
- *Veit'chii*. See *Zygodolax Veitchii*.
- *vela'ta*. Cream, purple. New Grenada. 1866. Syn., *Warscewiczella velata*.
- *veluti'num*. See *Z. intermedium*.
- *violaceum*. Rich violet, greenish-yellow, white. British Guiana. 1835. Syns., *Bollea violacea*, *Huntleya sessiliflora*, and *H. violacea*.
- *Wailesia'num*. White or cream, violet. Autumn. Brazil. Syns., *Warrea Wailesiana* and *Warscewiczella Wailesiana*. Fragrant.
- *Walli'sii*. White, purple. Central America. 1869. Syns., *Pescatorea Wallisii*, Fl. Ser. t. 1828, and *Batemanntia Wallisii*.
- *ma'jor*. A variety with flowers exceeding five inches in diameter. Costa Rica. 1888.
- *Wendla'ndii*. White, violet-purple. August. Costa Rica. Gf. t. 1267. Syn., *Warscewiczella Wendlandii*.
- *dis'color*. Yellowish-green, white, violet. Costa Rica. Syn., *Warscewiczella Wendlandii*, var. *discolor*. Warn. Orch. Alb. t. 126.
- *Whit'tei*. Creamy-white, yellow. New Grenada. 1890.
- *xanthi'num*. Yellow. Brazil. 1843. Syns., *Maxillaria xanthina* and *Promenaea xanthina*.

Zygophyllum. Bean-caper. (From *zygos*, a yoke, and *phyllo*n, a leaf; leaves in pairs. Nat. ord., *Zygophyllaceae*.)

- 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 fibry loam, with a little charcoal and freestone.
- Z. a'lbum*. 2. White. October. Canaries. 1779. Sibth. Fl. Gr. t. 371.
- *atripl'icoi'des*. America. 1837. Hardy herbaceous.
- *cocci'nevum*. 3. Scarlet. Egypt. 1823.
- *cordifo'l'ium*. 6. October. 1774.
- *fo'e'tidum*. 4. June. 1790.
- *insua've*. 4. July. 1790. B. M. t. 372.
- *macula'tum*. 4. October. 1782.
- *ma'jor*. 4. July. Syria. 1596. Hardy herbaceous.
- *microphy'llum*. $\frac{1}{2}$. July. 1816.
- *Morgsa'na*. 3. August. 1732.
- *prostra'tum*. $\frac{1}{2}$. July. 1810.
- *sessilifo'l'ium*. 3. July. 1713. B. M. t. 2184.
- *si'mplex*. $\frac{1}{2}$. July. St. Jago. 1825. Annual.
- *spathula'tum*. June. Cape Verd Islands. 1824. Stove herbaceous.
- *spino'sum*. 1. July. 1837.

Zygo'se'palum. (From *zygos*, a yoke, and *sepalon*, a sepal; the sepals are united. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Cyrtopodiææ*.) See **Zygope'talum.**

Z. rostra'tum. See *Zygopetalum rostratum.*

Zygosta'tes. (From *zygos*, a yoke, and *statos*, standing; in allusion to the

two processes which stand out horizontally from the base of the column, and together somewhat resemble a yoke. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Oncidiææ*.)

Stove epiphyte. Should be grown upon blocks. See ORCHIDS.

Z. Greenia'na. White, green. Brazil. 1869.
— *tuna'ta.* Brazil. 1837.

APPENDIX.

ABU

Abu'tilon.

- A. molle*. 10-20. Pinkish-orange. Peru. Syn., *Sida mollis*. B. M. t. 2759.
— *picatum*. Yellow veined with red. Uruguay. Syn., *Sida picta*. B. M. t. 3840.

Aca'mpe.

- A. madagascariensis*. White; lip rose-purple. Madagascar. 1891.

Acantholi'mon.

- A. androsa'ceum*. $\frac{1}{2}$. Red. July. Southern Europe. 1813. Syn., *Statice echinus*. Sibth. Fl. Gr. t. 300.

A'cer.

- A. palma'tum* *Ac'cii*. A garden variety with variegated leaves. 1892. Gil. t. 1363.
— *Trantvette'ri erythroca'rpum*. A variety with red fruit. Caucasus. 1892.

Acera'nthus. (From *acer*, hard or sharp, and *anthos*, flower. Nat. ord., *Berberideæ*.)

Hardy herbaceous perennial. For culture, see EPIMEDIUM.

- A. diphy'llus*. $\frac{3}{4}$. Red. May. Japan. 1830. Syn., *Epimedium diphyllum*. B. M. t. 3443.

Achi'menes.

- A. Schee'rii*. $\frac{3}{4}$. Purple. August. Mexico. 1850. Syn., *Scheeria mexicana*. There is a variety with light blue flowers.

A'chras. (From *achras*, a kind of wild pear. Nat. ord., *Sapotaceæ*.)

A stove evergreen tree with milky juice. Cuttings.

- A. Sapo'ta*. 50. Whitish. May. West Indies. 1731. B. M. t. 311-312. Syn., *Sapota Achras*.

Acio'tis.

- A. fra'gilis*. $\frac{3}{4}$. White. June. Trinidad. 1822. Syn., *Spennera fragilis*.
— *paludo'sa*. $\frac{3}{4}$. Rose. June. Brazil. 1825. Syn., *Spennera paludosa*.
— *pendulo'folia*. $\frac{3}{4}$. Rose. March. Guiana. 1826. Syn., *Spennera pendulifolia*.

Aconi'tum.

- A. Fische'ri*. Blue. N. E. Asia and N. America. 1890. B. M. t. 7130. Syn., *A. californicum*.

Actæ'a.

- A. palma'ta*. A synonym of *Trantvetteria palmata*.

ÆSC

Actine'lla.

- A. lana'ta* is a synonym of *Eriophyllum cæspitosum*, not *Eriospermum cæspitosum*, as stated on page 13.
— *scapo'sa*. 1. Yellow. Texas.

A'da.

- A. Lehma'nni*. Orange; lip white, yellow. Columbia. 1891.

Adeno'sma. (From *aden*, a gland, and *osme*, smell; the plants are furnished with glands exhaling a mint-like odour. Nat. ord., *Scrophulariaceæ*. Syn., *Pterostigma*.)

Stove herbaceous perennial. Cuttings. Sandy peat.

- A. grandiflorum*. 3. Violet. Hongkong. 1845. Syn., *Pterostigma grandiflorum*. B. R. 1846, t. 16.

Adia'ntum.

- A. eleganti'ssimum*. A sport from *A. cuneatum*. G. C. 1892, xii. p. 249. Stove.
— *Lambertia'num*. A variety of *A. cuneatum*. 1890.
— *macrophy'llum albostria'tum*. Fronds streaked with creamy-white. 1892.
— *manica'tum*. A seedling. 1890. Gard. xxxviii. p. 94.

Æ'chmea.

- Æ. Furstenbergii*. A synonym of *Streptocalyx Furstenbergii*.
— *tillandsioi'des*. A synonym of *Portea tillandsioides*.

Aera'nthus.

- A. brachyce'ntrom*. 1. Pale yellow. Comoro Islands? 1890.

Ae'rides.

- A. augustia'num*. Rose. Philippine Islands. 1890. Lind. t. 210.
— *Janso'ni*. A natural hybrid between *A. odoratum* and *A. expansum*. Burmah. G. C. 1890, viii. p. 66.
— *Lavre'nceæ Amesia'na*. A richly-coloured variety. 1891.
— *maculo'sum*. A synonym of *Saccolabium speciosum*.
— *Savagea'num*. White, crimson-purple. 1891.
— *suav'issimum bla'ndum*. An unspotted variety. 1891.

Æschyno'mene.

- A. arista'ta*. A synonym of *Pictetia aristata*.

Æ'sculus. PAVIA is sometimes united with this genus, from which it

differs in having smooth, not spiny, fruits.

Agape'tes.

- A. macrantha*. White, yellow, red. December. Moulmein. 1849. Syn., *Thibaudia macrantha*. B. M. t. 4566.
 — *Ma'nini*. Flowers inconspicuous. Khasia. 1892.
 — *pulcherrima*. Red, green. May. India. 1845. Syn., *Thibaudia pulcherrima*. B. M. t. 4363.
 — *variegata*. Scarlet. Khasia. 1837. Syn., *Thibaudia variegata*.

Agari'sta.

- A. nerifolia*. 3. Crimson. June. Brazil. 1851. Syns., *Andromeda nerifolia* and *Leucothoe nerifolia*, B. M. t. 4593.
 — *pulchra*. 2. Greenish-white. Caraccas. Syn., *Leucothoe pulchra*. B. M. t. 4314.

A'gave.

- A. Franzosi'ni*. 40. Green, yellow. 1892. G. C. 1892, xii. p. 179, fig. 31.

Agera'tum.

- A. latifolium*. A synonym of *Piqueria latifolia*

Aglaeone'ma.

- A. costa'tum*. Leaves green, spotted and veined with white. Spathe green. Perak. 1892.

Agonis. (From *agon*, a gathering; there are numerous seeds. Nat. ord., *Myrtaceæ*.)

Greenhouse evergreen shrubs, or small trees.

- A. flexuosa*. 40. White. Summer. West Australia.
 — *marginata*. White. Summer. West Australia. 1827. Syn., *Fabricia stricta*. B. C. t. 1219.

Aizo'on.

- A. canarie'nse*. Andr. Rep. t. 201. A synonym of *Sesuvium Portulacastrum*.

Alber'ta. (In honour of *Albertus Magnus*, a philosopher and theologian of the thirteenth century. Nat. ord., *Rubiaceæ*.)

Ornamental greenhouse or stove shrub.

- A. ma'gna*. Red. Fruit red, winged. Natal. 1891.

Albu'ca.

- A. Buchana'ni*. Yellow. Nyassa-land. 1892.

Alka'anna. (From the Arabic name, *alkanna*. Nat. ord., *Boraginææ*; Tribe, *Boragææ*.)

Hardy herbs. For culture, see LITHOSPERMUM.

- A. orienta'tis*. 2. Yellow. June. Levant. 1713. Syn., *Lithospermum orientale*, B. M. t. 515.
 — *tinctoria*. 1½. Blue. July. South Europe. 1596. Syn., *Lithospermum tinctorium*, Andr. Rep. t. 576.

Allama'nda.

- A. Willia'msii*. An erect variety of *A. cathartica*. Journ. of Hort. 1891, xxiii. fig. 14.

Allople'ctus.

- A. Ly'ndei*. Stem purplish. Yellow; calyx reddish. New Grenada? 1892. B. M. t. 7271.
 — *tigrina*. The correct name for the plant described on p. 469 as *Heintzia tigrina*.

Aloca'sia.

- A. conspicua*. A hybrid between *A. odora* and *A. Putzeyssi*. 1891.
 — *Dussii*. Leaves olive-green veined with brownish-red. 1892.
 — *Mortfontane'nsis*. A hybrid between *A. Lowii* and *A. Sanderiana*. 1891.
 — *Rodriga'na*. A hybrid between *A. Thibauti* and *A. Reginae*. 1891.

A'loe.

- A. auranti'aca*. Yellow, tinged with red. South Africa. 1892.

Al'o'na.

- A. rostra'ta*. A synonym of *Osteocarpus rostratus*.

Alo'phia. (From *a*, not, and *lophos*, a crest. Nat. ord., *Irdeææ*; Tribe, *Moræææ*.) A synonym of *Herbertia*.

- A. Drummondii*. See *Herbertia Drummondiana*.

Alterna'nthera.

- A. flavescens*. 1. White. July. S. America. 1824. Syn., *Iresine flavescens*.

Aly'ssum.

- A. canescens*. White. April. Siberia. 1828. Syns., *Ptilotrichum canescens* and *P. elongatum*.
 — *podolicum*. ½. Yellow. June. Podalia. 1821. Syn., *Schivereckia podolica*, B. C. t. 1720.

Amara'lia.

- A. dignoni'castra*. 3. White, red. June. Sierra Leone. 1842. Syns., *Gardenia Sherburniææ*, B. M. t. 4044, and *Sherburniææ fotosa*.

Ama'ryllis.

- A. citri'na*. A synonym of *Sternbergia colchiciflora*.
 — *lutea*. A synonym of *Sternbergia lutea*.

Amorphopha'llus.

- A. Lacou'rii*. A synonym of *Pseudodracontium Lacou'rii*.
 — *zeylanicus*. A synonym of *Synantheriasylvatica*, B. M. t. 7190.

Ampelovi'tis.

- A. interme'dia*. A vine with the stem and leaf-stalks covered with stout bristles. 1891.
 — *Romane'ti*. Leaves lobed. Grapes black. China? 1892.

Ampho'dus.

- A. ova'tus*. B. R. t. 1101. A synonym of *Kennedyia rubicunda*.

Anaca'mpseros.

- A. Telephia'strum*. ½. Reddish. July. South Africa. 1813. Syn., *Talinum Anacamperos*.

Andro'meda.

- A. nerifolia*. See *Agarista nerifolia*.
 — *speciosa*. B. C. t. 551. A synonym of *Zenobia speciosa*, not of *Pieris speciosa*, as stated on p. 41.

Androsa'ce.

- A. alba'na*. Pinkish. April and July. E. Caucasus. 1892.
 — *caucasica*. Bright pink. Summer. Caucasus. 1892.
 — *cyli'ndrica*. Pure white. 1890.

Anemone.

- A. caffra*. 1. White. S. Africa. 1890. Green-house.
— *thalictroides*. B. M. t. 866. A synonym of *Thalictrum anemonoides*.

Angræcum.

- A. fra'grans*. White. Bourbon and Mauritius. 1891. B. M. t. 7161. The dried leaves are used as tea in Bourbon.
— *Obrienia'num*. Greenish-white. G. C. 1892, xi. p. 816.

Angulo'a.

- A. unijlo'ra* *Treyera'ni*. Base of lip with numerous rosy bars. Andes. 1892. Lind. t. 310.

Ano'da.

- A. puni'cea*. Red. Mexico? Syn., *Sida periptera*, B. M. t. 1644.

Anse'lia.

- A. hu'milis*. Lemon-yellow, marked with chocolate. Zambesi. 1891.
— — *pa'ulida*. A variety with the ground-colour milk-white. 1891.

Anthe'phora.

- A. e'legans*. A synonym of *Tripsacum hermaphroditum*.

Anthurium.

- A. Andrea'num* *Wambeke'a'num*. Spathes white. 1892. Ill. Hort. new ser. t. 163.
— *angusta'tum*. 1. May. Trinidad. 1823. Syn., *Pothos angustata*.
— *ebu'rneum*. Hybrid between *A. Andreanum* and *A. ornatum*. 1891.
— *Greya'num*. Hybrid between *A. ornatum* and *A. Andreanum*. 1892.
— *Lavre'nciæ*. Garden hybrid. 1892.
— *Paradi'sæ*. Hybrid between *A. Andreanum* and *A. ornatum*. 1891.
— *Ridolfia'num*. Spathe white; spadix pink. 1821.
— *rotundisp'a'thum*. Hybrid between *A. Andreanum* and *A. Lindeni*. 1891. Ill. Hort. new ser. t. 119.
— *rubrine'rium*. 2. South America. 1820. Syn., *Pothos rubrinervia*.

Aphelia'ndra.

- A. Blanchetia'na*. Leaves deep green, with silvery veins. Brazil. 1888. B. M. t. 7179. Syn., *A. ama'ena*.
— *Hydrom'e'stus*. 2. Yellow. May. Mexico. 1842. Syns., *Hydromestus maculatus* and *Strobilora'chis glabra*.
— *longisca'pa*. A synonym of *Thysacanthus Lemaireanus*.
— *tetra'gona imperia'lis*. Scarlet. Central America. 1891. Gfl. t. 1354.

Aphlo'ia.

- A. mauritia'na*. 4. Yellow. July. Mauritius. 1823. Syn., *Ludia heterophylla*.

Apodol'ion. (Nat. ord., *Amaryl-lidæ*.)

- A. lanceola'tum*. 8. White. July. S. Africa. 1794. Syn., *Gethyllis lanceolata*.

Appendi'cula. (Nat. ord., *Orchidæ*.)

- A. Peyeria'na*. White. Sumatra. G. C. 1891, x. p. 669.

Apricot. *Armeni'aca vulga'ris*.

- 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 *Précocé*.—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. *Hemskirke*.—Another of the Moorpark section; somewhat earlier. This also ripens safer than the Moorpark, which 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 rich 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 the middle of the season; flavour first rate. No garden of any pretensions is complete without a Moorpark or two.

These are all that are truly essential 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 larger tree, and a much surer bearer. Besides the above, there are the *Black*, the large early *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 *Haisha*, 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.

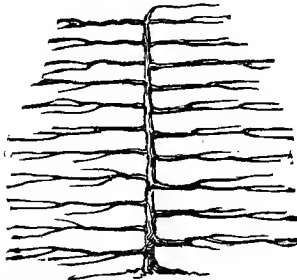
For dwarfs, bud at eight inches from the soil; for half standards, at three feet; and for standards, at five feet.

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 eighteen 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 six to eight inches apart,



and kept as horizontal as possible. The following 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 sprays. 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 till the buds begin to swell in March. Cut out any naked-looking shoots not more than four or five years old, avoiding amputation in the larger limbs, and get their places re-occupied 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 tree than to attempt its renovation.

Gathering should not 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 five inches to another. The thinning may be done, however, twice.

Insects.—Wasps and flies are best kept off by a net, at least a foot from the wall. See **Earwig**, **Pædisia**, 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 cases, 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, at 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 more, to be subjected occasionally to a temperature of some ten or fifteen degrees of frost. We have always 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 ferns, 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; secondly, to persist in summer stopping, in order to equalize growths; and thirdly, after careful summer training, to remove all superfluous sprays which shade 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.

Apto'simum.

A. depræsum. B. R. t. 1882. A synonym of *Ohlendorffia procumbens*.

Aquilegia.

A. transilvanica. A synonym of *A. glandulosa*.

A'rabis.

A. nudicaulis. A synonym of *Parrya nudicaulis*.

Arachna'nthe. (From *arachne*, a spider, and *anthos*, flower; supposed resemblance of the flower. Nat. ord., *Orchidææ*; Tribe, *Vandææ-Sarcantheæ*.)

Stove orchids, requiring the same culture as VANDA.

A. bella. Pale ochre, cinnamon; lip white, purplish-brown. Malaya. 1888. Syn., *Emeralda bella*.

— *Cathecartii.* Yellow, red, white. India. 1864. Syn., *Vanda Cathcartii*.

— *Clarkei.* Yellow, red. September. E. Himalayas. B. M. t. 7077. Syns., *Emeralda Clarkei* and *Vanda Clarkei*.

— *Lovii.* Yellow, brown. February. Borneo. 1846. Syns., *Renanthera Lovii* and *Vanda Lovii*.

— *Rhodencia'na.* A dwarf, brighter coloured variety. Borneo. 1891.

— *moschifera.* Creamy-white or yellowish. Java. Syns., *Epidendrum Flos-aëris*, *Renanthera arachnites* and *R. Flos-aëris*.

Ara'lia.

A. arbo'rea. Jacq. H. Schoenb. t. 51. See *Dendropanax arbo'reus*.

— *platanifolia.* See *Oreopanax platanifolium*.

Archontophœ'nix.

A. Alexa'ndræ. 70. Australia. 1870. Syn., *Ptychosperma Alexandræ*, Fl. Ser. t. 1916.

Arctocalyx.

A. Endlicheria'nus. Fl. Ser. t. 546. A synonym of *Solenophora Endlicheriana*.

Are'ca.

A. no'bilis. A synonym of *Nephrosperma Van Houtteana*.

— *seychellarum.* A synonym of *Stevensonia seychellarum*.

Argyre'ia.

A. tiliacifolia. White. June. E. Indies. 1812. Syn., *Rivea tiliacifolia*.

Arisæ'ma.

A. emeaphyllum. Yellow. Arabia. 1891. Gf. 1891, p. 578, fig. 103. This is probably the same as *A. flavum*.

Aristoló'chia.

A. clypeata. Creamy-yellow, purple. G. C. 1892, xi. p. 435, fig. 61.

— *gi'ga Sturtevantii.* A variety with very large flowers. 1891.

Arne'bia.

A. macrothrysa. 1-1½. Yellow. Armenia. 1891.

A'rnica.

A. crenata. B. C. t. 901. A synonym of *Mairia crenata*.

A'rum.

A. crinitum. See *Helicodiceros crinitus*.

— *Dracunculus.* See *Dracunculus vulgaris*.

— *syloaticum.* A synonym of *Vynantheris sylvatica*.

— *syriacum.* Blackish-purple, green. Syria. 1891.

A. divaricatum, orizense, and *trilobatum* are now included in TYPHONIUM, which see.

A'sarum.

A. cardigerum. Leaves green; petioles green and brown. S. China. 1890. B. M. t. 7126.

Asti'lbe.

A. chinensis. Rose. September. China. 1892.

Astrolo'ma.

A. longifolium. Red. April. Australia. Syn., *Stenantha ciliata*.

Asysta'sia.

- A. bella*. White, with red lines. May. Natal. 1869. Syn., *Mackaya bella*.
 — *guat'erna*. White. May. Sierra Leone. 1845. Syn., *Hemfregya scandens*.
 — *Thysracantha*. 2. White, purple. April. Bhotan. 1857. Syn., *Thysracanthus indicus*, B. M. t. 5062.
 — *va'ria*. 1. Mauve, brown. Zululand. 1892.

Ata'ccia.

- A. crista'ta*. A synonym of *Tacca cristata*.

Atrapha'xis.

- A. buxifolius*. 1½. White. July. Siberia. 1800. Syns., *Polygonum crispulum* and *Tragopyrum buxifolium*.
 — *frutescens*. 2. Pink. July. Siberia. 1778. Syn., *Tragopyrum lanceolatum*.

A'triplex.

- A. nummularia*. 10. Silvery-white. Australia. 1890.

B.

Bahi'a.

- B. lama'ta*. ½-1. Yellow. May. N. America. B. R. t. 1167. Syn., *Eriophyllum cæspitosum*.
 — *oppositifolia*. 1. Yellow. Syn., *Eriophyllum oppositifolium*.

Bake'ria of Seemann. (Nat. ord., *Araliaceæ*.) A synonym of **Plerandra**.

- B. vitie'nsis*. A synonym of *Plerandra vitensis*.

Balsami'ta.

- B. vulga'ris*. A synonym of *Tanacetum Balsamita*.

Barbace'nia.

- B. squama'ta*. B. M. t. 4136. A synonym of *Vellozia squamata*.

Barringto'nia.

- B. insignis*. Yellow, red. Java. 1851. Syn., *Stravadium insignis*.

Base'lla.

- B. tuberosa*. A synonym of *Ullucus tuberosus*.

Ba'tschia.

- B. longiflora*. See *Pentalophus longiflorus*.

Bauhi'nia.

- B. Galp'ni*. Crimson. Transvaal. 1891. Ic. Pl. t. 1994.

Beaufortia.

- B. spa'rsa*. B. M. t. 7231.

Bego'nia.

- B. bicolor*. Bright rose. Mexico. 1891.
 — *cinnabari'na albovittata*. Petals striped with white. 1892.
 — *de'cora*. Pink. Perak. 1892.
 — *Ducha'rtrei*. Hybrid between *B. echinosepala* and *B. Scharffiana*.
 — *glaucophylla*. Brazil. B. M. t. 7219.
 — *pitavie'nsis*. Hybrid between *B. Scharffiana* and *B. metallica*. 1891.
 — *roseo-multiflora*. A variety of *B. semperflorens*. 1892.

Belemca'nda.

- B. chin'e'nsis*. 2. Yellow, red. June. China. 1759. Syns., *Icicia chinensis* and *Paranthus chinensis*.

Bigelo'via. (After *Dr. Jacob Bigelow*, an American botanist. Nat. ord., *Compositæ*.)

- B. Howa'rdui*. Yellow. Syn., *Linosyris Howardii*.
 — *nuda'ta*. 1-2. Yellow. September. New Jersey.

- *panicula'ta*. Yellow. California.

Bigno'nia.

- B. buccinatu'ria*. Crimson, yellow. July. French Guiana. Syns., *B. chevere* of B. R. t. 1901, and *Pithecoctenium buccinatu'rium*.

Billbe'rgia. See also **Quesnelia**, p. 821.

- B. interme'dia*. Hybrid between *B. nutans* and *B. vittata*. 1891.

- *leodie'nsis*. Hybrid between *B. vittata* and *B. nutans*. 1891.

- *Wittmackia'na*. Hybrid between *B. vittata* and *B. amœna*. 1891.

Blanfo'rdia.

- B. corda'ta*. Andr. Rep. t. 343. See *Galax aphylla*.

Bloome'ria.

- B. au'rea*. 1. Yellow. July. California. 1869. Syn., *Nothoscordum aureum*.

Boma'rea. (Derivation not explained. Nat. ord., *Amaryllidæ*; Tribe, *Alströmeriæ*.)

Half-hardy twiners with handsome flowers. For culture see ALSTRÖMERIA.

- B. acutifolia*. 9. Red, yellow. September. Mexico. Syn., *Alströmeria acutifolia*.

- — *Ehrenbergia'na*. Red, yellow, brown. Spring. Mexico. 1879. B. M. t. 6444.

- — *puncta'ta*. See *B. multiflora*.

- — *bogote'nsis*. Crimson, black, green. Columbia. 1872.

- *Bredemeyera'na*. See *B. multiflora*.

- *Caldasiana*. Orange-yellow, with crimson spots. Andes of Peru. 1863. Syn., *Alströmeria Caldasii*. B. M. t. 5442.

- *Carde'ri*. Rose, purple-brown. November. Columbia. 1876. Flor. Mag. new ser. t. 239.

- *chontale'nsis*. See *B. edulis*, var. *chontalensis*.

- *conferta*. See *B. patacoensis*.

- *densiflora*. See *B. tomentosa*.

- *edulis*. 6. Pink, green, claret-brown. July. Tropical America. 1820. Syns., *Alströmeria edulis*, Andr. Rep. t. 649, and *A. Salsilla*, B. M. t. 1613.

- — *chontale'nsis*. Rose, yellow, brown. August. Nicaragua. 1871. Syn., *B. chontalensis*, B. M. t. 5927.

- — *ovata*. Red, green. Chili. 1824. Syns., *B. hirtella*, *B. ovata*, and *Alströmeria ovata*, B. M. t. 2846.

- *frondea*. Reddish-brown, bright yellow. New Grenada. 1832.

- *hirtella*. See *B. edulis*, var. *ovata*.

- *Falbreyeri*. Reddish-brown, bright yellow with claret-brown spots. New Grenada. 1833.

- *multiflora*. Orange, brown. September. New Grenada. 1829. Syns., *B. Bredemeyeriana*, Fl. Ser. t. 2316, and *B. acutifolia*, var. *punctata*.

- *oligantha*. Reddish, yellow, claret. Peru. 1877.

- *ovata*. See *B. edulis*, var. *ovata*.

- *patacoe'nsis*. Bright red, yellow. October. Andes of Ecuador and New Grenada. 1882. B. M. t. 6692. Syn., *B. conferta*.

- *pubibu'nda*. Pink. N. S. Wales. 1856.

- A. ro'sea*. Pale red, greenish-yellow. Andes of S. America. Syn., *E. simplex*. B. M. t. 3863.
- *Salsilla*. Mauve-purple. June. Chili. Syn., *Alströméria Salsilla* of Linnæus and *A. oculata*, B. C. t. 1851. *A. Salsilla* of B. M. t. 1613 is *B. edulis*.
- *Shuttleworthii*. Reddish, yellow, green, reddish-brown. Andes of New Grenada. 1882.
- *simplex*. See *B. rosea*.
- *sororia*. Rose spotted with carmine, green spotted with brown. S. America. 1892. Ill. Hort. new ser. t. 145.
- *tomentosa*. Yellow, red. Andes of S. Amer. 1865. Syn., *B. densiflora*, B. M. t. 5531.
- *vitellina*. Bright yellow. New Grenada. 1882.
- *Willia mista*. Pink, white, spotted with dark purple, greenish. New Grenada. 1882.

Bottinæ'a.

- B. thysanotoides*. 1. White. March. Chili. 1829. B. M. t. 3084. Syn., *Anthericum plumosum*.

Boucerosia.

- B. incarnata*. 1. Flesh-colour. June. South Africa. 1793. Syn., *Piaranthus incarnatus*.
- *mammillaris*. Brown, June. South Africa. 1774. Syn., *Piaranthus mammillaris*.

Boureria.

- B. divaricata*. 15. Havana. 1820. Syn., *Ehretia divaricata*.
- *laxa*. White. Madagascar. Syn., *Ehretia laxa*. Jacq. H. Schoenh. t. 41.

Boutelo'ua.

- B. racemosus*. 3. August. S. Europe. 1768. Syn., *Atheropogon aphioides*.

Brachycarpæ'a.

- B. varians*. 6. Purple. July. South Africa. 1713. Syn., *Polygala bracteolata*.

Brachychiton.

- B. Bidwillii* is a synonym of *Sterculia Bidwillii*.
- *diversifolium* is a synonym of *Sterculia diversifolia*.

Brachylæ'na.

- B. elliptica*. 8. Purple. South Africa. 1816. Syn., *Tarconanthus ellipticus*.
- *neriifolia*. Yellow. August. South Africa. 1752. Syn., *Tarconanthus dentatus*.

Brachylo'ma.

- B. ciliatum*. 3. White. June. Australia. 1825. Syn., *Lissanthe ciliata*.
- *daphnoides*. 3. White. June. Australia. 1818. Syn., *Lissanthe daphnoides*, B. C. t. 466, and *L. stellata*.

Brachyse'pha.

- B. undulata*. 1. White. February. South Africa. 1790. Syn., *Lachenalia pusilla*, Jacq. Ic. t. 585, *Massonia scabra* and *M. undulata*.

Brachyste'phium.

- B. leucanthemoides*. 1. White. July. Australia. 1823. Syn., *Pyrethrum diversifolium*. B. R. t. 1025.

Brassa'vola.

- B. Digbyana* is now known as *Lælia Digbyana*.
- *glauca* is now known as *Lælia glauca*.

Brassica. SINA'PIS is now a synonym of this genus.

Bra'ya.

- B. purpurascens*. 1. Purplish. May. Melville Island. 1827. Syn., *Platypetalum purpurascens*.

Bro'wnea.

- B. Crawfordii*. A hybrid between *B. grandiceps* and *B. macrophylla*.
- *erecta* and *princeps* are synonyms of *Tatisia princeps*.

Buckle'ya. (Nat. ord., *Santalaceæ*.)

- B. distichophylla*. 10. Greenish. North Amer. 1890. Gard. and For. iii. p. 237, fig. 37.

Buddle'ia.

- B. Colvilei*. Rose. Himalayas. G. C. 1892, xii, p. 186, fig. 32.

Bulbophyllum.

- B. a'nceps*. Yellowish, purple, white. Borneo. 1892. Lind. t. 351.
- *comosum*. White. Burmah. 1822.
- *denticulatum*. Yellowish. Sierra Leone. 1891.
- *elegans*. Rosy-purple. Ceylon. 1892.
- *fallax*. 1. Dark purple. Assam. 1859.
- *inflatum*. Greenish-yellow. Sierra Leone. 1891.
- *lemniscatoïdes*. Purple, green. Java. 1890.
- *nigripetalum*. Yellowish, purplish-black. West Tropical Africa. 1891.
- *Obrienianum*. Yellow with dark reddish-purple spots. Himalayas. 1892.
- *suavisimum*. Pale yellow. Upper Burmah. 1889.

C.

Ca'cabus.

- C. prostratus*. Blue. Peru. Syn., *Physalis prostrata*. Andr. Rep. t. 75.

Caccinia. (After Signor Caccini, an Italian. Nat. ord., *Compositæ*.)

- C. glauca*. Blue. Persia. 1883.

Ca'ctus.

- C. myriostigma* is now referred to *Astrophytum myriostigma*.

Calade'nia. Syn., *Leptoceras*.

- C. fimbriata*. Yellow. May. West Australia. Syn., *Leptoceras fimbriata* and *L. pectinata*.
- *Menziesii*. Yellow. May. West Australia. Syn., *Leptoceras oblonga*.

Cala'dium.

- C. adamantium*. Leaves dark green, veined and dotted with white. Peru. 1891. Ill. Hort. new ser. t. 132.
- *medioradiatum*. Leaves dark green; midrib and its two chief branches silvery-white. Columbia. 1891. Ill. Hort. new ser. t. 128.
- *sagittatum*. Leaves dark green, midrib feathered with red. Brazil. 1891. Ill. Hort. new ser. t. 138.

Calampe'lis.

- C. scabra ro'sea* is a variety of *Eccremocarpus scaber* with orange-red flowers. 1891.

Calandri'nia.

- C. polyandra*. Purple. August. Australia. 1853. Syn., *Talinum polyandrum*. B. M. t. 4833.

Cala'nthe.

- C. Eyerma'nii*. A hybrid between *C. vestita* and *C. Veitchii*. 1891.
 — *labro'sa*. Yellowish-brown, purple. Moulmein. 1879. Syn., *Limatodes labrosa*.
 — *Myle'sii*. White; lip white, tinged with lemon in the throat. A hybrid. 1890. Warn. Orch. Alb. t. 402.
 — *Sanderia'na*. 2. Lilac; lip darker. E. Tropical Africa. 1892.
 — *vesti'ta Fournie'rii*. A small-flowered variety. Borneo. 1892.
 — *viridi-fu'sca*. A synonym of *Tainia latifolia*.

Ca'lla.

- C. Pentla'ndi*. See *Richardia Pentlandi*.

Calliste'mon.

- C. macrosta'chyum*. A synonym of *Kunzea Baisteri*.

Calocho'rtus.

- C. amo'e'nus*. Deep rosy-pink or purple. July. 1892.
 — *Kenne'dyi*. Bright scarlet, black. July. California. 1892. B. M. t. 7264.

Calosa'nthes.

- C. i'ndica*. The correct name of this is *Orozylum indicum*.

Calotha'mnus.

- C. sangui'neus*. Red. May. Swan River. Syn., *Conothamnus eriocarpus*.

Calpu'rnia.

- C. robinio'des*. S. Africa. Syn., *Robinia capensis*.

Calyco'pteris.

- C. floribu'nda*. 6. Yellow, green. India. 1815. Syn., *Getonia floribunda*.
 — *nu'tans*. 6. India. 1816. Syn., *Getonia nutans*.

Calydo'rea.

- C. specio'sa*. 1. Blue. June. Chili. 1836. Syn., *Sisyrinchium speciosum*. B. M. t. 3544.

Campa'nea.

- C. Humbol'dtii*. 3. Green, purple. Central America. 1853. Syn., *Rhytidophyllum Humboldtii*.
 — *Oerste'dtii*. 2. Green, purple. Central Amer. 1852. Syn., *Rhytidophyllum Oerstedii*.

Campa'nula.

- C. exco'sa*. July. Switzerland. 1891.
 — *sin'e'nsis*. 3. Blue. China. 1846. Syn., *Platycodon sinensis*. Lem. Jard. Fl. t. 250.
 — *Spe'culum*. See *Prismatocarpus Speculum*.
 — *Wanne'ri*. See *Symphyanthra Wanneri*.

Cansco'ra. Syn., *Pladera*.

- C. Pari'shii*. 2. White. Moulmein. 1864. B. M. t. 5429.

Caragua'ta.

- C. Belea'na*. 2. White. Rev. Hort. 1891, p. 114, fig. 27.

Carallu'ma.

- C. campanula'ta*. Brownish-purple. Ceylon. 1892. B. M. t. 7274.

Ca'rex.

- C. gra'cilis*. Japan, India and Australia. 1892.

Carludo'vica.

- C. micropeta'la*. Pale yellow. Costa Rica. 1892. B. M. t. 7263.

Catakidoza'mia.

- C. Maelsa'yi*. A synonym of *Macrozamia Perouskiana*.

Catase'tum.

- C. Leichtenstei'nii*. Green, brown. 1892.

Ca'ttleya.

- C. Aleza'ndrae*. Dull brown; lip rosy-purple. Brazil. 1892.
 — *Ame'sia*. Garden hybrid. 1891.
 — *amo'na*. Garden hybrid. Orch. 1891, p. 273.
 — *au'rea Statteria'na*. Syn., *C. Statteriana*. 1892.
 — *Batali'nii*. Rosy-purple, whitish, deep rose. Brazil. 1892.
 — *Blese'nsis*. Garden hybrid. 1892.
 — *Burberry'na*. Garden hybrid. 1892.
 — *cri'spa delicatissi'ma*. White, mauve-purple. S. Brazil. 1891. Warn. Orch. Alb. t. 424.
 — *Gaskellia'na specio'sa*. White, rose-purple. 1891.
 — *grandiflo'ra*. A synonym of *Sophronitis grandiflora*.
 — *Hardya'na Gardenia'na*. Rose, yellow, magenta-purple. 1892. Lind. t. 363.
 — *Laversine'nsis*. Rosy-purple. 1891.
 — *interme'dia punctati'ssima*. Pale rose, deep purple. S. Brazil. 1891. Rech. ser. 2, t. 24.
 — *labia'ta marmora'ta*. A mottled variety, known in some gardens as *C. Wanneri*. 1892.
 — *Sande'rae*. Whitish, deep crimson. 1892.
 — *leucoglo'ssa*. Garden hybrid. 1892.
 — *Lourya'na*. A supposed hybrid. 1891.
 — *Mina'cia*. Garden hybrid. 1892.
 — *Mo'ssae'de'cora*. A form with lip yellowish veined with magenta-purple. La Guayra. 1891. Warn. Orch. Alb. t. 421.
 — *Owenia'na*. Creamy-white, crimson, gold. 1892.
 — *Parthe'nia*. Garden hybrid. 1891. Lind. t. 276.
 — *Philo* and var. *albiflo'ra*. Garden hybrids. 1892.
 — *princeps*. A variety of *C. Schofieldiana*. 1892.
 — *Schro'deria'na Leyswoode'nsis*. White, orange. 1892.
 — *speciosi'ssima Sanderia'na*. Pure white. 1892.
 — *Statteria'na*. See *C. aurea*, var. *Statteriana*.
 — *Veda'sti*. Garden hybrid. Orch. 1891, p. 48.
 — *Victoria-regi'na*. Reddish; lip white, crimson. Brazil. 1892.
 — *Warocqua'na amethystina*. Rosy-purple, orange, maroon. 1891. Lind. t. 268.

Cautle'ya.

- C. spica'ta*. 1. Purple. June. Nepal. 1820. Syn., *Roscoea spicata*.

Ceano'thus.

- C. la'niger*. See *Pomaderris lanigera*.

Cela'strus.

- C. pyraca'nthus* is a synonym of *Putterlickia pyracantha*.

Centrose'ma. See *Siphocampylus*.**Cera'stium.**

- C. decal'vans*. White. June. Servia. 1892.

Ceratosti'gma.

- C. plumbagino'i'des*. 2. Blue. July. China. 1845. Syn., *Plumbago Larpentæ*.

Ce'bera.

C. undulata. See *Ochrosia borbonica*.

Ce'reus.

C. Sargentii nus. 15. Pink. Lower California. 1891.

Chætothylax.

C. eustachya na. Red, yellow. Summer. W. Indies. Syn., *Justicia eustachiana*. B. M. t. 2076.

Chamædo'rea.

C. stolonifera. 3. Yellow. S. Mexico. 1892. B. M. t. 7265.

Chamæli'rium. *Helonias lutea* and *H. pumila* are now included in this genus.

Chamæ'rops.

C. hystrix. See *Rhaphidophyllum hystrix*.
— *Murtia* na. See *Trachycarpus khasyanus*.

Cheira'nthera.

C. parviflora. Purple. W. Australia. 1892. B. M. t. 7261.

Cheiro'stylis.

C. marmorata is a synonym of *Dossinia marmorata*.

Chionodo'xa.

A hybrid has been raised between *C. Lucilia* and *Scilla bifolia*.

C. Luciliae Alle'ni. Blue, white, pink. March. Mount Taurus. 1892.

Chiri'ta.

C. depressa. Purple. China. 1892. B. M. t. 7213.

Chiro'nia.

C. angustifolia, *C. decussa'ta*, and *C. frutescens* are synonyms of *Orpium frutescens*.

Chlorophytum.

C. nepalense. Syn., *Phalangium nepalense*. B. R. t. 998.

Cimici'fuga.

C. palma'ta is a synonym of *Trautvetteria palmata*.

Cirrhop'e'talum.

C. Amesia'num. Rosy-purple, yellow. Dutch Indies. 1892. Lind. t. 314.

— *Colletia'num*. Dark purple, yellow. Upper Burmah. 1891. B. M. t. 7198.

— *elegantulum*. Pale, maroon-purple. Madras. 1891.

— *Wendlandia'num*. Purple. British Burmah. 1891.

Ci'ssus.

C. porphyrophyllus is a synonym of *Piper porphyrophyllus*.

Ci'trus.

C. buxifolia is a synonym of *Severinia buxifolia*.

Cle'matis.

C. brevicauda'ta. China. 1888. Syn., *C. Pieroti*.

Clia'nthus.

C. carneus is a synonym of *Strebilorrhiza speciosa*.

Cliveu'charis.

C. pulchra. A hybrid between *Clivia miniata* and *Eucharis grandiflora*. 1891.

Cochlio'da.

C. Næzlia'na. Andes. 1891. Lind. t. 266. Syn.,

Odontoglossum Næzlianum.

— *sanguinea*. Deep rose. Ecuador. 1867.

Syn., *Mesospinidium sanguineum*.

— *vulcanica*. Lake, rose. Peru. 1872. Syn.,

Mesospinidium vulcanicum.

Co'cos.

C. Norma'nbyi. See *Ptychosperma Normanbyi*.

— *Pynce'rtii*. A seedling form of *C. Weddelliana*. G. C. 1891, xi. p. 683.

Cœlo'gyne.

C. cu'prea. G. C. 1892, xi. p. 619.

— *Micholitzia'na*. White, brown. Macassar. 1891.

Co'lechiem.

C. Bornmuller'i. Purplish. May. Orient. 1892.

— *Decaisnei*. Rosy-purple. Lebanon. 1892.

Co'leus.

C. Penz'gii. Blue. Abyssinia. 1892.

Colorado Beetle. *Doryo'phora decemlineata*.

Colu'tea.

C. melanocalyx. Yellow; calyx covered with dark hairs. Asia Minor. 1892.

Corallobo'trys.

C. acuminata. 4. Red. Khasia. Syn., *Epi-gynium acuminatum*. B. M. t. 5010.

Cory'anthes.

C. leucocorys. Greenish-yellow, brownish-purple, white. Peru. 1891. Lind. t. 293.

— *macrocor'rys*. Yellowish-white, purple. Peru. 1892. Lind. t. 342.

Co'smos.

C. spectabilis. Garden hybrid. Rev. Hort. 1892, p. 372, figs. 114, 115.

Co'stus.

C. Engleria'na. White, yellow. Tropical Africa. 1892. Syn., *C. unifolius*.

— *Lucanusia'na*. Purple, yellow. Cameroons. 1892. Gf. t. 1379.

Cra'ssula.

C. Schweinfurthii. White. Abyssinia. 1892.

Craterosti'gma.

C. pulchrum. Lilac, purple, white. India. 1871. Syn., *Torenia auriculatafolia*. Flor. Mag. t. 534.

Cri'num.

C. abyssinicum. White. Abyssinia. 1892. Gf. 1892, p. 412, fig. 89.

— *firmifolium*. White? Madagascar! 1892.

— *jemense*. White. Arabia. 1892.

— *Roozenia'num*. White; filaments red. Jamaica. 1891.

— *yucoeyfolium*. White. Abyssinia. 1892.

Croco'sma.

C. aurea. 2. Orange. July. S. Africa. 1846. Syn., *Tritonia aurea*. B. M. t. 4335.

Cro'cus.

C. biflorus Leichtli'ni. White or pale purple. Mardin. 1891.

— *Bilho'vii*. Rich purple. February. Stauros. 1892.

— *hyemalis Fo'xii*. White, yellow; anthers black. January. 1892.

— *margaritaceus*. Pale blue, striped with violet outside. B. R. 1847, t. 16.

Crotalaria.

- C. angustifolia.* See *Lebeckia sericea*.
— *pulchella.* See *Lebeckia cytisoides*.

Cryptarrhena. (Nat. ord., *Orchidaceæ*; Tribe, *Vandeeæ-Oncidiaceæ*.)

- C. luna* ta. Greenish; lip yellow. B. R. t. 153.

Cryptocarpus.

- C. globosus.* Variegated. June. Cuba. 1830.
Syn., *Salpianthus purpurascens*.

Cryptophoranthus.

- C. atropurpureus*. $\frac{1}{2}$. Dark purple. Jamaica. 1838. Syns., *Masdevallia fenestrata*, B. M. t. 4164, and *Pleurothallis atropurpureus*.

Cudrania.

- C. triloba*. China. 1872. Syn., *Maclura tricuspidata*.

Curculigo.

- C. veratrifolia*. 2. Yellow. June. S. Africa. 1778. Syn., *Hypoxis veratrifolia*.

Cucuma.

- C. Bakeriana*. Orange. New Guinea. 1892.

Cusparia.

- C. undulata*. White. Brazil. 1892.

Cyclamen.

- C. alpinum*. Purplish-red. Asia Minor. 1892.
— *tauricum*. Pure white. Taurus. 1892.

Cyclogyne.

- C. canescens* is a synonym of *Swainsonia canescens*.

Cynoches.

- C. peruvia* num. Green, purplish-brown, white. Peru. 1891. Lind. t. 301.
— *Rossiana* num. Male yellowish-green; female bright green. 1891.

Cylista.

- C. albiflora* is a synonym of *Rhynchosia cyanosperma*, var. *albiflora*.

Cymbidium.

- C. Humboldtii*. Green, black. Madagascar. 1892.
— *Huttoni*. See *Grammangis Huttoni*.
— *Lowiana* num *viride*. Greenish-yellow. 1892.
— *pulcherrimum*. White, crimson. N. India. 1891.
— *Winnia* num. Garden hybrid. 1892.

Cynanchum.

- C. minus*. See *Vincetoxicum fuscatum*.

Cypripedium.

- C. californicum*. Dull yellow; lip white, spotted with pale brown. May. California. 1891. B. M. t. 7188.
— *Chamberlainiana* num. 2. Rosy-purple, white. New Guinea. 1892. G. C. 1892, xi, 284, fig. 34.
— — *excelsens*. A variety with pale dorsal sepal. 1892.
— *ezul*. A variety of *C. insigne*. G. C. 1892, xi, p. 522, fig. 77.
— — *Imshoottiana* num. A variety with narrower perianth segments. Siam. 1892.
— *Godefruyi* *luteum*. Yellow, pale rosy-lilac. 1891.
— *insigne longispalum*. An unspotted variety. 1891.

The following hybrids were described during 1891-92: *Adra'stus*, *Albertiana* num, *Alci'des*, *ama-*

bile, *Bac'nis*, *Bro'uni*, *Bry'ani*, *Bry'sa*, *Céres*, *Chryso'comes*, *Clappa'tra*, *Corringia* num, *Cowleya* num, *Dai'syæ*, *Desboisiana* num, *Desboescheria* num, *de'orum*, *E'di'tha*, *Engelhardtæ*, *Eury'lochus*, *fé'stum*, *g'gas*, *He'cla*, *Ja'nthe*, *Java'nico-spiceria* num, *Johnsoniana* num, *Ju'no*, *Lavrebel'ium*, *Le'da*, *macroch'ilum*, *Macfarlanei*, *Nio'be* var. *super'bum*, *O'rphæus*, *Pa'llas*, *Pe'ræus*, *southgate'nsis*, *Swinburnei*, *Tel'machus*, *Ti'tyus*, *Von Molia* num, *Warne'ro-super'biens*, *Youngiana* num var. *super'bum*.

Cyrta'nthera.

- C. catalpa'folia*. See *Jacobinia aurea*.
— *chryso'ste'phana*. See *Jacobinia chryscste-phana*.

Cyrta'nthus.

- C. Galpi'ni*. Bright red. August. Transvaal. 1892.
— *parviflorus*. Bright scarlet. January. 1891.

Cyrtium.

- C. falcatum pedunculatum*. A narrow variety of pendulous habit. 1892.

Cyrtosperma.

- C. fé'rox*. Greenish-white. Borneo. 1892. III. Hort. new ser. t. 153.

Cytisus.

- C. fra'grans*. Syn., *Spartium nubigenum*.
— *schiepkæ'nsis*. 1. White. Balkan Mountains. 1892.

D.

Dabœ'cia.

- D. cantabrica calyculata*. Red or white. Garden variety. 1891.

Damasodium.

- D. indicum*. A synonym of *Ottelia indica*.

Da'phne.

- D. glomerata*. Lilac-purple. Caucasus. 1891.

Daphnopsis.

- D. cora'folia*. $\frac{1}{2}$. Blue. April. 1846. Syn., *Nordmannia cordifolia*.

Dendrobium.

- D. barbatulo-chlorops*. A supposed natural hybrid. 1892.
— *bigibbum albomarginatum*. Flowers edged with white. 1892. Lind. t. 317.
— *chrysoe'phalum*. Golden-yellow. 1892.
— *Dalhousiana* num *luteum*. Straw-yellow. India. 1891.
— *densiflorum clavatum*. White, yellow. Shan States. 1892.
— *Leea* num. White, rose, green. New Guinea. 1891.
— *ni'veum*. See G. C. 1891, ix, p. 104.
— *Obrieniana* num. Yellowish-green. Philippine Islands. 1892.
— *Phalaenopsis Rothschildiana*. Snowy-white, pink. 1892.
— *punctatum*. See *Dipodium punctatum*.
— *Wardia* num *alatum*. White, orange-yellow. India. 1892. Warn. Orch. Alb. t. 450.

The following are garden hybrids described during 1892: *Adra'sta*, *burfordiense*, *du'loc*, *euo'stum leuco'pterum*, *Eury'clea*, *Ne'stor*, *Ro'lfææ*, *strid'um*, and *Wardia'no-japonicum*.

Dendrochilum.

- D. cucumerinum*. See *Platylinis cucumerinum*.

Dendrospar'tium.

D. æthnense. 3. Yellow. July. Sicily. 1816.
Syn., *Genista æthnense*.

Dia'nthus.

D. Brivatensis. Hybrid between *D. superbus* and *D. barbatus*. 1892.

— *callizonus*. Rosy-purple, darker in the centre. June. Transylvania. 1892. B. M. t. 7223.

— *Freymii*. Purple. May. Bosnia. 1892.

Dichæ'a.

D. glauca. Green, purple. June. Mexico. 1837. Syn., *Epidendrum glaucum*.

Dichorisa'ndra.

D. angustifolia. Ecuador. 1892. Ill. Hort. new ser. t. 158.

— *musaica gigantea*. A robust variety. 1892.

Didymocarpus.

D. lacunosa. Violet-blue. Penang. 1892. B. M. t. 7236.

Dieffenbachia.

D. meledgris. Ecuador. 1892. Ill. Hort. new ser. t. 159.

— *O'lbiana*. Peru. 1892. Ill. Hort. new ser. t. 148.

— *picturata*. Venezuela. 1892. Ill. Hort. new ser. t. 162.

Diera'ma. (From *dierama*, a funnel; in allusion to the shape of the flowers. Nat. ord., *Iridaceæ*; Tribe, *Ixiææ*.)

D. pendula. 1. Dark or pale pink. June. South Africa. 1825. Syn., *Sparaxis pendula*. B. R. t. 1360.

— *pulcherrima*. 5. Blood-purple. Cape Colony. Syn., *Sparaxis pulcherrima*. B. M. t. 5555.

Digitalis.

D. ciliata. Summer. Caucasus. 1892.

Diosma.

D. Wendlandii. White. S. Africa. 1892.

Dipeadi.

D. viridis. Syn., *Zuccagnia viridis*.

Di'pidax.

D. ciliata. $\frac{1}{2}$. Pale yellow. June. S. Africa. 1810. Syn., *Melanthium ciliatum*. *M. secundum* is a white-flowered form.

Dipodium.

D. pictum. 1. Yellow, crimson. Java. 1849. Syn., *Wattlesia picta*.

— *punctatum*. 1-2. Red, purple. Australia. 1822. Syn., *Dendrobium punctatum* and *Wattlesia punctata*.

Di'sa.

D. Cooperi. Rosy-carmine, lip yellow. S. Africa. 1892. B. M. t. 7256.

— *incarnata*. Orange-red. Madagascar. 1892. B. M. t. 7243.

Di'sporum.

D. lanuginosum is a synonym of *Streptopus lanuginosus*.

Disso'tis.

D. villosa. 3. White. July. Brazil. 1820. Syn., *Pteroma villosa*.

Dolichandro'ne.

D. Rheedii. 16. Cream. E. Indies. 1749. Syn., *Spathodea longiflora* and *S. Rheedii*.

Dracæ'na.

D. Coulli'ngii. A hybrid. 1892.

— *Sanderia'na*. Leaves green striped with white. 1892.

E.

Echeve'ria.

E. Fuhl'ni. A seedling form. 1892.

Echidno'psis.

E. Dammanniana. Brown. Abyssinia. 1892.

Echinea.

E. angustifolia is a synonym of *Rudbeckia paltda*.

Eleutheri'ne.

E. plicata. 1-1. White. Tropical America. Syn., *Moraea plicata*, *M. palmifolia*, *Marica plicata*, B. M. t. 655, and *Sisyrinchium palmifolium*.

Emmena'nthe. (Nat. ord., *Hydrophyllaceæ*.)

E. penduliflora. 2. Yellowish. July. California. 1892.

Ence'lia. See also *Pallasia* and *Ximensia*.

Epidendrum.

E. Godseffianum. Brown, white, rosy-purple. Brazil. 1892. Syn., *E. Copartianum*. Lind. t. 333.

— *Mantinia'num*. Pale green, dotted with purplish-brown. Ill. Hort. new ser. t. 150.

— *Ortgiesii*. Red, white, purple. 1892.

— *Watsonianum*. Brazil. 1892.

Eranthemum.

E. coccineum. See *Thyrsacanthus Lemaireanus*.

Eremo'phila. *Stenochilus* (which see) is now united with this genus.

Eremospar'tum.

E. aphyllum. Syn., *Genista aphylla* and *Spartium aphyllum*.

E'ria.

E. Laucheana. Green, purple. 1892.

— *vestita*. White, reddish-brown. 1892.

Eritri'chium.

E. nothofolium. White. California. 1892.

Esmeralda. See *Arachnanthe*.

Eu'charis.

E. Clibrani. See *Urceocharis Clibrani*.

Eu'comis.

E. bifolia. See *Whiteheadia bifolia*.

Eulophie'lla.

E. Elizabethæ. White; lip yellow. 1892. Lind. t. 325.

Eulophia.

E. Mackenii. Pink, white. Natal. 1892.

Eupato'rium.

E. scandens. Jacq. Ic. t. 169. See *Mikania scandens*.

Eupho'rbia. Syn., *Poinsettia*.

E. canalicula'ta, B. C. t. 727, and *E. carina'ta*, B. R. t. 837 are synonyms of *Pedilanthus tithymaloïdes*.

Eu'ryops.

E. pectina'tus. 2. Yellow. May. S. Africa. 1731. Syn., *Othonna pectinata*. B. M. t. 306.

— *virgi'neus*. 3. Yellow. October. South Africa. 1821. Syns., *Othonna flabelli'folia*, B. C. t. 728, and *O. virginea*.

Euta'xia.

E. microphy'lla. 2. Yellow. May. Australia. 1803. Syn., *Sclerothamnus microphy'llus*.

Eute'rpe.

E. monta'na. A synonym of *Prestœa montana*.

Evo'dia.

E. frazini'folia. 2. Whitish. April. Cochinchina. 1822. Syn., *Tetradium trichotomum*.

F.

Fa'gus.

F. sylva'tica fo'liis stria'tis. Leaves with golden stripes parallel with the nerves. Hesseia. 1892.

— — *Zla'tia*. Leaves golden-tinted. Servia. 1892.

Fi'cus.

F. Sycomor'us. 30. Egypt. Syn., *Sycomorus antiquorum*.

— *variega'ta*. 4. South Africa. 1816. Syn., *Sycomorus capensis*.

Fra'xinus.

F. raiboca'rya. Central Asia. Wien. Gartz. 1892, p. 111, fig. 36.

G.

Gala'ctia.

G. filifo'rmis. 3. Purple. July. S. America. 1820. Syn., *Sweetia filiformis*.

— *longifo'lia*. 4. Purple. S. America. 1818. Syn., *Sweetia longifolia*.

— *tenuifo'lia*. 5. Purple. St. Domingo. 1824. Syn., *Sweetia lignosa*.

Gale'ga.

G. du'bia. Jacq. Ic. t. 576. See *Lessertia dif'fusa*.

Garci'nia. See also **Xanthochymus**.

Garde'nia.

G. Ra'ndia. B. M. t. 1841. See *Randia aculeata*.

Gaylussa'cia.

G. brachy'cera. 1. White. May. N. America. Syn., *Vaccinium buxifolium*. B. M. t. 928.

Geissorhi'za.

G. roche'nsis. Violet-purple. Cape Colony. Syn., *Ixia rochenis*. B. M. t. 598.

— — *spitha'mœa*. A more robust variety.

Gentia'na.

G. orega'na. 1-2. Blue. September. North America. 1892.

G. visco'sa. B. M. t. 2185. See *Izanthus viscosus*.

Ge'snera.

G. ama'bilis. B. M. t. 5085. See *Nœgelia multiflora*.

Ge'um. See also **Sieversia**.

Gi'lia.

G. dichotoma. 1½. Pink. California. 1838. Syn., *Linanthus dichotomus*.

Gladi'olus.

G. armeni'acus. Deep purple. July. Armenia. 1892.

— *oppositifo'rus*. 6. White, purple. October. S. Africa, not Madagascar as previously believed. Re-introduced 1892.

— *secu'riger*. B. M. t. 383. See *Tritonia securigera*.

Glo'bba.

G. purpu'rea. Andr. Rep. t. 615. See *Mantisia saltatoria*.

Glyci'ne.

G. chine'nsis and *G. sine'nsis* are synonyms of *Wistaria sinensis*.

— *hi'spida*. 3. Violet. July. E. Indies. 1790. Syns., *Dolichos Soja* and *Soja hispida*.

Goode'nia.

G. filifo'rmis. Yellow. Australia. 1841. Syn., *Velleia lanceolata*.

Grinde'lia.

G. coronopifo'lia. See *Xanthocephalum centauroides*.

Guatte'ria.

G. cerasoi'des and *G. subero'sa*. See *Polyalthia cerasoides* and *P. suberosa*.

Guizo'tia.

G. olei'fera. Syn., *Veslingia sativa*.

Gutierre'zia.

G. gymnospermoï'des. See *Xanthocephalum gymnospermoides*.

Gymnolo'mia.

G. macula'ta. See *Wulffia maculata*.

Gynopleu'ra.

G. linearifo'lia. 1½. Purple, blue. September. Chili. 1831. Syns., *Malesherbia coronata*, *M. fasciculata*, and *M. linearifolia*, B. M. t. 3362.

Gynu'ra.

G. sarmento'sa. Orange. Malaya. 1892. B. M. t. 7244.

Gypso'phila.

G. Raddea'na. Pale pink. Persia. 1892. Gf. t. 1365, figs. 5-8.

H.

Habena'ria.

H. longicalca'ra. White. Western Ghauts of India. 1892. B. M. t. 7228.

Hale'sia.

H. tetra'ptera Meeha'ni. A seedling variety. 1892.

Heberde'nia.

H. excel'sa. 20. Red. July. Madeira. 1784. Syns., *Ardisia excelsa* and *Myrsine Heberdenia*.

He'ctea.

H. Elleme'e'i. See *Rhodostachys Ellemeeti*.
— *pitcairniaefolia*. See *Rhodostachys pitcairniaefolia*.

Helichry'sum. Syn., *Swammerdamia*.

Helico'nia.

H. spectabilis. Leaves green above, dull purple beneath; midrib red. Tropical Asia. 1892. Ill. Hort. new ser. t. 156.

Heli'pterum. Syn., *Rhodanthe*.

H. Mangle'sii. Syn., *Rhodanthe Manglesii*.

Helo'nias.

H. gramin'nea is a synonym of *Stenanthium angustifolium*, var. *gramineum*.
— *virginica* is a synonym of *Melanthium virginicum*.

He'speris.

H. arabidiflora. See *Parrya arabidiflora*.

Heterophra'gma.

H. adenophyllum. E. Indies. 1822. Syn., *Spathodea adenophylla*.

He'vea. Syn., *Siphonia*, which see.

Hology'ne. See *Lasthenia*.

Homogy'ne.

H. alpi'na. $\frac{1}{2}$. Lilac, purple. April. 1710. Syn., *Tussilago alpina*.

Hue'nia.

H. Penz'gii. $\frac{1}{2}$. Blackish-purple. Abyssinia. 1892. Syn., *H. macrocarpa*.

Hyaci'nthus.

H. botryoi'des. See *Muscari botryoides*.
— *comosus*. See *Muscari comosum*.
— *racemosus*. See *Muscari racemosum*.

Hudnophy'tum.

H. Forbe'sii. White. New Guinea. 1892. B. M. t. 7218.

Hy'drocleis.

H. Commers'oni. $\frac{1}{2}$. Yellow. May. Brazil. 1831. Syn., *Limncharis Humboldtii*. B. R. t. 1640.

Hyospa'the.

H. pubi'gera. See *Prestaea pubigera*.

Hypochæ'ris. See also *Seriola*.

I.

Illawarra Pine. *Podocarpus spinulosa*.

Impa'tiens.

I. Michol'tzi. White, rose. New Guinea. 1892.

Ioni'dium. Syn., *Solea*.

Ipomœ'a. Syn., *Skinneria*.

I. Brons'oni. Cuba. 1892.
— *limifo'lia*. Yellow. May. E. Indies. 1827. Syn., *Skinneria cœspitosa*.

I'ris.

I. asia'tica. Gard. 1892, xli., p. 121.
— *mad'onna*. Lilac-blue. Arabia. 1892. Evergreen.
— *maricoi'des purpu'rea*. Purple. Syria. 1892.
— *nepale'nsis Le'tha*. Blue. Summer. Upper Burmah. 1892. Fragrant.
— *pa'rabi'da*. Hybrid between *I. iberica* and *I. paradoxa*. May. 1892.

Ischnosi'phon.

I. Parke'ri. 2. Yellow. July. Grenada. 1823. Syn., *Phrynium Parkeri*.

Isolo'ma. Syn., *Sciadocalyx*.

I. ignora'tum. Yellow, scarlet. Central Amer. Syn., *Kœhleria ignorata*.
— *rupe'stre*. Red. Nicaragua. 1871. Syn., *Kœhleria rupestris*.
— *Warszewiczii*. Syn., *Sciadocalyx Warszewiczii*, which see.

I'xia.

I. bi'color. A synonym of *Synnotia bicolor*.

Ixioli'rion.

I. macra'nthum. Deep blue, purple. 1892.
— *Sinten'i'st*. Blue. 1892.

Ixo'ra.

I. fe'rrea. 20. Pink. W. Indies. 1793. Syn., *Siderodendron triflorum*.
— *salmo'nea*. Salmon, buff. 1892. Garden variety.

J.

Jankæ'a.

J. Heldrei'chii. A synonym of *Rimondia serbica*.

Jo'hnia. See *Salacia*.

Juri'nea.

J. linearifo'lia. 2. Purple. July. Siberia. 1816. Syns., *Serratula multiflora* and *S. linearifolia*.
— *mollis*. 2. Purple. July. Transylvania. 1818. Syn., *Serratula transylvanica*.
— *Poll'i'chii*. 2. Red. July. Siberia. 1778. Syn., *Serratula cyanoides*.

Justi'cia.

J. lila'cina. See *Thyrsacanthus callistachyus*.
— *longiracemo'sa*. See *Thyrsacanthus Lemaireanus*.

K.

Kalancho'e.

K. marmora'ta. White. Abyssinia. 1892. B. M. t. 7333.

Ke'ntia.

K. Macarthu'rice. See *Ptychosperma Macarthuriae*.

Kla'ttia.

K. parti'ta. 1-2. Bright blue. April. Cape Colony. 1822. Syn., *Witsenia partita*.

Knipho'fia.

K. Nelso'ni. 2. Orange-scarlet. Orange Free State. 1892.
— *paucifo'ra*. Pale yellow. March to July. Natal. 1892. B. M. t. 7269.

Ku'nzea.

K. seri'cea. Rose. May. Swan River. Syn., *Salisia pulchella*.

L.

Labi'sia.

L. smaragdina. Pink. Borneo. 1892. Ill. Hort. new ser. t. 160.

Læ'lia.

- L. a'nceps ama'bilis*. White, yellow, purple. 1889.
 — — *Owenia'na*. A richly coloured variety. 1892.
 — — *Schræde'ra*. Pale rose, brown, yellow, purple. 1887.
 — — *Sté'lla*. White, yellow, carmine. 1887.
 — — *virgí'na'tis*. White, pale sulphur-yellow. 1887.
 — *autumna'lis a'lba*. Pure white. 1889.
 — — *xanthotro'pis*. Rosy-purple, yellow. Mexico. 1887.
 — *cri'spa Cawwela'rtia*. Lip greenish-yellow at the base. Brazil. 1891. Ill. Hort. new ser. t. 121.
 — *delle'nsis*. A garden hybrid. 1889.
 — *Digby'na-Mo'ssica*. A fine hybrid between *L. Digbyana* and *Cattleya Mossica*. G. C. 1889, v. pp. 658 and 742.
 — *e'legans exce'llens*. Rosy, white. 1892.
 — *Gottol'na*. Rose, purple, maroon. 1891.
 — *grá'ndis tenebro'sa*. Coppery-bronze, purple, white. Brazil. 1891. Rchb. ser. 2, t. 33.
 — *irrorá'ta Gaskellia'na*. Pale lilac, purple, lilac. 1887.
 — *Lato'na*. Garden hybrid. 1892.
 — *lila'cina*. Pale lilac, white, purple. 1887.
 — *Owenia'na*. Garden hybrid. 1892.
 — *pro'stans a'lba*. Ivory-white, crimson. 1889.
 — *pu'mila Curlea'na*. Purple with darker streaks. 1886.
 — *purpura'ta Handleya'na*. Dark coloured variety. 1892.
 — — *Lowia'na*. Rose, mauve-purple, yellow. 1887.
 — *rube'scens a'lba*. White, yellow. 1887.
 — — *ro'sea*. Syn., *L. peduncularis*. B. R. 1845, t. 69.
 — *sup'e'rbiens Quesnelia'na*. Rosy-mauve, magenta-purple, yellow. Mexico and Guatemala. 1889. Warn. Orch. Alb. t. 383.
 — *Victo'ria*. A garden hybrid. 1889.

Læ'lio-Ca'ttleya.

The following hybrids have been raised, in addition to those mentioned on p. 540: *Aurora*, *Cassiope*, *elegans* var. *Cookiana*, *Ingramii*, *Martriottiana*, *Phæ'be* and *Sté'lla*.

Lagena'ria.

L. virgí'na'tis. Fruit waxy white. G. C. 1892, xi. p. 85, fig. 16.

La'mium.

L. Orva'le. B. M. t. 172. See *Orvala lamioides*.

Lando'phia.

L. fo'rida. White. Tropical Africa. 1887. B. M. t. 6963.

Lapeyrou'sia. This name now supersedes *Peyrousia*, which see.

L. grandiflo'ra. 1. Bright red, yellow, crimson. S. E. Tropical Africa. 1887. Syn., *Anomatheca grandiflora*.

Lasiogro'stis.

L. Calamagro'stis is a synonym of *Stipa Lasia-grostis*.

Lasiopetalum.

L. quercifolium. See *Thomasia quercifolia*.

Lasi'opus.

L. sonchoides. See *Taraxacum montanum*.

Lasiosi'phon.

L. anthylloides. Yellow. S. Africa. 1889.

Lastræ'a.

L. Jenma'ni. Jamaica. Syn., *Nephrodium Jenmani*.
 — *le'pida*. G. C. 1886, xxvi. p. 681.

La'tace.

L. Volkma'nni. White. Andes of Santa Rosa. 1889. Gf. t. 1302, fig. 1.

Lau'rus.

L. Sa'safras. See *Sassafras officinale*.

Lepa'chys. See *Rudbeckia*.**Lepto'tes.**

L. bi'color bre'vis. A variety of *Tetramicra bicolor* with a white lip. 1892.

Li'lium.

L. primu'num. Pale yellow, greenish. Upper Burmah. 1892. B. M. t. 7227.
 — *sulphu'reum*. Yellow, tinged with crimson outside. B. M. t. 7259. Syn., *L. ochroleucum* and *L. Wallichianum*, var. *superbum*.

Limna'nthemum. See also *Meyanthes* and *Villarsia*.

Limnophy'ton.

L. obtusifolium. 2. White. July. China. 1804. Syn., *Sagittaria obtusifolia*.

Lisso'chilus.

L. Græ'fei. Green, brown, yellow. 1892.

Loni'cera.

L. syringa'ntha. Pale pink. N. China. 1892.

Ly'chnis.

L. a'spera. Syn., *Viscaria oculata*.

Lycopo'dium.

L. Moorea'num. Brazil. 1892.

M.

Macdona'ldia. See *Thelymitra*.

Macfayde'nia.

M. corymbo'sa. 6. Yellow. Trinidad. 1824. Syn., *Spathodea corymbosa*.

Macrade'nia.

M. mu'tica. See *Trichopitia mutica*.

Macrolo'bium. Syn., *Vouapa*.**Maia'nthemum.**

M. Convalle'ria. $\frac{1}{2}$. White. June. N. America. 1812. Syn., *Smitacina canadensis*.

Ma'mmea.

M. africa'na is a synonym of *Ochrocarpus africanus*.

Mapa'nia. Syn., *Pandanophyllum*.**Mara'nta.**

M. chimborace'nsis. Ill. Hort. 1870, t. 6.
 — *Sanderia'na*. G. C. 1892, xi. p. 731.

Ma'rica.

M. occidenta'lis. Yellow. Peru. 1892.

Masdevallia.

M. Harryana Gravel'sia. Pure white. 1892.

The follow hybrids were raised in 1892: *Cassiope falcata*, *McVittie* and *Shuttryana*.

Maxillaria. See also **Xylobium.**

M. densa. B. R. t. 1804. See *Ornithidium densum*.

Meconopsis.

M. diphylla and *M. petiolata* are synonyms of *Stylophorum diphyllum*.

Me'ntha.

M. punctata. See *Preslia cervina*.

Merte'nsia.

M. pulmonarioides. 1½. Blue. April. N. America. 1799. Syn., *Pulmonaria virginica*. B. M. t. 160.

Mi'crodon.

M. cylindrica. ¾. Purple. August. S. Africa. 1807. Syn., *Selago polygaloides*.

— *lucida*. 1½. Purple. June. S. Africa. 1812. Syn., *Selago bracteata*.

— *ovata*. 1. Dark purple. August. S. Africa. 1774. Syns., *Selago ovata*, B. M. t. 186, and *S. spicata*.

Micromé'ria.

M. nervosa. 1. Purple. Ionian Islands. 1820. Syn., *Satureia nervosa*.

Micro'stylis.

M. Scottii. ¾. Green, purple. Malaya. 1892. B. M. t. 7268.

Milto'nia.

M. Clowesii gigantea. Garden variety. 1892.

Mimo'sa.

M. guianensis. See *Stryphnodendron guianense*. — *Spagazinii*. Stamens pale violet. Argentina. 1892.

Mirbe'lia.

M. Baxteri is a synonym of *Oxylobium scandens*.

Moni'zia.

M. edulis. A synonym of *Thapsia edulis*.

Monodo'ra.

M. grandiflora. B. M. t. 7260.

Montano'a.

M. arboreascens. 3. Yellow. July. Mexico. 1823. Syn., *Verbesina atriplicifolia*.

Moræ'a.

M. Candolleana. Syn., *Viesseuxia iridioides*. Red. Lit. t. 340.

Mormo'des.

M. buccinator aurantiacum. Orange, yellow. Peru. 1892. Ill. Hort. new ser. t. 144.

Mormoly'ce.

M. lineolata. Yellow, green. Mexico. 1839. Syn., *Trigonidium ringens*.

Morono'bea. Syn., *Symphonia*.**Mu'sa.**

M. Martini. Bright rose. Teneriffe. Rev. Hort. Belg. 1892, p. 102, fig. 12.

Myrica'ria.

M. davurica. Syn., *Tamarix davurica*. — *germanica*. Syn., *Tamarix germanica*.

Myrsi'ne.

M. Urvilleani. Syn., *Suttonia australis*.

Myrtus.

M. tomentosa. See *Rhodomyrtus tomentosa*.

N.

Nau'clea.

N. coadunata. See *Sarcocephalus cordatus*. — *Gambir*. 10. Pale red. E. Indies. 1825. Syn., *Uncaria Gambir*.

— *sessilifru'tus*. 10. Pale red. E. Indies. 1829. Syn., *Uncaria sessilifru'tus*.

Neme'sia.

N. strumosa. 1-2. Very variable in colour, white, ochre, pale yellow, orange, scarlet, carmine, or rosy-purple. August. South Africa. 1892. B. M. t. 7272. Hardy annual.

Neo'ttia. See also **Spiranthes.****Nephrole'pis.**

N. dallii des m'lticeps. A crested variety. 1892.

Nicotia'na.

N. tomentosa. B. M. t. 7252. This name supersedes *N. collosa*.

Nola'na.

N. rostrata. A synonym of *Osteocarpus rostratus*.

Nothosco'r'dum.

N. aureum. A synonym of *Bloomeria aurea*.

Nymphæ'a.

N. Laydekeri rosea. Rosy-pink. A hybrid? 1892.

O.

O'cimum.

O. viscosum. 1½. Blue. August. E. Indies. 1826. Syn., *Plectranthus viscosus*.

Odontoglo'ssum.

O. Andersonianum pulcherrimum. Pale yellow, blotched with brownish-red. 1892.

— *crispum nobiliss*. White, brownish-red. 1892.

— *Rea*. Rosy, chestnut. 1892.

— *Sanderæ*. A variety with numerous spots. 1892.

— *zeanthotes*. White, with yellow spots. Columbia. 1892.

— *Owenianum*. White, yellow, brown. Columbia. 1892.

— *Pescatorei Lindénia*. Each sepal and petal bears one large purple blotch. 1892. Lind. t. 329.

— *platycheilum*. Creamy-white, pink, purple. Central America? G. C. 1892, xi. p. 587, fig. 84.

— *triumphans aureum*. Yellow, orange. Columbia. 1892. Warn. Orch. Alb. t. 460.

— *Wickednum nobilior*. A pale coloured variety. 1892.

CENO'thera.

C. dentata. 1. Yellow. August. Russia. 1836. Syns., *Sphaerostigma hirtum* and *S. Chamissonis*.

— *minutiflora*. 1. Yellow. August. Russia. 1837. Syn., *Sphaerostigma minutiflorum*.

Oncidium.

- O. Enderianum*. A supposed natural hybrid. G. C. 1892, xi. pp. 535 and 650, fig. 94.
 — *Gravesia num.* Yellow, brown. S. Brazil. 1892.
 — *Rolfea num.* Yellow, brown. Columbia. 1892.
 — *Saintlegeria num.* 1½. Yellow, bright purple. S. Brazil. 1892

Onobrychis.

- O. iacónica.* Bright pink. Summer. Servia. 1892.

Oporanthus.

- O. lutea.* A synonym of *Sternbergia lutea*.

O'rchis.

- O. bicornis.* See *Satyrium cucullatum*.

Oreodaphne.

- O. californica.* A synonym of *Umbellularia californica*.

Oreopanax.

- O. Sanderianum.* Greenish. Guatemala. 1892.

O'robos.

- O. lathyroides.* A synonym of *Vicia oroboides*.

Orthocarpus.

- O. erianthus roseus.* 1. Cream to purple. June. N. America. Syn., *Triphysaria versicolor*.

Otte'lia.

- O. alismoides.* White. July. E. Indies. 1806. Syn., *Stratiotes alismoides*.

Oxypetalum.

- O. cœruleum.* 3. Blue. July. Tucumania. 1836. *Tweedia cœrulea* and *T. versicolor*. B. M. t. 3630.
 — *solanoides.* Pink. July. Brazil. 1838. Syn., *Tweedia floribunda*, *T. pubescens* and *T. rosea*.

P.

Palicourea.

- P. spicata.* Syn., *Psychotria lineata*.

Pandanus.

- P. Dyerianus.* A variegated form of *P. lævis*. 1892.
 — *pacificus.* Pacific Islands. 1892.

Pasi'thea.

- P. cœrulea.* B. M. t. 7249.

Passeri'na.

- P. hirsuta* is a synonym of *Thymelæa hirsuta*.
 — *Stelleri* is a synonym of *Stellera chamaejasme*.

Pelargonium. Syn., *Seymouria*.

- P. multibracteatum.* White. Abyssinia. 1892.

Pele'xia.

- P. Travassosii.* 1. White. Brazil. 1892.
 — *Wendlandiana.* 2. Greenish-brown, white. 1892.

Pentapetes.

- P. suberifolia.* A synonym of *Pterospermum suberifolium*.

- Pentroge'ton.** A synonym of *Cras-sula*.

Peperomia.

- P. metallica.* Leaves dark green, veined with pale green and red. Peru. 1892. Ill. Hort. new ser. t. 157.

Peristea.

- P. Lindeni.* Pale and dark purple. 1892. Lind. t. 328.

Perne'ttya.

- P. phyllireæfolia.* 1. White. Peru. 1812. Syn., *Arbutus phyllireæfolia*.

Peti'tia.

- P. oleina.* 2. Green, white. May. Mexico. 1840. Syn., *Scleröon oleinum*.

Phai'us.

- P. hybridus.* A hybrid between *P. grandifolius* and *P. Wallichii*.
 — *Sanderianus.* Probably a hybrid. 1892.

Phalæno'psis.

- P. Amphitrite* and *P. Artemis* are garden hybrids. 1892.
 — *Schilleriana purpurea.* Dark rosy-purple. 1892.

Phylloca'ctus.

- P. Franzii.* A garden hybrid. 1892. Gfl. t. 1370, fig. 1.
 — *Pommeri Eschei.* A garden hybrid. 1892. Gfl. t. 1370, fig. 2.

Phyllocladus. Syn., *Thalamia*.

Piara'nthus.

- P. pili'ferus.* A synonym of *Trichocaulon pili-ferum*.

Pilea.

- P. involucreta.* Green. October. St. Vincent, W. Indies. 1823. Syn., *Urtica involucreta*. B. M. t. 2481.
 — *reticulata.* Red, yellow. August. Jamaica. 1793. Syn., *Urtica reticulata*. B. M. t. 2567.

Pina'nga. See also *Seaforthia*.

Pleurotha'llis.

- P. teretifolia.* Brown. Brazil. 1892.

Podachæ'nium.

- P. andinum.* White, yellow. Columbia. 1892. Rev. Hort. 1892, p. 414, figs. 125-6.

Podaly'ria.

- P. capensis.* See *Virgilia capensis*.
 — *tupinoides.* See *Thermopsis lanceolata*.

Podocarpus.

- P. pectinatus.* Leaves silvery. New Caledonia. 1892.

Polemonium.

- P. cœruleum campanulatum.* Bright lilac-blue. April. N. Europe. 1892

Poly'gonum.

- P. orientale variegatum.* A garden variety with variegated leaves. Rev. Hort., 1892, p. 37, fig. 8.

Poterium. Syn., *Sanguisorba*.

Po'thos.

- P. cannaefolium.* B. M. t. 603. See *Spathi-phyllum cannaefolium*.

Pri'mula.

P. finna'rchica. Dark lilac. Summer. Lapland. 1892.

Prismatoca'rpus.

P. panicula'tus. See *Roella pedunculata*.

Prosa'rtes.

P. lanugin'o'sus. 1½. Yellow, green. June. N. America. 1812. Syns., *Streptopus lanuginosus* and *Uvularia lanuginosa*. B. M. t. 1490.

Pro'tea.

P. imbrica'ta, Andr. Rep. t. 517, is a synonym of *Sorocephalus imbricatus*, not of *Leuca-dendron buxifolium* as stated on p. 801.

Pru'nus.

P. pro'cox. A garden seedling. Rev. Hort. 1892, p. 488, figs. 142-3.
— *Salze'ri*. Fruit yellowish-white. Carinthia. 1892.

Pte'ris.

P. crista'ta. G. C. 1892, xii. p. 249.
— *Regi'næ*. G. C. 1892, xii. p. 249.
— *tre'mula varia'ga'ta*. G. C. 1892, xii. p. 249.

Ptychora'phis.

P. augu'sta. 10. Nicobar Islands. G. C. 1892, xii. p. 397, fig. 63.

Pultenæ'a.

P. euchi'ta. 2. Yellow. May. N. S. Wales. 1824. Syn., *Spadostyles Sieberi*.

Q.

Que'rcus.

Q. macedo'nica. G. C. 1892, xii. p. 669.
— *Schochia'na*. A hybrid between *Q. Phellos* and *Q. palustris*.

R.

Ranu'nculus.

R. carpa'thicus. 1. Golden-yellow. May. E. Hungary. 1892. B. M. t. 7266.

Rhi'psalis.

R. aculea'ta. Whitish. Argentina. 1892. Rev. Hort. 1892, p. 428.
— *a'niceps*. Yellowish-white. Brazil. 1892. Syn., *Lepismium anceps*.
— *capillifo'rmis*. White. Brazil. 1892.
— *clava'ta*. White. Brazil. 1892.
— *comore'nsis*. Greenish-white. Comoro Islands. 1892.
— *dissi'milis setulo'sa*. Brazil. 1892. Syn., *R. setulosa*.
— *gibbe'rule*. White. Brazil. 1892.
— *gonoca'rupa*. White. Brazil. 1892. Syn., *R. pterocarpa*.
— *madagascarie'nsis*. Greenish. Madagascar. 1892.
— *salicornio'des bambuso'des*. Orange or red-dish. Brazil. 1892.
— *suarezia'na*. Diego Suarez. 1892.
— *tetra'gona*. A dwarf species. 1892.
— *tucumane'nsis*. White, rosy. Argentina. 1892.
— *virga'ta*. White. Brazil. 1892.
— *Warmingia'na*. White. Brazil. Gf. 1892, p. 8, figs. 5-7.
— *zanziba'rica*. Zanzibar. 1892.

Rhodode'ndron.

R. Lusco'mbei. Garden hybrid. 1880. G. C. 1892, xi. p. 780.

R. racemo'sum. Rose, white. Yunnan. 1892. Gard. xiii. p. 820, t. 878.

Richa'rdia.

R. aura'ta. Spathes yellow. 1892.
— *Pentla'ndi*. Spathes rich yellow. S. Africa. 1892. Syn., *Calla Pentlandi*.

Robi'nia.

R. neo-mexica'na luxu'rians. June and August. Colorado and Southern Rocky Mountains. 1892.

Rodrigue'zia.

R. Linde'ni. A synonym of *R. pubescens*.

Ro'sa.

R. glutino'sa yarmale'nsis. 2½. Pale red. Mountains near Smyrna. 1892.

Ru'bus.

R. ca'ssius turkesta'nica. Turkestan. Gf. 1892, p. 106, fig. 25.
— *Miltepar'ghi*. A bramble destitute of spines. N. America. 1892.
— *xanthoca'rpus*. 1. White; fruit yellow. N. China. 1892. Syn., *R. Potanini*.

S.

Sa'pium.

S. sebi'ferum. 10. Yellow. China. 1703. Syn., *Stillingia sebifera*.

Sarcochi'lus.

S. Berkelei'yi. Syn., *Thriasperrum Berkeleyi*.
— *bornee'nsis*. Yellowish. Borneo. 1892. Ill. Hort. new ser. t. 161.
— *Sillemia'num*. Syn., *Thriasperrum Sillemia-num*.

Saxi'fraga.

S. Macnabia'na. A garden hybrid. G. C. 1893, xiv. p. 299.

Scabio'sa.

S. Correvonia'na. ¾. Pale yellow. May. Ab-chasia. 1892.

Schizoco'don.

S. soldanolo'des. ½. Deep rose to bluish white. April. Japan. 1892.

Sci'lla.

S. bipart'i'ta. Blue. Winter. Morocco. 1892.

Semperv'vum.

S. Thomey'eri. A garden hybrid. 1892.

Senec'io.

S. Galpi'ni. 1. Bright orange. Transvaal. 1892. B. M. t. 7239.
— *sagittifo'lus*. 10. White, yellow. Uruguay. Rev. Hort. 1892, p. 53, figs. 16-17.

Smilaci'na. Syn., *Tovaria*.

S. olera'cea. 4. White. Sikkim. 1877. Syn., *Tovaria oleracea*.

Smi'lax.

S. argy'rea. Leaves spotted with white. Bolivia. 1892. Ill. Hort. new ser. t. 152.

Sobole'wskya.

S. clava'ta. White. May. Armenia. 1892.

Sobra'lia.

S. Beyeria'na. 1½. White, rosy-pink; lip rosy-lilac, white. 1892.
— *Lucasia'na*. White, lilac; lip rosy-lilac, yellow. 1892.

Sola'num.

- S. corona'tum.* 3. Leaves dark green; prickles violet and grey. 1892.
— *dublosumma'tum.* Blue; fruit white. Abyssinia. Wien. Gart. 1872, p. 472, fig. 79.

Sopbroca'ttleya.

- S. Ve'i'tchii.* Garden hybrid between *Laelio-Cattleya elegans* and *Sophranitis grandiflora.* 1892.

Spathoglo'ttis.

- S. Viella'rdui ru'bra.* A dark-coloured variety. Journ. of Hort. 1892, xxv. p. 529, fig. 70.

Sphæro'gyne.

- S. latifo'lia.* See *Tococa latifolia.*

Stanho'pea.

- S. Molia'na.* Yellowish, white, purple. Peru. 1892. Lind. t. 331.

Sta'tice. Syn., *Taxanthema.***Stauro'psis.**

- S. Warocqua'na.* Yellow, reddish-brown; lip white with rosy spots. New Guinea. 1892. Lind. t. 319.

Stena'ndrium.

- S. Beekmania'num.* Garden hybrid. 1892. Ill. Hort. new ser. t. 166.

Stereospe'rum.

- S. chelono'i des.* Syn., *Bignonia chelonoides.*
— *hyposti'ctum.* 20. Yellow. E. Indies. 1828. Syn., *Bignonia amœna.*
— *serra'tulum.* E. Indies. 1832. Syn., *Bignonia serratula.*
— *suave'olens.* 30. White. E. Indies. 1829. Syn., *Bignonia suberosa.*
— *xyloca'rpum.* White. W. Indies. 1820. Syn., *Tecoma xylocarpa.*

Synandropa'dix.

- S. vermilo'xicus.* 1. Greyish-green, flesh-colour. Tuckman. 1892. B. M. t. 7242.

T.

Tacso'nia.

- T. Smythia'na.* A hybrid or seedling. G. C. 1892, xii. pp. 442 and 794, fig. 109.

Tali'num.

- T. ro'seum.* Rose. Abyssinia. 1892.

Tchihatche'wia.

- T. isati'cea.* Bright rosy-pink. May. Armenia. 1892.

Thali'ctrum.

- T. rhynocœa'rpum.* 3. Summer. Transvaal. 1892.

Thunbe'rgia.

- T. grandiflo'ra c'iba.* Pure white. 1892.

Tilla'ndsia.

- T. Massangea'na.* Leaves barred with bronze. 1892.
— *Moënsii.* Leaves yellowish-green, barred with pale green. 1892.

Tradesca'ntia.

- T. de'cora.* Leaves olive green, with a band of silvery grey. Brazil. 1892.
— *Regi'nœ.* Leaves whitish-green, marked with dark green and purple. Peru. 1892. Ill. Hort. new ser. t. 147.

- T. supe'ra.* Leaves dark green, striped with white, purple beneath. Peru. 1892. Ill. Hort. new ser. t. 155.

Trichode'sma.

- T. physalo'i des.* Pure white; calyx purple. S. Africa. G. C. 1892, xi. p. 363, fig. 51.

Trichopi'lia.

- T. bre'vis.* Yellow, reddish-brown, white. Peru. 1892. Ill. Hort. new ser. t. 332.

Tu'lipa.

- T. Billietia'na.* Lemon-yellow, tinged with red. May. Upper Savoy. B. M. t. 7253.

U.

Urope'talum.

- U. Beazzea'num.* $\frac{1}{2}$. Green. Abyssinia. Gf. 1892, p. 611, fig. 127.

Utricula'ria.

- U. Humboldtii.* $\frac{1}{2}$. Pale lavender. British Guiana. 1892.
— *longifo'lia.* Manve. British Guiana. 1892.

V.

Va'nda.

- V. Arbuthnotia'na.* Golden-yellow, striped with purple. Malabar. 1892.
— *te'res a'iba.* Pure white. 1892.
— *vitelli'na.* Egg-yellow. 1892.

Verno'nia.

- V. podocoma.* 3. Rose purple. S. Africa. 1892. B. M. t. 7255.

Veronica.

- V. monticola.* Blue. Summer. Abyssinia. 1892.

Vi'ola.

- V. declina'ta.* $\frac{1}{2}$. Bright purple, with a yellow eye. May. Transylvania. 1892.

Vrie'sia.

- V. obli'qua.* Garden hybrid. 1892. Gf. t. 1369.
— *tessela'ta Sanderia'na.* A variety with the leaves more distinctly zoned and marbled. 1892.

W.

Warscewicze'lla.

- W. Lindeni.* See *Zygopetalum Lindeni.*

Y.

Yu'cca.

- Y. Hanburyi.* $1\frac{1}{2}$. White. N. America. 1892.

Z.

Zelko'va.

- Z. japonica Verscha'ffelti.* G. C. 1892, xii. p. 669.

Zygope'talum.

- Z. graminifo'lum.* Green, purple. 1892. Lind. t. 340.
— *leucochi'tum.* Garden hybrid. 1892.
— *Linde'ni.* White; lip veined with rosy-purple. 1892. Lind. t. 337. Syn., *Warscewicze'lla Lindeni.*

LIST OF WORDS,

WITH THEIR MEANINGS, MOST FREQUENTLY USED AS SPECIFIC NAMES.

N.B.—Words used chiefly as prefixes or suffixes are marked thus:—*oxy-*, *-anthus*. Adjectives ending in *-us* have *-a* and *-um* as the feminine and neuter terminations respectively; those ending in *-is* take *-is* and *-e*. Only the masculine forms have been given below, unless the other genders contain differences additional to those just mentioned, *e.g.*, *acer*, *campester*, etc. Substantives used as specific names are rarely given in this list. Words derived from the names of persons or places, which are generally self-explanatory, are omitted, except in a few cases.

ABB

abbrevia'tus, shortened.
aborti'vus, abortive.
abru'ptus, torn off, abrupt.
absci'ssus, cut off.
acanthifo'lius, prickly-leaved.
acau'lis, stemless.
acce'dens, approaching.
a'cer, *-cris*, *-cre*, sharp, pungent.
ace'rbus, sour.
acro'cladon, branched at the top.
aculea'tus, furnished with prickles.
acumina'tus, sharply pointed.
acu'tus, pointed. In combination *acuti-*.
admira'bilis, wonderful, astonishing.
adna'scens, growing to or upon.
adna'tus, united to.
adpre'ssus, pressed on.
adsce'ndens, ascending.
adspe'rsus, bestrewed.
adsu'rgens, rising up.
adulteri'nus, adulterous, not genuine.
adumbra'tus, counterfeit.
adu'ncus, curved inwards.
a'dvena, a stranger.
a'ger, *-ra*, *-rum*, sick, unwell.
a'mulus, rivalling, vying with.
aqua'lis, equal.
equinoctia'lis, relating to the equinox.
estiva'lis, } relating to summer.
esti'vus, }
a'stuans, hot, in great commotion.
affi'nis, neighbouring, related.
aggrega'tus, joined with.
agni'nus, relating to a lamb.
agre'stis, field, rustic.
ala'tus, winged.
albe'llus, whitish.

AMP

albe'scens, becoming white.
albicans, white.
albicau'lis, white-stemmed.
albidus, whitish.
albiflo'rus, white-flowered.
albispi'nus, white-spined.
albive'nus, white-veined.
alboct'netus, surrounded with white.
alboosti'pes, white-stalked.
a'lbus, white.
alcico'rnis, elk's-horn.
algidus, cold.
alie'nus, not related.
allia'ceus, garlic-like.
allophy'llus, with leaves of another kind.
aloi'des, aloe-like.
alpe'stris, mountain.
alpi'nus, alpine.
*alte'rnan*s, alternating.
alti'ssimus, highest.
ama'bilis, amiable, lovable.
amarican'lis, bitter stemmed.
amaru's, bitter in taste.
ambi'guus, of doubtful nature.
amethysti'nus, amethyst-coloured.
amethystoglo'ssa, with an amethyst-coloured tongue (or lip).
ame'nus, pleasant, delightful.
amo'rpha, shapeless.
amphi'bium, amphibious, living under two conditions.
amphora'tus, pitcher-like.
amplexica'lis, sheathing the stem.
amplexifo'lius, with sheathing leaves.
a'mplus, large, spacious.
ampulla'ceus, bottle-shaped.

anaca'ntha, without spines.
a'niceps, two-headed.
ancilla'ris, relating to a maidservant.
anfractu'sus, bending.
angui'neus, pertaining to a snake.
angula'ris, } angular.
angula'tus, }
angulo'sus, full of corners.
angusta'tus, narrow.
angustifo'rus, with narrow flowers.
angustifo'lius, narrow-leaved.
angustilo'bus, with narrow lobes.
angu'stior, narrower.
angusti'ssimus, very narrow.
angu'stus, narrow.
anno'sus, long-lived.
anno'tinus, a year old.
annula'ris, } furnished with rings.
annula'tus, }
a'nnuus, annual.
-anthus or *-anthos*, -flowered, e.g.,
brachyanthus, short-flowered.
anti'cus, forward, in front.
anti'quus, ancient.
ape'rtus, uncovered, exposed.
ape'tala, without petals.
aphy'llus, without leaves.
apicula'tus, furnished with a point.
apo'da, without a foot.
appendicula'tus, bearing an appendage.
applana'tus, flattened out.
appla'ca'tus, applied to, lying near.
appre'ssus. See *adpressus*.
a'ptera, wingless.
aqua'ticus, } living in water.
aqua'tilis, }
a'queus, watery.
aquili'nus, relating to an eagle, eagle-
 like.
arachni'tis, cobwebby.
arachnoi'des, spider-like.
arbore'scens, } tree-like.
arbo'reus, }
arcua'tus, bow-shaped.
a'rdens, fiery.
areno'sus, sandy.
areola'tus, furnished with small open
 spaces.
argu'tus, acute, sharp.
a'ridus, dry.
arista'tus, furnished with a point (from
arista, the point of an ear of corn).
arma'tus, armed.
armilla'ris, } adorned with an armilla
armilla'tus, } or collar.
aroma'ticus, aromatic.
arre'ctus, steep.
articula'tus, jointed.
arundina'ceus, reed-like.
arve'nsis, pertaining to a corn-field.
a'sper-, *-era*-, *-erum*, rough.
aspera'tus, roughish.
aspe'rri'mus, very rough.
aspe'rsus, scattered, bestrewed.

asplenifo'lius, with leaves resembling an
Asplenium.
assi'milis, similar.
assu'rgens, standing or rising up.
a'ter-, *-tra*-, *-trum*, black.
atra'tus, clothed in black.
atro-, black-
attenua'tus, attenuate.
augu'stus, majestic.
au'licus, princely.
auranti'acus, orange-coloured.
aura'tus, } golden.
au'reus, }
auri'comus, golden-haired.
auri'tus, long-eared.
austra'lis, southern.
autumna'lis, autumnal.
avena'ceus, oaten.
avicula'ris, pertaining to a small bird.
axilla'ris, axillary.
axillifo'rus, with the flowers axillary.
azu'reus, azure-blue.

B.

bacca'tus, berried. Originally meaning
 set with pearls.
bacci'ferus, bearing berries.
baculi'ferus, bearing small twigs.
ba'dius, chestnut-coloured.
balsa'micus, } balsam-bearing.
balsami'ferus, }
barba'tulus, with a small beard.
barba'tus, bearded.
basila'ris, basal.
begonia'fo'lius, with leaves like a Begonia.
be'llus, pretty.
benedi'ctus, praised.
berberifo'lius, with leaves like a Ber-
 beris.
beta'ceus, Beet-like.
bi-, two-
biarticula'tus, two-jointed.
bi'color, two-coloured.
bie'nnis, of two years.
bipinna'tus, twice pinnate.
bipinnati'fidus, twice pinnatifid.
bise'ctus, cut into two parts.
bitumino'sus, pitchy.
bla'ndus, pleasant, flattering.
bo'nus, good.
borea'lis, northern.
botryoi'des, bearing bunches like grapes.
brachia'tus, provided with arms.
brachy-, short-, e.g., *brachyphyllus*,
 short-leaved.
brachya'ndra, with short stamens.
bractea'tus, furnished with bracts.
bracteola'tus, furnished with bracteoles.
bre'vis, short, e.g., *brevifolius*, short-
 leaved.
brillianti'ssimus, very or most brilliant.
bruma'lis, relating to the shortest day.
bryoi'des, moss-like.

bubuli'nus, relating to an ox.
bufo'nus, relating to a toad.
bulbi'ferus, bearing bulbs.
bulbo'sus, furnished with a bulb, swollen.
bullat'us, transitory. Most frequently used in the sense of having the appearance of being covered with bubbles (*bullæ*, a bubble).
bullula'tus, covered with small bubbles.
butyra'ceus, butter-yielding.
buxifo'lus, box-leaved.
byzanti'nus, Turkish.

C.

cæru'leus, dark-blue. Also spelt *cæruleus*.
cærule'scens, becoming dark-blue.
cæsius, bluish-grey.
cæspito'sus, tufted, turfey.
calcara'tus, spurred.
calo- (Greek, *kalos*), beautiful.
calo'coma, beautiful-haired.
caloglo'ssa, beautiful-tongued.
calome'lanos, beautiful black.
calo'pterum, beautiful-winged.
calo'thrice, beautiful-haired.
calve'scens, to become bald, or to grow up thinly.
calyci'nus, furnished with a calyx or cup.
calycula'tus, furnished with a small calyx.
ca'mbricus, Welsh.
campanula'tus, bell-shaped.
campanulifo'rus, with bell-shaped flowers.
campester, -*tris*, -*tre*, relating to plains.
campy, curved-. (Greek, *kampulos*.)
campyla'cantha, with curved spines.
canalscula'tus, channeled.
cancellat'us, latticed.
ca'ndicans, becoming white.
candidi'ssimus, very white and shining.
ca'ndidus, shining white.
cane'scens, hoary.
cani'nus, pertaining to dogs.
ca'nus, whitish-grey.
cape'nsis, cape, usually, when applied to plants, referring to the Cape of Good Hope.
capilla'ceus, } hair-like, capillary.
capilla'ris, }
capita'tus, furnished with a head.
capitella'tus, furnished with a little head.
capreola'tus, pertaining to a goat.
capsula'ris, furnished with a capsule.
cardinal'is, red (rarely used in botany for jointed).
cardua'ceus, thistle-like.
carico'sus, sedgy.
carina'tus, keeled.
caris'simus, most esteemed.

ca'rneus, } fleshy, flesh-coloured.
carno'sus, }
cartilagi'neus, horny.
ca'strus, spotless, chaste.
cathar'ticus, purging.
cauda'tus, tailed.
caule'scens, } stemmed.
-cau'lis, }
ca'vus, hollow.
centi, hundred-. (Latin, *centum*.)
cephal-, a head. (Greek, *kephale*.)
cera'micus, pertaining to pottery.
cerasifo'rnis, cherry-shaped.
ceri'ferus, wax-bearing.
ce'rnuus, inclined, nodding.
cervi'nus, pertaining to a stag.
cheil-, lip-. (Greek, *cheilos*.)
cheir-, hand-. (Greek, *cheir*.)
chlor-, pale green. (Greek, *chlōros*.)
chrys-, golden-. (Greek, *chrusos*.)
ciba'rius, relating to food.
cilia'ris, } furnished with hairs like eye-
ilia'tus, } lashes.
ci'nectus, surrounded.
cine'reus, ashy.
cinnabari'nus, cinnabar, vermilion.
cinnamo'meus, cinnamon-like.
circina'tus, curled up like the head of a crosier.
circum-, around.
circumci'ssus, cut around.
cirrho'tus, or *cirrho'sus*, furnished with cirrhi or curls.
cirrho'ferus, bearing cirrhi.
citri'nus, yellow.
clandest'i'nus, secret, concealed.
clari'ssimus, most brilliant.
clava'tus, club-shaped.
clypeat'us, shield-like.
coarcta'tus, confined.
cocci'neus, scarlet.
cochlea'ris, } snail-shaped, spiral.
cochlea'tus, }
coe'lestis, heavenly.
cæru'leus, dark-blue. Sometimes spelt *cæruleus*.
coll'i'nus, hilly.
col'o'rans, colouring.
colora'tus, coloured.
col'o'sseus, gigantic.
columella'ris, pillar-shaped.
columna'ris, columnar.
co'mans, } hairy.
coma'tus, }
commu'nis, common, social.
commuta'tus, changed.
com'o'sus, hairy.
compa'ctus, compact.
complana'tus, flattened out, levelled.
comple'xus, encompassed.
complica'tus, folded together.
compo'situs, compound.
compre'ssus, compressed.
co'mptus, adorned.

conca'vus, concave.
conch-, shell. (Latin, *concha*.)
conchifo'rmis, shell or horn-shaped.
conci'nus, neat, elegant.
co'ncolor, similar in colour, of the same colour.
condensa'tus, condensed.
confe'rtus, compressed, dense.
conge'stus, brought together, congested.
conglomera'tus, heaped together.
co'nicus, conical.
consolida'tus, thickened, consolidated.
conspi'cuus, visible, striking, conspicuous.
constri'ctus, constricted.
contamina'tus, defiled.
conti'guus, near.
contor'tus, twisted.
contra'ctus, contracted.
copio'sus, abundant.
corda'tus, heart-shaped.
cordifo'lius, with heart-shaped leaves.
cornicula'tus, horned, shaped like the new moon.
cornu'tus, horned.
coro'nans, crowning.
corona'tus, crowned.
corruga'tus, wrinkled.
cortica'tus or *cortico'sus*, furnished with bark.
coru'scans, flashing, trembling.
corymbo'sus, corymb-like.
costa'tus, furnished with a midrib.
crassicau'lis, thick-stemmed.
crassifo'lius, thick-leaved.
crassine'rvius, thick-nerved.
cra'ssus, thick.
crena'tus, scalloped, crenate.
crenula'tus, crenulate.
cre'pitans, crackling.
crini'tus, with stiff hairs.
cri'spus, curled.
crista'tus, crested.
croca'tus, } saffron-yellow.
cro'ceus, }
crucia'tus, cross-shaped.
crue'ntus, bloody.
crypt-, concealed-, secret-. (Greek, *krup-tos*.)
crystalli'nus, crystalline.
cuccula'tus, hooded.
cultra'tus, knife-shaped.
cunea'tus, wedge-shaped.
cu'preus, copper-coloured.
cu'rtus, short.
curva'tus, curved.
cuspidata'tus, furnished with a cusp or point.
cyaneus, dark blue.
cyanospe'rma, blue seeded.
cylindricus, cylindrical.
cymbifo'rmis, boat-shaped.
cymo'sus, cyme-like.

dasy-, thick with hair, hairy. (Greek, *dasus*.)
dasya'ntha, hairy-flowered.
dasyca'rpum, hairy-fruited.
dasyphy'llus, hairy-leaved.
dealba'tus, white-washed.
de'bilis, weak.
deca'ndra, with ten stamens.
deci'duus, deciduous, falling down.
deci'piens, deceptive.
declina'tus, bent aside.
decolo'rans, discoloured.
decompo'situs, decomposed, much divided.
deco'rus, becoming.
decu'mbens, lying down.
decu'rrens, passing down quickly. In botany generally used in the sense of passing down and adhering to, e.g., the decurrent leaves of *Symphytum officinale*.
decussa'tus, intersecting.
defi'ciens, vanishing, deficient.
defi'xus, fixed into.
defle'xus, bent down.
defo'rmis, deformed, misshapen.
dehi'scens, splitting.
delica'tus, charming, tender.
demi'ssus, lowered, thrust down.
de'ns-ca'nis, dog's tooth.
de'nsus, thick, dense.
denta'tus, toothed.
denticula'tus, with small teeth.
dennuda'tus, uncovered.
depaupera'tus, poor.
depe'ndens, hanging down.
depre'ssus, pressed down.
desci'scens, withdrawing from.
deu'stus, hurried down.
diaca'ntha, with two spines.
dia'ndra, with two stamens.
diapha'nus, translucent.
dicho'tomus, twice forked.
didi'sticha, two ranked.
di'dymus, twin.
diffo'rmis, deformed.
diffu'sus, spread about, diffuse.
digita'tus, spread out like fingers
dilata'tus, dilated.
dimidia'tus, halved, divided.
dimo'rphus, of two forms.
dioi'cus, diocious.
di'scolor, particoloured.
dispar, -*aris*, unequal.
disse'ctus, cut apart, dissected.
dissi'milis, unlike.
di'stichus, in two rows.
diu'rnus, daily.
divarica'tus, stretched apart.
diversifo'lius, with leaves of different kinds.
di'ves, rich, fruitful.
divi'sus, divided.
dolabrifo'rmis, hatchet-shaped.

dolo'sus, crafty.
dome'sticus, belonging to the house,
 domestic.
drupa'ceus, fruit, a drupe. (Latin, *drupa*,
 an over-ripe olive.)
drupi'ferus, bearing drupes.
dry'ades, pertaining to woods. (Latin,
Dryas, a wood nymph.)
du'bius, doubtful.
du'lcis, sweet.
dumo'sus, bushy, brambly.
du'plex, double.
du'rus, hard.

E.

e-, without-
ebena'ceus, like ebony.
ebractea'tus, without bracts.
ebu'rneus, like ivory.
echina'tus, spiny, prickly.
ecornu'tus, without horns.
edenta'tus, without teeth.
edu'lis, edible.
ela'sticus, elastic.
ela'tior, higher.
ela'tus, high, elevated.
e'legans, elegant.
elli'pticus, elliptical, oval.
elonga'tus, lengthened.
eme'ticus, emetic.
e'minens, prominent, distinguished.
ensifo'rmis, sword-shaped.
equ'e'ster, -*tris*, -*tre*, pertaining to horses,
 equestrian.
cre'ctus, erect.
ero'sus, gnawed away.
erube'scens, becoming red.
erythro-, red-. (Greek, *eruthrōs*.)
erythroca'rupus, red-fruited.
escule'ntus, edible.
etubero'sus, destitute of tubers.
eu-, well, beautiful, *e.g.*, *euglossa*, with
 a beautiful tongue.
exalta'tus, raised up, elevated.
exce'lsus, lofty, sublime.
exse'rtus, stretched out, exerted.
exu'dans, overflowing, exuding.
exuvia'tus, peeling off.

F.

falca'tus, scythe-shaped.
fa'llax, false, deceitful.
farino'sus, mealy, floury.
fascicula'tus, arranged in bundles.
fastigia'tus, sharpened to a point.
fe'lix, fertile, happy.
fenestra'lis, furnished with windows or
 openings.
fe'rox, wild, fierce.
fe'rreus, like iron, hence hard.
ferrugi'neus, colour of iron rust.
fibro'sus, fibry.
ficoi'deus, fig-like.

filament'o'sus, furnished with filaments,
 thready.
filicau'lis, with a thread-like stem.
filici'nus, fern-like.
fil'i'ferus, bearing threads.
fi'rmus, firm, strong, durable.
fi'ssus, split, cloven.
fiabella'tus, fan-shaped.
fla'ccidus, weak, flabby.
flagella'tus, whip-bearing.
fla'mmeus, flame-coloured, fiery red.
fla'vus, yellow.
fle'xilis, flexible.
flexo'sus, crooked.
focco'sus, woolly.
flo're a'lbo, with white flower.
flo're ple'no, with double flower (literally,
 with full flower).
flo'ridus, flowery, flourishing.
flo'rus, -flowered.
flu'itans, flowing.
fluvia'tilis, belonging to a river.
fœ'tidus, fœtid, stinking.
folio'sus, leafy.
fo'lius, -leaved.
fonta'nus, } belonging to a spring.
fontina'lis, }
fovea'tus, furnished with small pits.
fra'gilis, fragile, easily broken.
fra'grans, fragrant.
fragranti'ssimus, very fragrant.
fraxi'neus, pertaining to the Ash.
fr'i'gidus, cold, frosty.
frondo'sus, leafy.
fru'ctu a'lbo, with white fruit.
frute'scens, becoming bushy.
frutico'sus, bushy.
fuca'tus, painted, counterfeit.
fucifo'rmis, sea-weed like.
fu'gax, transitory.
fu'lgens, } gleaming, shining.
fu'lgidus, }
fuligino'sus, sooty.
fu'lvus, tawny.
funa'lis, relating to a rope.
fun'e'bris, funereal.
fun'e'stus, deadly, destructive.
fungo'sus, spongy, fungoid.
furca'tus, forked.
furfura'ceus, scurfy.
fu'sco-vi'ridis, dark green.
fu'scus, dark-coloured.
fusifo'rmis, spindle-shaped.

G.

-gaster, -bellied, *e.g.*, *stenogaster*, with a
 narrow belly.
ge'lidus, cold, icy.
gema'ntus, in pairs, twin.
gemma'tus, bearing buds.
genicula'tus, jointed like a knee, knotty.
gi'bbus, swollen, having humps.
giga'nteus, gigantic.

gi'gas, a giant.
glabe'llus, rather smooth.
glaber, -*bra*, -*brum*, smooth. Used in the sense of being destitute of hairs.
glabe'rrimus, very smooth.
glabriu'soulus, rather smooth.
glanduli'ferus,
glanduli'gerus, } bearing glands.
glandulo'sus, glandular.
glauce'scens, becoming bluish-grey.
glau'cus, bluish-grey, glaucous.
globi'ferus, ball-bearing.
globo'sus, globular.
glomera'tus, heaped into a spherical mass.
glorio'sus, glorious.
gluma'ceus, husky.
glutino'sus, sticky.
gongylo'des, rounded.
gra'cilis,
gracile'ntus, } slender.
graci'llima, very slender.
grami'neus, grassy.
gra'ndi-, large-.
gra'ndis, large.
granula'tus,
granulo'sus, } granular.
gratio'sus, favoured.
grati'ssimus, most favoured.
gra'tus, pleasant.
gra'veolens, strong-smelling, fœtid.
grossila'bris, large-lipped.
gu'mmi'fer,
gummi'ferus, } gum-bearing.
gutta'tus, speckled, spotted.
guttula'tus, with small spots.
gymn-, naked-. (Greek, *gymnas*.)
gyn-, female-. (Greek, *gune*, a woman.)
gy'rans, revolving.

H.

hæm-, blood-. (Greek, *haima*, blood.)
hama'tus, curved like a hook.
hasta'tus, armed as with spears.
hasti'lis, spear-shaped.
hedera'ceus, ivy-like.
helianthoi'des, resembling the sun-flower.
hemispha'ricus, hemispherical.
herba'ceus, herbaceous.
heteraca'ntha, having spines of different sorts.
hetera'ndrum, having stamens of different sorts.
heteroca'rpum, having fruit of different sorts.
hex-, six-.
hi'ans, gaping.
hiema'lis, wintery.
hiri'cus, relating to a he-goat.
hirsu'tulus, having short stiff hairs.
hirsu'tus, having stiff hairs.
hi'rtus, shaggy.
hispidi'ssimus, densely covered with stiff hairs.

histro'nicus, relating to actors.
holo-, wholly-. (Greek, *holos*.)
homo-, resembling-. (Greek, *homoios*.)
horizonta'lis, horizontal.
ho'rridus, shaggy, bristly, frightful, harsh.
horte'nsia, garden plants.
horte'nsis, relating to a garden.
hu'milis, little, humble.
hya'linus, glassy, transparent.
hyberna'lis, resting during winter.
hyema'lis, wintery.
hyper-, over, above. (Greek, *hyper*.)
hyperbo'reus, northern.
hypo-, under, beneath. (Greek, *hupo*.)
hypocraterifo'rmiis, salver-shaped.
hy'strix, a porcupine.

I.

ia'nthina, violet.
icosa'ndra, having twenty stamens.
i'gneus, fiery, glowing (applied to colours).
illu'stris, brilliant, renowned.
imbe'rbiis, beardless.
imbrica'tus, overlapping like tiles.
immacula'tus, unspotted.
imme'rsus, immersed.
imperia'lis, powerful, imperial.
imple'xus, interwoven.
impre'ssus, impressed, stamped.
inequa'lis, unequal.
inape'rtus, closed.
inca'nus, grey.
incarna'tus, flesh-colour.
inci'sus, divided, cut.
inclina'tus, bent, inclined.
incompara'bilis, incomparable.
inco'mptus, rough, inelegant.
inconspi'cuus, inconspicuous.
incurva'tus, curved inwards.
indivi'sus, not divided.
ine'rmis, unarmed.
infla'tus, swollen.
infra'ctus, broken.
inodo'rus, without smell.
i'nquinans, contaminating.
insi'gnis, remarkable.
integer, -*gra*, -*grum*, entire.
intege'rrius, quite entire.
interru'ptus, broken asunder, interrupted.
interte'xtus, interwoven.
intum'e'scens, swelling up.
invi'sus, unseen, secret; also hateful, hostile.
involucra'tus, furnished with an involucre.
involu'tus, rolled inwards.
iona'ntha, violet-flowered.
iride'scens, shining with varied colours.
irri'guus, well watered.
irrosa'tus, moistened, bedewed.
iso-, equal-. (Greek, *isos*.)

juba'tus, crested, having a mane.
jucu'ndus, pleasing.
juga'tus, yoked together.
jugo'sus, mountainous.
ru'nceus, rush-like.
juve'nilis, youthful.

L.

labia'tus, lipped.
labro'sus, having a wide lip.
la'cerans, lacerating.
lacinia'tus, cut in a fringe-like manner.
la'crymans, weeping.
la'cteus, milky.
lacuno'sus, full of holes.
laci'stris, pertaining to a lake or pool.
late-vi'rens, of a cheerful green colour.
laeviga'tus, smooth, polished.
la'vis, on the left hand. See also *levis*.
lamella'tus, divided into plates or lamellæ.
lana'tus, woolly.
lanceola'tus, lanceolate, spear-shaped.
lanugino'sus, woolly, downy.
la'tus, *lati-*, broad.
la'xus, *laxi-*, wide, loose.
leiocarpus, smooth-fruited.
lenticula'ris, lentil-shaped.
lentigino'sus, freckly.
le'ntus, tough.
lepido'tus, covered with scales.
le'pidus, pleasant, neat.
lepro'sus, scurfy.
lepto-, thin-. (Greek, *leptos*.)
leuco-, white-, clear-. (Greek, *leukos*.)
le'vis, light, trifling.
le'vis, smooth, polished, often erroneously written *la'vis*.
ligno'sus, woody.
lila'cinus, lilac.
limba'tus, bordered.
linea'ris, linear.
li'vidus, lead-colour, bluish-grey.
loba'tus, lobed.
lolia'ceus, relating to tares, weedy.
longe'vus, aged.
lo'ngus, long. In combination, *longi-* or *longe-*.
luna'ris, relating to the moon, moon-like.
lu'ridus, pale yellow, lurid, livid.
lute'scens, becoming yellow.
lu'teus, yellow.
luxa'tus, dislocated.
luxu'rians, luxurious.
lyra'tus, shaped like a lyre.

M.

macile'ntus, thin, lean.
macr- (Greek, *makros*), long-. Often used in botany in the sense of large, e.g., *macrantha*, large-flowered.

magni'ficus, magnificent, distinguished.
maja'lis, May.
mage'sticus, dignified.
ma'jor, -us, greater.
malifo'rmis, apple-shaped.
mallei'ferus, hammer-bearing.
mammo'sus, having large breasts.
manica'tus, having long sleeves.
margarita'ceus, pearly.
margina'lis,
margina'tus, } bordered.
mar'i'nus,
mar'i'timus, } marine.
marmora'tus, like marble.
ma'sculus, male.
matrona'lis, matronly.
maxilla'ris, relating to the jaw.
ma'ximus, largest.
me'dius, middle.
medulla'ris, relating to marrow.
mega-, large-. (Greek, *megas*.)
mei'ror, a lad or lass.
melano-, black-. (Greek, *melas*, *melaina*, *melan*.)
melio'smum, pleasant smelling.
me'lleus, relating to honey.
mellio'smum, smelling like honey.
membrana'ceus, membranous.
meta'llicus, metallic.
mi'cans, glittering.
micro-, small-. (Greek, *mikros*.)
milita'ris, military, soldier-like.
mi'nax, overhanging.
mi'nimus, smallest.
mi'nor, -us, less, smaller.
minuti'ssimus, very minute.
mira'bilis, wonderful.
mi'tis, mild, ripe.
mode'stus, moderate, unassuming.
mo'llis, soft, tender.
mon-, alone-, one-. (Greek, *monos*.)
monta'nus, mountain.
monti'colus, dwelling among the mountains.
macrona'tus, having a sharp point.
mul'tus, much, many. In combination, *multi-*.
muni'tus, secured, fortified.
murica'tus, conical, pointed.
muri'nus, relating to a mouse.
muscoi'des, moss-like.
muta'bilis, changeable.
mu'ticus, curtailed.
myri-, numberless-, infinite-. (Greek, *myrios*.)

N.

na'nus, dwarf.
napifo'rmis, turnip-shaped.
nasu'tus, having a large nose.
na'tans, swimming.
navicula'ris, boat-shaped.
nebulo'sus, cloudy, foggy.
negle'ctus, disregarded.

nemora'lis, } relating to woods, sylvan.
nemoro'sus, }
nervo'sus, sinewy, full of nerves.
ni'ger, -*gra*, -*gram*, black.
ni'gricans, blackish.
ni'tens, } shining, brilliant.
ni'tidus, }
niva'lis, } snowy, white as snow.
ni'veus, }
nivo'sus, abounding in snow, snowy.
noda'tus, knotty.
nodiflo'rus, flowering at the nodes.
nodo'sus, knotty.
nota'tus, known, marked.
nubi'genus, produced from a cloud.
nuci'ferus, bearing nuts.
nu'dus, naked.
nummularia'fo'lia, having leaves shaped like money.
nu'tans, nodding.

O.

obco'nicus, obconical, shape of a reversed cone.
obcorda'tus, shaped of a heart attached by its apex.
obe'sus, fat, corpulent.
obli'guus, oblique, aslant.
oblo'ngus, oblong.
obova'tus, reversed ovate.
obscu'rus, obscure.
obsole'tus, worn out, decayed.
obtu'sus, obtuse. In composition, *obtu-* or *obtusi-*.
obvalla'ris, surrounded with a wall.
occidenta'lis, western.
ocella'tus, spotted as with small eyes.
ochroleu'cus, yellowish-white.
octa'ndra, having eight stamens.
ocula'tus, having eyes, spotted.
odora'tus, odorous, sweet-smelling.
odorati'ssimus, very sweet-smelling.
officina'lis, officinal, pertaining to a shop.
-oides, -like.
o'lens, smelling (generally in the sense of foetid).
o'ligo-, few- (Greek, *oligos*), e.g., *oligo-sperma*, having few seeds.
olito'rus, relating to culinary herbs.
oliva'ceus, relating to the olive.
onu'stus, filled, laden.
opa'cus, shaded, obscure, opaque.
opercula'tus, having a lid.
oppositifo'lius, having opposite leaves.
orbicula'ris, } rounded, orbicular.
orbicula'tus, }
orna'tus, adorned, furnished.
orni'thopus, bird's-foot.
orth-, straight-, erect-. (Greek, *orthos*.)
ostrea'tus, rough like an oyster-shell.
ova'lis, } oval.
ova'tus, }

ovi'ferus, } egg-bearing.
ovi'gerus, }
oxy-, sharp-. (Greek, *oxus*.)

P.

pachy-, thick-. (Greek, *pachus*.)
pa'llens, pale.
palle'scens, becoming pale.
pa'llidus, pale.
paludo'sus, marshy.
palu'ster, -*tris*, -*e*, marshy, boggy. The masculine of this is frequently, though erroneously, written *palustris*.
pandura'tus, fiddle-shaped.
panicola'tus, bearing a tuft or panicle.
panno'sus, ragged, shrivelled.
papillo'sus, bearing small nipples.
papyra'ceus, parchment-like, papery.
parado'xus, strange, unexpected.
parasi'ticus, parasitic.
parti'tus, divided.
pa'rvus, small. In combination, *parvi-*.
patella'ris, dish- or platter-shaped.
pa'tens, } open, patent.
pa'tulus, }
pauci-, few-. (Latin, *paucus*.)
pavoni'nus, variegated in colour like a peacock.
pectina'tus, comb-like.
pectora'lis, relating to the breast.
peda'tus, foot-like.
peduncula'tus, stalked.
pellu'cidus, pellucid.
pelta'tus, armed with shields, shield-like.
pelvifo'rmis, basin-shaped.
pe'ndulus, hanging down, pendulous.
penicilla'tus, tufted like the hairs in a brush.
penni-, arranged like the parts of a feather. (Latin, *penna*, a feather.)
penta-, five-. (Greek, *pente*.)
pentago'nus, with five obtuse angles.
percu'ssus, pierced, struck through.
peregri'nus, foreign, strange.
per'elegans, very pretty, neat.
per'eennis, perennial.
perfo'liatus, run through the leaves.
perpusi'llus, very small.
petiola'ris, having leaf-stalks.
petra'us, rocky.
pha'um, dusky.
phyll-, leaf-. (Greek, *phullon*.)
pictura'tus, } painted.
pi'ctus, }
pilo'sus, hairy, pilose.
pinna'tus, feathered, pinnate.
pla'nus, flat. In combination, *plani-*.
platy-, flat-. (Greek, *platus*.)
ple'nus, full, filled.
pleur-, side-, lateral-. (Greek, *pleura*, a rib or side.)
plica'tus, folded.

pluma'tus, plume-like.
plu'mbeus, leaden.
plumo'sus, feathered.
pod-, foot-. (Greek, *pous*, *podos*.)
poli'tus, polished, refined.
poly-, much- or many-. (Greek, *polus*.)
pomi'ferus, apple-bearing.
po'rrigens, extending.
præ'coæ, premature, precocious.
præmo'rsus, bitten off.
præni'tens, shining forth.
præ'stans, excellent.
pra'sinus, leek-green.
prate'nsis, growing in a meadow.
precato'rius, entreating, referring to seeds used for making rosaries. See under **Abrus**, p. 2.
princeps, chief.
proce'rus, tall, slender.
procu'mbens, falling down.
procu'rrens, running forward.
profu'sus, extravagant, profuse.
propi'nquus, near, related.
pror'e'pens, creeping forth.
prostra'tus, prostrate.
protru'sus, thrust forth.
pru'riens, itching.
pseud-, false-. (Greek, *pseudes*.)
psittaci'nus, parrot-like.
ptero-, winged-. (Greek, *pteron*.)
pu'bens, arrived at full growth, luxuriant.
pube'scens, pubescent, clothed with small hairs.
pulcher, -*chra*, -*chrum*, beautiful, fair.
pulche'rrius, very beautiful.
pu'llus, dark-coloured.
pulverule'ntus, dusty.
pulvina'tus, furnished with small cushions.
pu'milus, dwarf.
puncta'tus, punctured, pricked.
pu'ngens, pricking, stinging.
purpura'scens, becoming purple.
purpu'reus, purple.
pustillus, very small.
pustulo'sus, full of pimples.
pygma'us, dwarf.
pyxida'tus, made like a turned box.

Q.

quadrangula'ris, having four angles.
quadra'tus, square.
quadri-, four-.
quercifo'lius, oak-leaved.
quinque-, five-.

R.

racemo'sus, full of clusters, racemose.
radia'tus, radiating.
radi'cans, rooting.
ramo'sus, branched.

ramosi'ssimus, very much branched.
ramulo'sus, full of little branches.
re'ctus, straight.
recu'rvus, reflexed.
refle'xus, reflexed, bent back.
regi'na, queen.
remo'tus, distant, remote.
renifo'rmis, kidney-shaped.
re'pens, sudden, unexpected.
re'ptans, creeping.
reticula'tus, netted.
retrofle'xus, bent backwards.
retu'sus, thrust back.
revolu'tus, rolled back.
rhiz-, root-. (Greek, *rhiza*.)
rhod-, rosy-. (Greek, *rhodeos*.)
rhombifo'lius, rhomboid-leaved.
ri'gidus, rigid.
ri'ngens, gaping.
ripa'rius, frequenting river banks.
riva'lis, relating to a brook.
robu'stus, strong, robust.
rosa'ceus, pertaining to roses.
ro'seus, rose-coloured.
rostra'tus, having a beak.
rotundifo'lius, round-leaved.
ru'ber, -*bra*, -*brum*, red.
ru'dis, rough, rude.
rufe'scens, becoming red.
ru'fus, ruddy.
rugo'sus, wrinkled.
ru'sticus, rural, rustic.
ru'tilans, shining with ruddy gleam.

S.

sacca'tus, baggy.
sagitta'tus, arrow-like.
sabi'gans, made of willow-wood.
saltato'rius, relating to dancing.
salvica'fo'lius, having leaves like sage.
sa'nctus, sacred.
sangui'neus, } bloody.
sanguinole'ntus, }
sarmento'sus, full of twigs.
sati'vus, cultivated.
saxa'tilis, } frequenting rocks.
saxi'colus, }
sca'ber, -*bra*, -*brum*, rough.
scala'ris, ladder-like.
sca'ndens, climbing.
scario'sus, chaffy.
sce'ptrum, a sceptre, wand.
schiz-, split-. (Greek, *schizo*, to split.)
scilla'ris, squill-like.
sclero-, hard-. (Greek, *skleros*.)
scopuli'nus, pertaining to rocks or cliffs.
scu'ptum, carved.
scuta'tus, armed with a shield.
sebi'ferus, wax-bearing.
secu'ndus, following, second-rate, turned on one side.
semi-, half-.
seni'lis, old, senile.

seta'ceus, }
seti'gerus, } bristly.
seto'sus, }
signatus, marked.
simplex, simple. In combination, *simplici-*
simulans, imitating.
sinuatus, }
sinuosus, } wavy, sinuous.
solaris, relating to the sun, solar.
solidus, solid, compact.
solitarius, solitary.
sordidus, dirty.
sparsus, scattered.
speciosissimus, most handsome.
speciosus, beautiful, handsome.
spectabilis, notable, remarkable.
sphaericus, spherical.
spicatus, bearing spikes (as of corn).
spinosus, spiny.
spiralis, spiral.
splendens, }
splendidus, } brilliant, splendid.
splendidissimus, most brilliant.
spurrius, false, bastard.
squalidus, rough, filthy.
squamatus, }
squamosus, } armed with scales.
stellatus, starry.
stelligerus, star-bearing.
steno-, narrow-. (Greek, *stenos*.)
sterilis, barren, unfruitful.
stipitatus, stalked.
stoloniferus, bearing suckers or stolons.
stramineus, made of straw.
strangulatus, choked.
strept-, twisted-. (Greek, *streptos*.)
striatus, fluted, striate.
strictus, drawn together, close.
strigosus, lean, thin.
suaevolens, sweet-smelling.
suaavis, sweet, pleasant.
sub-, *suf-*, under-, somewhat-; e.g., *sub-*
carneus, somewhat fleshy.
suberosus, somewhat corroded or
 gnawed away.
suberosus, corky.
subterraneus, underground.
subulatus, awl-shaped.
sulcatus, furrowed.
sulphureus, sulphureous, sulphur-co-
 loured.
superbus, proud, magnificent, superb.
suspenus, hanging, elevated.
sylvaticus, }
sylvestris, } pertaining to woods.

T.

tabularis, relating to boards, flat.
tardiflorus, slow- or tardy-flowering.
tectus, covered.
temulentus, intoxicated.
tenebrosus, dark, gloomy.

tener-, *-era*, *-erum*, tender, delicate.
tentaculatus, furnished with tentacles.
tenues, thin, weak.
teres, rounded, cylindrical.
terminalis, terminal.
ternatus, arranged in threes.
terrestris, terrestrial.
tessellatus, tessellated.
tetra-, four-; e.g., *tetragynum*, having
 four pistils.
tetrandra, having four stamens.
thermalis, pertaining to warm springs.
thricospermum, hairy-seeded.
tigrinus, spotted like a tiger.
tinctorius, dyed, relating to dyeing.
tomentosus, covered with matted hair,
 tomentose.
tortilis, }
tortuosus, } twisted.
tortus, }
toxicarius, poisonous.
tremitus, quivering.
tri-, three-. (Latin, *tres*, *tria*.)
trich-, hair-; e.g., *trichoclada*, having
 hair-like branches.
tricolor, of three colours.
trifolius, having three leaflets, tri-
 foliate.
tristis, sorrowful, gloomy.
triumphans, triumphant, exultant.
trivialis, ordinary, trivial.
tropicus, pertaining to the tropics.
tuberculatus, bearing tubercles or small
 tubers.
tuberosus, bearing tubers.
tubiflorus, having tubular flowers.
turbidus, conical, top-shaped.
turgidus, swollen, turgid.
typicus, typical.

U.

uliginosus, damp, marshy.
ulmifolius, having leaves resembling
 those of the elm.
umbellatus, branched like the ribs of a
 parasol.
umbonatus, having protrusions like the
 boss of a shield.
umbraculiferus, shade-yielding.
uncinatus, hooked, barbed.
undulatus, wavy, undulating.
unguiculatus, clawed.
uni-, one- (Latin, *unus*); e.g., *uniflorus*,
 having one flower.
urceolaris, }
urceolatus, } pitcher-shaped.
urens, burning, stinging.
ursinus, relating to a bear.
ustulatus, singeing.
utilis, useful, serviceable.
utilissimus, very useful.
utriculatus, bladderly.
uviferus, grape bearing.

vaci'llans, wavering, tottering.
va'gans, rambling.
vagina'tus, sheathed.
va'lidus, strong, powerful.
varia'bilis, variable.
va'rians, changing.
varico'sus, having varicose veins.
va'rius, manifold, various.
vasta'trix, a devastator.
ve'getus, vigorous.
vela'tus, covered.
velu'tinus, velvety.
veneno'sus, poisonous.
veno'sus, veined.
ventrico'sus, swollen like a belly.
venu'stus, charming, lovely.
verecu'ndus, bashful.
versa'tilis, turning about, versatile.
verna'lis, } pertaining to the spring.
ve'rnus, }
versi'color, of various colours.
verticilla'ris, } arranged in whorls.
verticilla'tus, }
ve'rus, true.
vesperti'nus, pertaining to the evening.
vesti'tus, clothed.
vexilla'rius, standard-bearing.
villo'sus, shaggy.
vimi'neus, twig-like.
vino'sus, vinous, full of wine.
viola'ceus, violet-coloured.
viol'e'scens, becoming violet.
vi'rens, green.
vi're'scens, becoming green.

viga'tus, made of twigs.
virginal'is, } pertaining to a virgin,
virgi'neus, } maiden.
vi'ridis, green.
viridi'ssimus, very green.
vi'scidus, } sticky, viscid.
visco'sus, }
vitelli'nus, yellow, like the yoke of an egg.
vitta'tus, striped with ribbons or vittæ.
vivi'parus, born alive, viviparous.
volu'bilis, twisting round.
vulga'ris, common, ordinary.
vulpi'nus, relating to a fox.

X.

xanthi'nus, } yellow. (Greek, *xanthos*.)
xantho-, }
xylo-, woody-; e.g., *xylocarpum*, woody-fruited. (Greek, *xulon*, wood.)

Y.

yuccaefo'lia, with leaves like the Yucca.

Z.

zantho-, yellow- (Greek, *xanthos*); e.g.
zanthorhiza, with yellow roots.
zonal'is, } zoned.
zonal'tus, }
zygo-, united-; e.g., *zygophyllum*, having united leaves.

LIST OF WORKS QUOTED,

WITH THE ABBREVIATIONS BY WHICH THEY ARE DESIGNATED.

*Works marked thus * are still in course of publication.*

- AIT. H. KEW.—Aiton, William. Hortus Kewensis, or a Catalogue of the Plants cultivated in the Royal Botanic Garden at Kew. 3 vols., 8vo. London, 1789. Ed. 2, by W. T. Aiton. 5 vols. 1810-1813.
- ANDR. HEATH.—Andrews, H. C. The Heathyery. 4 vols., 8vo. London, 1804-1812.
- ANDR. REP.—Andrews, H. C. The Botanist's Repository. 10 vols., 4to, 664 coloured plates. London, 1797-1811.
- B. C.—Loddiges, C. The Botanical Cabinet. 20 vols., 8vo, 2,000 coloured plates. London, 1818-1833.
- B. M.*—Curtis, C. The Botanical Magazine. 8vo. London, 1783, etc. Now edited by Sir J. D. Hooker.
- B. R.—Edwards, S. The Botanical Register. 33 vols., 8vo. London, 1815-1847. Volumes 14 to 33 were edited by Dr. Lindley.
- BATE. ORCH.—Bateman, J. Orchidaceæ of Mexico and Guatemala. 1 vol., folio. London, 1837-1843.
- BAUER IC.—Bauer, Franz. Delineations of exotick plants cultivated in the Royal Garden at Kew. Published by W. T. Aiton. 1 vol., folio, 30 coloured plates. London, 1791-1800.
- BEDD. FL. SYL.—Eddome, R. H. The Flora Sylvatica for Southern India. 2 vols., 4to. Madras, 1869-1873.
- BELG. HORT.—La Belgique Horticole. 35 vols., 8vo. Liège, 1851-1885.
- BENT. AND TR.—Bentley, Robt., and Trimen, H. Medicinal Plants. 4 vols., 8vo. London, 1875-1880.
- BERL. GART. ZEIT.—Berlin Garten-Zeitung. Monatschrift für Gärtner und Gartenfreunde. 8vo. 1892-1886.
- BRANDIS F. FLOR.—Brandis, D. The Forest Flora of North West and Central India. 1 vol., 8vo., and Atlas, 1 vol., 4to. London, 1874.
- BULL. SOC. TOSC.*—Bullettino della R. Società di Orticultura. 8vo. 1876, etc.
- ENG. BOT. ED. 3.—Boswell Syme, J. T. English Botany, or Coloured Figures of British Plants. Ed. 3, 12 vols., 8vo. London, 1863-1886.
- FL. DAN.—Floræ Danicæ. 18 vols., folio. Copenhagen, 1764-1874.
- FL. GR.—See SIBTH. FL. GR.
- FLOR. MAG.—The Floral Magazine, edited by T. Moore. 1st series, 10 vols., 8vo. London, 1861-1871. 2nd series, 10 vols., 4to. London, 1872-1881.
- FL. AND POM.—The Florist and Pomologist. 8vo. London, 1868-1884.
- FL. SER.—Flore des Serres et des Jardins de l'Europe. 8vo. Gand, 1845, etc.
- FL. TASM.—Hooker, J. D. Flora Tasmanicæ. 2 vols. 4to, 200 coloured plates. London, 1860.
- G. AND F.*—Garden and Forest. 4to. New York, 1898, etc.
- GARDEN.*—The Garden. 4to. London, 1871, etc.
- G. C.*—The Gardener's Chronicle and Agricultural Gazette. 33 vols., 4to. London, 1841-1873. The Gardener's Chronicle. Series 2, 26 vols., 4to. London, 1874-1886. Series 3. 1887, etc.
- GEN. PL.—Bentham, G., and Hooker, Sir J. D. Genera Plantarum. 3 vols., 8vo. London, 1862-1883.
- GFL.*—Gartenflora. 8vo. Zurich, 1852, etc.
- HAMB. GART.—Hamburger Garten- und Blumenzeitung. 46 vols., 8vo. Hamburg, 1845-1890.
- HARRIS. CAB.—Harrison, J. The Floricultural Cabinet and Florist's Magazine. 21 vols., 8vo. London, 1833-1853.
- HARV. THES. CAP.—Harvey, W. H. Thesaurus Capensis, or Illustrations of the South African Flora. 2 vols., 8vo. Dublin, 1859-1863.
- HOOK. BOT. MISC.—Hooker, Sir W. J. The Botanical Miscellany. 3 vols. 8vo., 112 plates. London, 1830-1833.

- HOOK. EX. FL.—Hooker, Sir W. J. The Exotic Flora. 3 vols., large 8vo, 232 coloured plates. Edinburgh, 1823-1827.
- HOOK. FIL. EXOT.—Hooker, Sir W. J. Filices Exoticæ. 1 vol., 4to, 100 coloured plates. London, 1859.
- HOOK. GARD. FERNS.—Hooker, Sir W. J. Garden Ferns. 1 vol., 8vo., 64 coloured plates. London, 1862.
- HOOK. IC. FIL.—Hooker, Sir W. J., and Greville, R. Icones Filicum. 2 vols., folio, 240 coloured plates. London, 1829-1831.
- HOOK. SP. FIL.—Hooker, Sir W. J. Species Filicum. 5 vols., 8vo. London, 1846-1864.
- HORT. VANH.—Hortus Vanhoutteanus. 1 vol., 8vo. Gand, 1845.
- IC. PL.*—Hooker, Sir W. J. Icones Plantarum. 8vo. London, 1836, etc. Now edited by Professor D. Oliver, F.R.S.
- ILL. HORT.*—L'Illustration Horticole. Series 1 to 4, 33 vols., 8vo. Gand, 1850-1886. Series 5, 4to. Gand, 1887, etc.
- JACQ. FR. JACQUIN, N. J. Fragmenta Botanica. 1 vol., folio, 138 coloured plates. Vienna, 1800-1809.
- JACQ. H. SCHOENB.—Jacquin, N. J. Plantarum rariorum horti Schoenbrunnensis descriptiones et icones. 4 vols., folio, 500 coloured plates. Vienna, 1797-1804.
- JACQ. IC.—Jacquin, N. J. Icones Plantarum Rariorum. 3 vols., folio, 648 coloured plates. Vienna, 1781-1793.
- JACQ. STAP.—Jacquin, N. J. Stapeliarum Culturarum Descriptiones, etc. 1 vol., folio. Vienna, 1806.
- JACQ. VIND.—Jacquin, N. J. Hortus Botanicus Vindobonensis. 3 vols., folio, 300 coloured plates. Vienna, 1770-1776.
- JENN. ORCH.—Jennings, Saml. Orchids, and how to Grow them in India and other Tropical Countries. 1 vol., 4to. London, 1875.
- J. L. S.—See LINN. JOURN.
- JOURN. HORT.*—The Journal of Horticulture and Cottage Gardener. 4to. London, 1849, etc.
- JOURN. HORT. SOC.*—The Journal of the Royal Horticultural Society of London. 8vo. London, 1846, etc.
- KERCH. PALM.—Kerchove de Deterghem, Oswald de. Les Palmiers, Histoire Iconographique. 1 vol., 8vo. Paris, 1878.
- KN. AND WEST.—Knowles and Westcott. The Floral Cabinet. 3 vols., 4to, 137 coloured plates. London, 1837-1840.
- LAW. PIN. BRIT.—Lawson, P. Pinetum Britannicum.
- LE JARD.*—Le Jardin. Journal d'horticulture générale bimensuel. 4to. Argenteuil, 1887, etc.
- LEM. JARD. FL.—Lemaire, C. Le Jardin Fleuriste. 4 vols., 8vo, 430 coloured plates. Gand, 1851-1854.
- L'HORT. FR.—L'Horticulture Française. 20 vols., 8vo. Paris, 1851-1871.
- LIND.*—Linden, L., et Rodrigas, E. Lindenia, Iconographie des Orchidées. Folio. Gand, 1885, etc.
- LINDL. SERT.—Lindley, J. Sertum Orchidaceum. 1 vol., folio, 50 plates. London, 1837-1842.
- LINN. JOURN.*—Journal of the Proceedings of the Linnean Society of London. 8 vols., 8vo. London, 1857-1865. The Journal of the Linnean Society (Botany).* 8vo. London, 1867, etc.
- LINN. TRANS.*—Transactions of the Linnean Society of London. 4to. London, 1791, etc.
- LOWE. FERNS. Lowe, E. J. Ferns, British and Exotic. 8 vols., 8vo, 475 coloured plates. London, 1856-1860.
- MARN. MAG.—Marnock, R. The Floricultural Magazine and Miscellany of Gardening. 5 vols., 8vo. London, 1836-1841.
- MART. PALM.—Martius, K. Fr. P. von. Genera et Species Palmarum. 3 vols., folio, 283 coloured plates. Leipzig, 1823-1848.
- MASS. STAP.—Masson, F. Stapeliæ Novæ. 1 vol., folio. London, 1796.
- MAUND, BOT.—Maund, B. The Botanist. 5 vols., 4to, 250 coloured plates. London, 1839.
- MAW, CR.—Maw, G. A Monograph of the Genus Crocus. 1 vol., 4to. London, 1886.
- ORCH.*—L'Orchidophile. 8vo. Argenteuil, 1881, etc.

- OTTO, GARTZ.—Otto und Dietrich. Allgemeine Deutsche Garten-Zeitung. 20 vols., 4to. Berlin, 1833-1854.
- PAR. LOND.—See SALIS. PARAD.
- PAX. FL. GARD.—Paxton, Sir J., and Lindley, J. The Flower Garden. 3 vols., 4to. London, 1851-1853.
- PAX. MAG.—Paxton, Sir J. Magazine of Botany. 16 vols., 8vo. London, 1834-1849.
- PIN. WOB.—Bedford, Duke of, and Forbes. Pinetum Woburnense. 1 vol., large 8vo, 67 coloured plates. London, 1839.
- RCHB.*—Sander, F. Reichenbachia. Folio. London, 1886, etc.
- RCHB. FL. GER.—Reichenbach, H. and H. G. Icones Floræ Germanicæ. 16 vols., 4to. Leipzig, 1834-1854.
- RCHB. IC. CRIT.—Reichenbach, H. Iconographia Botanica, seu Plantæ Criticæ. 10 vols., 4to, 1000 coloured plates. Leipzig, 1823-1832.
- RCHB. IC. EXOT.—Reichenbach, H. Iconographia Botanica Exotica sive Hortus Botanicus. 3 vols., 4to, 250 plates. Leipzig, 1827-1830.
- RCHB. XEN.*—Reichenbach, H. G. Xenia Orchidacea. 4to. Leipzig, 1853, etc. Now edited by Dr. Kränzlin.
- RED. LIL.—Redouté, P. Les Liliacées. 8 vols., folio, 486 coloured plates. Paris, 1802-1816.
- REF. BOT.—Saunders, W. W. Refugium Botanicum. 4 vols., 8vo. London, 1869-1872.
- REV. HORT.*—Revue Horticole. 8vo. Paris, 1834, etc.
- REV. HORT. BELG.*—Revue de l'Horticulture Belge et Etrangère. 8vo. Gand. 1875, etc.
- ROXB. PL. COROM.—Roxburgh, W. Plants of the Coast of Coromandel. 3 vols., folio, 300 coloured plates. London, 1795-1819.
- ROYLE, ILL.—Royle, J. F. Illustrations of the Botany of the Himalaya and Cashmere. 1 vol., folio, 100 coloured plates. London, 1839.
- SALIS. PARAD.—Salisbury, R. A. Paradisus Londinensis. 1 vol., 4to, 119 coloured plates. London, 1805-1808.
- SALM. MONOG.—Salm-Dyck, J. Fürst von. Monographie des Genres Aloe et Mesembrianthemum. 4to, 285 plates. Düsseldorf, 1836-1849.
- SCH. GEN. AR.—Schott, H. G. Aroideæ. 1 vol., folio. Vienna, 1853.
- SIBTH. FL. GR.—Sibthorp, J. Flora Græca. 10 vols., folio, 966 coloured plates. London, 1806-1840.
- SIEB. FL. JAP.—Siebold et Zuccarini. Flora Japonica. 2 vols., folio. Lugd. Bat., 1835-1844.
- SWT. CIST.—Sweet, R. Cistineæ. Large 8vo, 112 coloured plates. London, 1830.
- SWT. FL. GARD.—Sweet, R. The British Flower Garden. 8vo, Series I., 3 vols., 300 coloured plates. London, 1823-1829. Series II., 4 vols., 452 coloured plates. London, 1831-1838.
- SWT. GER.—Sweet, R. Geraniaceæ. 5 vols., large 8vo, 500 coloured plates. London, 1820-1830.
- SWT. HORT. BRIT.—Sweet, R. Hortus Britannicus.
- TRANS. HORT. SOC.—Transactions of the Horticultural Society. 7 vols., 4to. London, 1805-1829.
- V. M. C.—Veitch. A Manual of the Coniferæ. 1 vol., 8vo. London.
- WARN. ORCH. ALB.*—Warner, R., and Williams, B. S. The Orchid Album. 4to. London, 1882, etc.
- WARN. SEL. ORCH.—Warner, R. Select Orchidaceous Plants. Folio. London. Series I., 1862-1865. Series II., 1865-1875.
- WATS. DENDR.—Watson, P. W. Dendrologia Britannica. 2 vols., 8vo. London, 1825.
- WIEN. GART. ZEIT.*—Wiener Illustrirte Garten-Zeitung. 8vo. Vienna, 1879, etc.
- WIGHT, IC.—Wight, R. Icones Plantarum Indiæ Orientalis. 6 vols., 4to, 2105 plates. Madras, 1838-1853.
- WIGHT, ILL.—Wight, R. Illustrations of Indian Botany. 2 vols., 4to, 182 coloured plates. Madras, 1838.

