

FLORA AND SYLVA

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*A Monthly Review for Lovers of Garden,
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MAGNOLIA.*

THE genus *Magnolia* was named in honour of Pierre Magnol, Professor of Medicine and Botany at Montpellier in the latter part of the seventeenth and beginning of the eighteenth century, and it falls to the lot of very few botanists to have their name and fame commemorated by so fine a genus. There are at present about thirty species known, of which fifteen are in cultivation in British gardens. The headquarters of the *Magnolias* are China and Japan



THE LARGE-LEAVED MAGNOLIA (*M. MACROPHYLLA*).

(Engraved from a photograph taken at Coombe Wood.)

(including *Corea*), whence nine species have already been introduced, and several more remain to reward the future traveller and plant collector; one of these is a splendid bush or tree with evergreen leaves 2 feet to 2 feet 6 inches in length and about 9 inches broad. This extraordinary species, of which only a solitary specimen was seen by Dr. A. Henry, has not yet been described. Half-a-dozen species occur in the Himalayan region, of which only one, *M. Campbellii*, has found its way into European gardens. One species is found

* With coloured plate from drawing by H. G. Moon at Gravetye, April 1902.

in Malaya, one in Portorico, two in Mexico, and the remaining half dozen hail from the United States.

As pointed out by Professor C. S. Sargent in his "Forest Flora of Japan," arborescent members of the Magnolia family reach, in Japan, the most northern limit attained in any country by these plants. In eastern North America two Magnolias reach nearly as high altitudes as the genus does in Japan, but in the United States Magnolia is really southern, and has only succeeded in maintaining a precarious foothold at the north, while in Yezo it is a most important element and a conspicuous feature of the forest vegetation.

No other genus of hardy or half-hardy trees and shrubs can boast of so many excellences as the Magnolias. The free-flowering qualities and great beauty of some of the Japanese and Chinese species, such as *conspicua*, *obovata*, *stellata*, *parviflora*, etc., are only equalled by the ease with which they can be cultivated. As a single specimen in a conspicuous position on grass, at any rate in the south of England, *M. conspicua* and some of its hybrids and allies are absolutely unrivalled. No lover of gardening who has ever seen the trees of the Yulan at Syon, Gunnersbury Park, or Kew, could ever forget the effect produced by their numberless snowy flowers. *M. grandiflora*, too, is perhaps the finest of all wall plants in our climate, and some of the deciduous kinds of considerably harder constitution are in the first rank of ornamental trees for the adornment of parks and pleasure grounds. Apart from the large and showy flowers of some of these, they would still occupy a high rank for the beauty and distinct character of their foliage. The seeds of Magnolias contain a considerable quantity of oil, and therefore travel badly, retaining—under ordinary conditions—their vitality for but a comparatively limited period; packed tightly in clay or damp earth, however, they retain their germinative power several months.

It cannot be too often repeated that Magnolias are moisture lovers and detest drought; they should, therefore, not be planted where they are wind-swept. A good, rich, deep soil, too, is a desideratum; given the conditions just mentioned, much better results would be obtained than under those with which Magnolias have to be contented as a rule.

For convenience of reference the species mentioned below are divided into two groups, viz.: those which flower before the leaves appear and those in which the blossoms appear after the leaves. For a similar reason the species are, in each group, arranged alphabetically and not in botanical sequence.

FLOWERS APPEARING BEFORE THE LEAVES.

M. Campbellii.—It is very unfortunate that this superb species—one of the most splendid of the flowering trees of temperate climates—has not fulfilled the hopes centred on it when it was introduced to this country some years ago. Being found at elevations of from 8,000 to 10,000 feet along the outer Himalayas, it was expected that the climate of Britain would not prove too severe. Such, however,

has turned out to be the case. There is a fine tree in the gardens of the late Mr. W. Crawford, at Lakelands, co. Cork, which Mr. Gumbleton tells us (*The Garden*, Vol. XXIII., p. 492) was then 35 feet high. The harsh, dry, north-easterly winds of March, however, often prove too much for the numerous flower-buds. Those who have had an opportunity of consulting the picture of this species in Sir Joseph Hooker's "Illustrations of Himalayan Plants" might be excused if they suspect the artist of some exaggeration both in the size of the flowers and in the colour thereof. Mr. Gammie, who knows the tree in its native haunts, certifies that the figure just mentioned is a faithful representation, and he records the flowers as measuring 10 inches in diameter. In a wild state the tree attains a height of 150 feet, and the scented flowers vary in colour—from deep rose to crimson. In 1898, a specimen in the nursery of Messrs. R. Veitch and Son, of Exeter, flowered freely, and the colour of its blossoms was a deep rosy pink, shading off into white at the centre. There is also a fine tree at Fota in the gardens of Mr. Smith Barry, and, judging from a photograph of this taken in 1898, it must have presented an extraordinarily beautiful appearance.—*Hook. fil. and Thomson*, "*Flora Indica*," i., p. 77; *Hooker*, "*Illustrations of Himalayan Plants*," t. 4 and 5; "*Flora of British India*," vol. i., part 1, p. 41; "*Botanical Magazine*," tab. 6793.

The Yulan (*M. conspicua*).—An English garden affords no more beautiful a sight than a fine tree of this Magnolia in full bloom. Perhaps the grandest specimen in the neighbourhood of London is one at Syon, which a score years ago measured 25 feet in height, with a spread of branches of 34 feet. Good specimens also exist at Gunnersbury Park, and in the Royal Gardens, Kew. Unfortunately, however, the late frosts sometimes damage the snowy flowers in many places, even in the south of England. Against a wall—and the tree bears cutting well—frost is not so much to be feared. No one could, however, grumble at having to shelter such a beautiful tree during the flowering season. For conservatory work it is thoroughly fitted, and if grown in tubs or pots in the open air during the summer months and housed during winter a splendid crop of flowers in February or March would be the result. This species has been cultivated by the Chinese and Japanese from time immemorial, but it is not much more than a century since it was first introduced to British gardens, the exact date being 1779. The following interesting note respecting *M. conspicua* was published in *Garden and Forest*. From "Memoires concernant l'Histoire des Sciences des Chinois," written by the early French missionaries at Peking, it appears that the Yulan was cultivated under the dynasty of Tang in 627, and has since

been always a favourite in the gardens of the Imperial palaces and of the temples, and that young plants are used for the decoration of the Imperial apartments in winter. It is the symbol of candour and of beauty; and a powder prepared from the green fruit is used to alleviate bronchial affections.—*Salisbury*, "*Paradisus Londinensis*," t. 38 (1806); *Loudon*, *Arb. et Frut. Brit.*, i., p. 278. *M. Kobus*, *Sieb. and Zucc.*, *Fam. Nat.*, No. 350 (not of *De Candolle*). *M. Yulan*, *Desfontaine's "Histoire des Arbres et des Abrisseaux"*, ii., p. 6 (1809); *Bonpland*, "*Description des Plantes Rares Cultivées à Malmaison*," p. 53; tab. 20; "*Botanical Magazine*," 39, tab. 1621; *Loddiges' "Botanical Cabinet"*, 1187; *Koch*, "*Dendrologie*," *erst. Theil*, p. 375.

M. Kobus.—This is a charming deciduous tree with white flowers. It is frequently confounded with *M. obovata*, and also with small-flowered forms of *M. conspicua*. This species in the forests of Hokkaido attains a height of 70 or 80 feet with a trunk nearly 2 feet in diameter, and in the New England States is the hardiest, the most vigorous, and most rapid grower of all the Magnolias, and it gives the same promise in this country. It is apparently as yet uncommon in Britain, but it is certainly deserving of a place in the garden, although in a young state—both here and in the United States—it flowers sparingly. The branches, which when crushed have a distinct odour of camphor, are straight and slender, forming a pyramidal outline; it is only when mature that the tree becomes round-headed. In some localities in its native country it affects swampy ground in the neighbourhood of streams, conditions similar to those which obtain for *M. glauca* in the United States. The flowers are about the size of those of *M. stellata*, but not so pure a white.—*D. C. Syst. Veget.*, i., 456; *Shirasawa*, "*Iconographie des Essences Forestières du Japon*," p. 71, t. 39. *M. tomentosa*, *Thunb. in Trans. Linn. Soc.*, ii., 336 (*exclusis foliis, quæ ad M. hypoleucam*). *M. glauca*, var. *A.*, *Thunb.*, "*Flora Japonica*," 236. *M. Kobus*, *Kämpfer*, "*Icones Selectæ*," t. 42. *M. Thurberi*, *Hort.*

M. Lennei.—This is a strong-growing plant, with large blossoms, the outside of the petals being almost black at the base, and deep crimson towards the tips. Many years ago a specimen in the nursery of Mr. Scott, at Merriott, was described in *The Garden* as being about 15 feet in height and as much through, bearing upwards of a thousand flowers. *M. Lennei* originated as a seedling in Italy, and is supposed to be a natural hybrid between *M. obovata* and *M. conspicua*. *M. Soulangeana nigra*, with the origin and history of which I am unacquainted, is a similar large-flowered, deeply-coloured form I have seen in fine flower in the Coombe Wood Nurseries of Messrs. Veitch.—"*Flore des Serres*,"



MAGNOLIA TULIPIFERA

(Reproduced from a drawing made at Gravetye, 1902.)

xvi., tab. 1693; *Revue Horticole*, 1866, p. 370; "The Garden," Vol. IX., p. 548, coloured plate.

The Purple-flowered Magnolia (*M. obovata*).—A considerable number of seedling varieties of this wonderfully pretty shrub are in southern gardens, and few plants are more worthy of cultivation. In the northern counties they require, in most localities, the protection of a wall. All the forms I have seen differ from the more generally known *M. conspicua* in their smaller size, in the different form and texture of their leaves, and also in the position, &c., of the petals, the flowers of the last-named species opening more widely than those of *M. obovata*. The colours, too, are different, purple and its shades being the predominant tints in *M. obovata*, whilst white in *M. conspicua*, or white flushed with red or pink, generally obtains in *conspicua* hybrids. The shoots when cut open have a peculiar camphor-like odour.—*Thunb. in Trans. Linn. Soc.*, ii., 336 (excl. icon. *Kämpf.*, t. 43). *M. gracilis*, *Salisbury*, "Paradisus Londinensis," t. 87; *Koch*, "Dendrologie," *erst. Theil*, p. 379. *M. glauca*, var. *B.*, *Thunb.*, "Flora Japonica," 237. *Buergeria obovata*, *Sieb. and Zucc.*, *Fl. Jap. Fam. Nat.*, i., 187. *Talauma Sieboldi et Magnolia obovata*, *Miquel, Prolus.*, 145. *M. purpurea*, *Loudon, Arb. et Frut. Brit.*, i., 35. *M. purpurea*, *Koch*, "Dendrologie," *erst. Theil*, 377 (*in pari*).

Var. discolor is a form with larger flowers than the type.—*Vent. Jardin de Malmaison*, t. 24; *M. purpurea*, "Botanical Magazine," tab. 390.

M. rustica rubra.—The coloured plate of this plant published herewith renders any prolonged description unnecessary. Mr. Wezelenburg, of the Hazerswoude Nurseries, near Leyden, writes as follows respecting it: "We can say nothing for certain about the origin of this Magnolia. About ten years ago we found this variety in the nursery of a friend in Boskoop, when we bought it. This gentleman grew it without a name, and, in conference with him, we named it 'rustica flore rubra.' He told us that he found it amongst seedlings, but did not know the origin of these seedlings. He supposed it a seedling from *M. Lennei*." In any case, it is the handsomest of all the forms which have been derived from *M. conspicua* and *M. obovata*.

M. salicifolia.—As far as foliage is concerned this is a very distinct plant; the rather long-stalked, narrow flowers, tapering to both ends, are as yet unknown to European gardeners. A native of the mountains of Nippon. Professor Sargent found this species on Mount Hakkoda at elevations of from 2,000 to 3,000 feet above sea-level. He describes it as a slender tree 15 to 20 feet in height, with stems 3 to 4 inches in thickness. Like all the rest of Magnolias, it is a moisture-loving species. Professor Sargent succeeded in introducing the tree to the

Arnold Arboretum, and is now here and there in cultivation in this country.—*Maximowicz*, "Mélanges Biologiques," tome viii., p. 509; *Buergeria salicifolia*, *Sieb. and Zucc.*, *Fl. Jap. Fam. Nat.*, 348; *Shirasawa*, "Iconographie des Essences Forestières du Japon," p. 72, t. 40.

M. Soulangeana.—This originated near Paris, and is a hybrid between *M. conspicua* and *M. obovata*. It has the large flowers of the former and the purple-tinted petals of the latter species. There is a tree at Syon 15 feet in height, with a spread of 13 feet. Scarcely different from this are *M. Yulan grandis* (*Rinz in Regel's "Gartenflora,"* v., tab. 166), and also the plants which bear in gardens the names of *M. speciosa*, *M. cyathiformis*, *M. superba*, *M. Alexandrina*, *M. speciosa*, *M. spectabilis*, and *M. triumphans*. In *Garden and Forest*, 1889, 298, a remarkably fine specimen of this hybrid Magnolia is described, probably the finest example in the United States, the stem below the branches measuring nearly 8 feet in circumference: it is in a garden at Hampton, near Baltimore.—*Ann. Soc. Hort. Par.*, i., 99; "Botanical Register," 1164; *Sweet*, "Flower Garden," 260; *Regel*, "Gartenflora," v., 255, tab. 168.

M. stellata.—Few hardy plants introduced of late years to British gardens can vie with this charming shrub in interest or beauty. It was first exhibited in England about 1878 by Messrs. Veitch, who obtained a first class certificate for it. The plant flowers very freely in a young and small state, and makes an excellent subject for cool conservatory decoration; it is, however, perfectly hardy. The beautiful scented blossoms measure about four inches across, and the narrow petals are white with an external stripe of pale pink. Like most other horticultural introductions from Japan, this is cultivated by the natives, and it was observed more than twenty years ago in gardens at Nagasaki by Oldham. According to Franchet and Savatier, it is wild in the woods of Mount Fusi Yama and in Central Nippon, where it forms a small tree. The name *M. Halleana*, given to the species by Mr. S. B. Parsons, of Flushing, U.S., was intended to commemorate the services to the horticultural world of Dr. G. R. Hall, who sent from Japan to the Flushing Nursery a host of interesting and valuable plants. As, however, this beautiful Magnolia had been previously described under the head of *M. stellata*, this latter will have to be kept up.—*Maximowicz in Bulletin Acad. Petersb.*; "Mélanges Biologiques," decas xi., p. 509; "Botanical Magazine," tab. 6370; "Revue Horticole," 1878, 270; *Regel*, "Gartenflora," 1880, p. 407. *M. Halleana*, "Garden," Vol. XIII., p. 572 (coloured plate). *Talauma stellata*, *Miquel, Prolus. Flor. Japon.*, p. 145; *Ann. Mus. Lugd. Bot.*, p. 257. *Buergeria stellata*, *Sieb. and Zucc.*, *Fl. Jap. Fam. Nat.*, p. 78, tab. iia.

FLOWERS APPEARING AFTER THE LEAVES.

The Cucumber Tree (*M. acuminata*).—This forms a large tree 60 to 90 feet in height, with a trunk 2 to 4 feet in diameter. Its English name is owing to the slight resemblance borne by the young fruits to a small cucumber. The leaves, from 5 to 10 inches long, are oblong, pointed, green, and slightly hairy beneath. The slightly fragrant, bell-shaped flowers are a glaucous green colour tinged with yellow. The wood is "soft, close-grained, preferred for pump logs" (Sargent's "Catalogue of the Forest Trees of North America").

In a wild state it is found in rich woods from West New York to Ohio and southward. It is a tall, somewhat slender tree, reaching its largest size and abundance in the narrow valleys about the base of the high mountains of Carolina and Tennessee. From "Hortus Collinsonianus" we learn that the Cucumber Tree was introduced to this country by Collinson. His memoranda respecting it are as follows: "My two deciduous or mountain Magnolias were planted from seed in 1746; planted one in the corner of the bed in the best garden. May 20, 1762, the mountain Magnolia flowered in my garden, which I raised from seed about twenty years ago, being the largest and highest tree in England, and is yet in very few gardens." At the present time there are handsome trees of this species at Kew, the finest being 45 feet in height, spread of branches 46 feet, circumference of stem at one foot from the ground 5 feet. To Mr. Woodbridge I am indebted for the dimensions of the largest specimen now at Syon, viz., height, 34 feet; girth of trunk, 5 feet 6 inches; spread of branches, 33 feet. Mr. F. W. Burbidge has kindly furnished me with the measurements of the finest tree in the Trinity College Botanic Gardens at Dublin: height about 55 feet, circumference of trunk 30 inches. Mr. F. W. Moore writes me from the Royal Botanic Gardens, Glasnevin, respecting a fine tree near Ardee, in co. Louth; this is 30 feet high, and has a very fine head. Finally, Mr. E. Burrell sends me particulars of a grand tree at Claremont: height, 40 feet; circumference of stem at 18 inches from the ground, 5 feet 6 inches. The measurements of the different trees just mentioned were taken in 1883.—*Sp. Plant.*, 2 ed., 756; Michaux, "*Flora Boreali-Americana*," 1, 328; "*Nouveau Duhamel*," 2, 222; Michx. fil., "*Arbres Forestiers de l'Amérique Septentrionale*," 3, 82, tab. 3; Loddiges' "*Botanical Cabinet*," 418; "*Botanical Magazine*," tab. 2427; Loudon, *Arb. et Frut. Brit.*, 1, 273, tab. 7 and 8; Gray, "*Manual of the Botany of the Northern United States*," 49; Koch, "*Dendrologie*," *erst. Theil*, p. 371; Sargent, "*Silva of North America*," tt. 4, 5.

Var. aurea is a valuable ornamental tree with golden foliage, slightly streaked and mottled with green. It originated in an American nursery, but I am ignorant of its exact history.

The Yellow Cucumber Tree (*M. cordata*).—According to Loudon, this was introduced into England in 1800. It was discovered by the elder Michaux in forests along the banks of rivers in Georgia. It is quite hardy in the south of England at any rate, and good specimens are to be seen in the arboretum at Kew. The leaves are broadly ovate, more or less heart-shaped at the base, the upper surface being smooth, and the lower tomentose. The very faintly odorous yellow flowers, the interior petals being frequently marked with reddish lines, are from 3 to 4 inches across. The yellow Cucumber Tree forms a small or medium-sized tree. It differs from the last-named species in its smaller bright canary-yellow flowers, in its broader, darker green, more persistent leaves, sometimes heart-shaped at the base. The exact counterpart of our cultivated plant has, it appears, not been rediscovered in a wild state.—Michx., "*Flora Boreali-Americana*," 1, 328; Michx. fil., "*Arbres Forestiers de l'Amérique Septentrionale*," 3, 87, tab. 4; "*Botanical Register*," 4, tab. 325; Loddiges' "*Botanical Cabinet*," tab. 474; Reichenbach, "*Flora Exotica*," t. 250; Loudon, *Arb. et Frut. Brit.*, 1, 275, t. 9; Koch, "*Dendrologie*," *erst. Theil*, p. 371. *M. striata*, Hort. *M. acuminata*, var. *cordata*, Sargent, "*Silva of North America*," t. 6.

M. Delavayi.—This is a new species which at present only exists in cultivation in the Coombe Wood Nurseries of Messrs. Veitch. It is an evergreen tree with rather long-stalked leathery leaves, which are silvery beneath. The egg-shaped flowers are white and fragrant, the petals being thick, and in form oblong-spathulate. As a species it comes somewhat near the Himalayan *M. Griffithii* and *M. spenocarpa*, neither of which has yet found its way to European gardens. *M. Delavayi* is a native of Yunnan, where it was collected by Dr. Henry on rocky mountains, at elevations of from 5,500 to 7,000 feet.—Franchet in "*Plantæ Delavayanæ*," p. 33, tab. 9, 10.

The Ear-leaved Umbrella Tree (*M. Fraseri*).—This species attains a height of from 30 to 50 feet. The light green glabrous leaves, which are oblong-obovate or spathulate in form and auricled at the base, are from 8 to 12 inches in length by about half that breadth; as in the Umbrella tree, they are mostly crowded together at the tips of the flowering branches in an umbrella-like circle. The flowers are milky-white, and measure 3 or 4 inches in diameter; according to Loudon, they are

agreeably scented, whilst Gordon states that they exhale a disagreeable odour. This is fairly abundant in the forests in certain districts of the Southern Alleghanies, and I have myself noted it near Roan Mountain. It forms a slender tree 30 to 40 feet in height with a straight or inclined trunk 12 to 18 inches in diameter.—Walter, "Flora Caroliniana," p. 159 (tab.); Gray, "Manual of the Botany of the Northern United States," p. 49; Koch, "Dendrologie," *erst. Theil*, p. 372. *M. auriculata*, Lam. Dict., 3, 673; Michx., "Flora Boreali-Americana," 1, 328; "Nouveau Duhamel," 2, 222; Andrews, "Botanical Repository," 9, tab. 573; "Botanical Magazine," tab. 1206; Loudon, *Arb. et Frut. Brit.*, 1, 276, t. 10. *M. auricularis*, Salisbury, "Paradisus Londinensis," tab. 43; Sargent, "Silva of North America," tt. 11, 12.

The Laurel Magnolia or Sweet Bay (*M. glauca*).—The former of the two English names above quoted seems the best suited for English readers, as with us the latter, under which this charming species is known in the United States, is applied to a totally different plant, viz., *Laurus nobilis*. White Bay is another of its American names, but Laurel Magnolia, one of the names adopted by Dr. Asa Gray in his "Manual," seems distinctive and definite enough to answer all purposes. *M. glauca* is certainly a very handsome shrub, with oblong or somewhat oval leathery leaves, light bluish-green above and silvery below, and delightfully fragrant globular flowers, which open a rich cream colour and gradually acquire a pale apricot hue. In damp, sheltered places the plant is sub-evergreen, but in drier and more exposed spots deciduous. The bark of the young shoots is a rich apple-green, that of the older branches glaucous or whitish. In its native localities it sometimes attains a height of from 50 to 70 feet, with a trunk 2 or 3 feet, or under exceptionally favourable conditions 3½ feet, in diameter; in the north it is reduced to a low shrub. In August, in its native localities, the red fruit cones contrasting with the shining glossy leaves produce a fine effect—it is then even showier than when in flower. It is found in swamps throughout Essex County, Massachusetts, and from Queen's County, Long Island, to Louisiana and Southern Arkansas, generally near the coast. The roots yield a yellow dye. According to Emerson, the plant affords a good tonic and warm stimulant and diaphoretic, and has been used with great success in chronic rheumatism, in intermittent fevers, and particularly in fever and ague.—Linn., "Species Plantarum," 2 ed., 755; Lam. Dict., 674; Michaux, "Flora Boreali-Americana," 1, 237; "Nouveau Duhamel," 2, 233, tab. 66; Bon. pl. Pl. Malm., 103, tab. 42; Michx. fil., "Arbres Forestiers de l'Amérique Septentrionale," 3, 77, tab. 2; Loddiges' "Botanical Cabinet," 215; Loudon *Arb. et Frut. Brit.*, 1, 267, tt. 3 and 4; Gray, "Manual of the

Botany of the Northern United States," 49; Koch, "Dendrologie," *erst. Theil*, 369; Emerson, "Trees and Shrubs of Massachusetts" (ed. 1875), 603; Sargent, "Silva of North America," t. 3.

Var. pumila is a dwarf variety, not exceeding 3 or 4 feet in height; found in East Florida.—Nuttall in "American Journal of Science," v., 295.

The great Laurel Magnolia (*M. grandiflora*).—Unfortunately, this stately tree is not able to withstand severe winters, by which the patience of many cultivators of out-door plants is so sorely tried. Even in the south of England it is safer to treat the great Laurel Magnolia as a wall plant. There are few more noble and imposing subjects when allowed sufficient space, and the front of a goodly house clothed with the glossy deep green leaves and the large, handsome, scented white flowers of this species is not a sight to be easily forgotten. In the Bull Bay, as it is sometimes called, the temperate countries of the world have the most beautiful evergreen tree known in gardens. It has been suggested as a "national flower" for the United States, and its claims to such an honour urged by more than one writer. Mr. Burrell gave me, in 1883, the measurements of the finest specimen at Claremont, viz., 24 feet in height, with a stem 3 feet 2 inches in circumference at 1½ feet from the ground. *M. grandiflora* is a native of the Southern United States, and was introduced to this country about 1737. An extract is given in "Hortus Collinsonianus," from a letter written from Georgia, by John Bartram to Collinson: "The great Laurel-leaved Magnolia grows 100 feet high, and 3 or 4 feet in diameter." Collinson adds, "What a noble sight!" In *The Garden*, Vol. II., p. 205, there is an interesting article, as well as an illustration, of "*Magnolia grandiflora* at Home."—Linn., *Sp. Plant.*, 2 ed., 755; Bartram, "Travels," 85; Michaux, "Flora Boreali-Americana," 1, 327; "Nouveau Duhamel," 2, 219, tab. 65; Andrews, "Botanical Repository," 8, tab. 518; Michaux fil., "Arbres Forestiers de l'Amérique Septentrionale," 3, 71, tab. 1; Loudon, *Arb. et Frut. Brit.*, 1, 261, tab. 1, 2; Koch, "Dendrologie," *erst. Theil*, p. 367. *M. foetida*, Sargent, "Silva of North America," tt. 1, 2.

Var. angustifolia.—The foliage of this is very distinct, being lanceolate, tapering to both ends, with wavy edges. It was introduced to this country from the Continent nearly sixty years ago, but I have seen no large specimens.—*Var. salicifolia*, Hort.; *var. Hartwegi*, Hort.

Var. ferruginea.—This differs from the preceding in having rather broader leaves and larger flowers, and in forming a broader and more compact tree or bush; by some authorities, too, it is stated to be a good deal hardier, having withstood winters which have proved fatal to *var. lanceolata*.

Var. lanceolata.—The leaves are oblong-elliptical, generally rusty beneath. It forms a tall bush or small tree of fastigiate habit, and flowers early and freely; the best variety for general cultivation.—*Ait., Hort. Kew.*; “*Botanical Magazine*,” *tab.* 1952; *var. exoniensis*, *Loddiges’ “Botanical Cabinet,” tab.* 814; *var. stricta*, *Hort.*

Var. obovata differs from the type in the leaves being of an obovate-oblong form, their broad ends contrasting markedly with the more or less pointed outline of those of the typical form.

A host of seedling forms have received varietal names in nurseries, but as it is impossible to distinguish many of them from each other, they are just given here without comment. I have seen a number of them, but neither in habit nor in leaf characters do they call for special remark—*macrantha*, *crispa*, *Gallisonieri*, *majardieriensis*, *nannetensis*, *rotundifolia*, *præcox*, *latifolia*, *rubiginosa*, etc.

M. hypoleuca.—Like several other valuable ornamental trees, this was first introduced into the United States from Japan, and afterwards found its way to this country. It is as yet somewhat rare. In *The Garden*, Vol. XVI., p. 373, *hypoleuca* is spoken of in high terms of praise; its merit “lies chiefly in the great beauty of its milk-white flowers, which resemble those of *conspicua*, and possess a delicious banana-like odour, surpassing that of any other hardy Magnolia. Bright and attractive in foliage, the underside of the leaf is greenish white, hence the name.” The leaves are indeed striking enough; they measure from 12 to 18 inches in length by about half the width in the broadest part, which is above the middle. The timber of this tree is no doubt valuable in Japan, and in a report by His Majesty’s Acting Consul at Hakodati on the lacquer industry of Japan, published last year, it is asserted that “all sword sheaths have hitherto been made of this wood.” Charcoal made from it, too, is used in the polishing and preparation of the high-class lacquered articles for which the Japanese are so famous. Japanese specimens of sword and dagger sheaths, &c., made of the wood of this Magnolia are to be seen in the museum (No. 1) at Kew. Of the New World species, this comes nearest in general resemblance to *M. tripeolata*. In his “Forest Flora of Japan,” Professor Sargent tells us that *M. hypoleuca* is seen at its best in damp, rich forests, which cover the rolling hills of Yezo; it sometimes attains a height of 100 feet, with a trunk 2 feet in diameter. On the other Japanese islands it is confined to mountain forests, and apparently does not descend below 2,000 feet above sea level. In Central Japan it is seen rarely more than 20 or 30 feet in height, perhaps because the larger trees have been cut for timber. It requires a cold winter climate for its best development. It

is, too, one of the largest and most beautiful of deciduous Magnolias. In early autumn, when the cones of fruit, which exceed those of any of the American species in size (sometimes 8 inches in length), brilliant scarlet in colour, stand out on the branches, it is the most striking feature of the forests of Hokkaido, which in variety and interest are not surpassed by those of any other part of the world. The very fragrant flowers measure 6 or 7 inches when fully expanded, have creamy-white petals, and brilliant scarlet filaments.—*Sieb. and Zucc. Fam. Nat.*, n. 349; *Shirasawa*, “*Iconographie des Essences Forestières du Japon*,” p. 70, t. 39. *M. glauca*, *Thunb.*, “*Flora Japonica*,” 273, not of *Linneus*.

The Great-leaved Magnolia (*M. macrophylla*).—For size and beauty of foliage the Great-leaved Magnolia undoubtedly occupies the first place amongst all the trees and shrubs with undivided leaves which are hardy in British gardens. Its leaves attain a length of from 2½ to 3½ feet; in shape they are obovate-oblong, cordate at the narrowed base, and hairy and white beneath. The open bell-shaped fragrant flowers are white, with a purple blotch at the base of the inner petals, and measure 8 or 10 inches across. It is rare even in a wild state. Its native distribution is as follows: Iredell and Lincoln counties, North Carolina to Middle Florida, and west of the Alleghany Mountains, from South-eastern Kentucky, southward through Tennessee to Central Alabama. A tree 20 to 40 feet in height, with trunk rarely exceeding 1 foot in diameter. The following dimensions of a tree at Claremont were kindly furnished me in 1883 by Mr. E. Burrell: Height, 30 feet; circumference of stem at 18 inches from the ground, 2 feet 9 inches; and a spread of branches of 28 yards.

M. macrophylla was discovered in 1789 in North Carolina by the elder Michaux, and in 1800 it was introduced into European gardens. The flowers and leaves are the largest of those of any species in the genus, and are larger and more conspicuous than those of any tree in the North American forests. Protection from wind is essential to this tree, as the leaves otherwise get torn and injured. In a wild state it attains its maximum development in sheltered limestone valleys of North Carolina, where it is always found in sheltered forest glades or small valleys, surrounded and often overshadowed by Hickories, Sweet Gum (*Liquidambar*), etc.—*Michx.*, “*Flora Boreali-Americana*,” 1, 327; *Michx. fil.*, “*Arbres Forestiers de l’Amérique Septentrionale*,” iii., 99, *tab.* 7; *Bonpland*, “*Jardin de la Malmaison*,” 84, t. 33; *Nuttall*, “*Sylva*,” 1, 83; “*Botanical Magazine*,” *tab.* 2189; *Loudon*, *Arb. et Frut. Brit.*, 1, 271, t. 6; *Gray*, “*Manual of the Botany of the Northern United States*,” 49; *Koch*, “*Denarologie*,” *erst. Theil*, 374;

Sargent, "*Silva of North America*," tt. 7, 8. *M. Michauxi*, Hort.

M. parviflora.—This is one of the most handsome of hardy ornamental shrubs, and will doubtless become widely cultivated and duly appreciated by all lovers of gardening. It has, of late years, been largely imported into this country, and flowers and also ripens fruit freely. It differs from the other species known in gardens by its long flower stalks. In the Bamboo Garden at Kew a large bush is annually covered with the handsome blossoms. *M. parviflora* is said to be a native of the Alps of Nippon. The nearest relation to the species now under consideration is the United States *M. glauca*.—Sieb. and Zucc., *Fam. Nat.*, 351; Miquel, "*Prolusio*," 146; Maximowicz, "*Mélanges Biologiques*," tome viii., p. 509; "*Botanical Magazine*," t. 7411.

M. pumila.—This is a Chinese species, which was introduced to this country nearly a century ago. It has elliptic, wavy, rather leathery, glaucous leaves and very fragrant, nodding, egg-shaped white flowers. Formerly this was treated as a stove plant, but it only requires shelter from frost, and will grow well and flower freely in a cool conservatory.—Andrews, "*Botanical Repository*," 226; "*Venteau Jardin de la Malmaison*," p. 37, tab. 37; "*Botanical Magazine*," tab. 977. *Talauma pumila*, Lindley in *Penny Encyclop.*, with figure.

M. pyramidata.—This species has been confused by recent botanists with *M. Fraseri*, from which it differs abundantly in habit, size of flowers, &c. It is a tree of more upright pyramidal growth, with much smaller leaves than those of *M. Fraseri*, and thinner in texture, green on both surfaces, and with divaricate lobes. In *M. Fraseri*, on the other hand, the leaves are green above, glaucous beneath, with converging lobes. The flowers, too, in this last-named species are much larger, and the anthers, too, are different. The geographical distribution of the two is entirely different—true *M. Fraseri* is an inland mountain plant, whilst *M. pyramidata* affects the lowlands along the coast. I have seen the last-named species many years ago in the Trianon garden at Versailles, and dried flowering specimens exist grown in the famous Bollwyller nursery in Alsace more than half a century ago. Bartram, in his "*Travels through North and South Carolina, Georgia, East and West Florida*," gives the following account of *M. pyramidata*: "I discovered in the maritime parts of Georgia, particularly on the banks of the Alatamaha, another new species of Magnolia, whose leaves were nearly of the figure of this tree (*M. Fraseri*), but they were much less in size, not more than 6 or 7 inches in length, and the strobile very small, oblong, sharp-pointed, and of a deep crimson colour; but I never saw the flower. These trees grow straight and erect, 30

feet or more in height, and of a sharp conical form, much resembling the Cucumber Tree in figure."—Pursh, "*Flora Americae Septentrionalis*," vol. ii., p. 382; Bartram, "*Travels*," p. 340; "*Botanical Register*," t. 407; Loddiges' "*Botanical Cabinet*," t. 1092; Loudon, *Arb. et Frut. Brit.*, i., 227, f. 11.

M. Thompsoniana.—This is a remarkable form of vigorous habit, with leaves and flowers two or three times the size of the type. It originated as a seedling in the Mile End Nursery of Mr. Thompson. Loudon thinks that the *M. glauca*, var. *longifolia* (Aiton, "*Hortus Kewensis*," 1 ed., ii., 251), is a wild form identical with the plant of garden origin here mentioned.

Other varieties, the names of which are met with in books, but very rarely in gardens, are *arborea*, *sempervirens*, *latifolia*, *Gordoniana*, and *Burchelliana*. The last two were described by Sabine in the "*Transactions of the Horticultural Society*" as Gordon's Double Swamp Magnolia and Burchell's Double Swamp Magnolia respectively, these names being altered by Koch in his "*Dendrologie*" to *M. Gordoniana* and *M. Buchananiana*. The var. *pumila* of Lavallée's "*Arboretum Segrezianum*" does not belong here at all, but is a true species from a different country, viz., China. *M. Thompsoniana* is now regarded by Professor Sargent and other authorities as a hybrid between *M. glauca* and *M. tripetala*. See *Garden and Forest*, 1888, 269, fig. 43.—"*Botanical Magazine*," tab. 2164; Reichenbach, "*Flora Exotica*," 342.

The Umbrella Tree (*M. tripetala*).—The leaves of this species are obovate-lanceolate, pointed at both ends, soon becoming glabrous; they measure from 1 foot to 3 feet in length, and the slightly-scented white flowers are from 5 to 8 inches across. In a wild state the Umbrella Tree rarely exceeds 40 feet in height, with a straight or often inclining trunk rarely more than 18 inches in diameter, generally much smaller, and occurs in York and Lancaster counties, Pennsylvania, to Virginia and Kentucky along the Alleghanies. To Philip Miller is due the credit of introducing this fine tree to English gardens. A year or two later it was independently introduced by Collinson, the following memorandum written by him being quoted from "*Hortus Collinsonianus*":—"In the year 1753 I had sent me from South Carolina a species of Magnolia, called the Umbrella. I had it planted in Mr. J. Gordon's garden for him to increase it; it flourished finely and flowered; May 24, 1760, opened its two first blossoms, and has 24 more to flower; this is the first tree that has flowered in England."—Linn. *Sp. Plant.*, 2 ed., 756; Michaux, "*Flora Boreali-Americana*," 1, 327; Michx. fil., "*Arbres Forestiers de l'Amérique Septentrionale*," 3, 90, tab. 15; Loudon, *Arb. et Frut. Brit.*, 1, 269, tab. 5; Koch, "*Dendrologie*,"

erst. Theil, 370; *Sargent*, "*Silva of North America*," *tt.* 9, 10. *M. Umbrella*, *Lam. Dict.*, 3, 673; "*Nouveau Duhamel*," 2, 221; *Gray*, "*Manual of the Botany of the Northern United States*," 49.

M. Watsoni.—At first sight this somewhat resembles *M. parviflora*, but it differs from that species in the yellow margin to the leaves—more numerous nerves, which are ten to fifteen in number (as against six or eight in *parviflora*). The flowers, too, are shortly stalked, larger, 5 to 6 inches in diameter, and have a powerful odour of Allspice (*Calycanthus*). The petals are white and open out more fully than do those of the last-named

species; the filaments are blood-red in colour and the anthers themselves a dull reddish yellow. The exact home of *M. Watsoni* is uncertain: Professor Sargent thinks it is not Japanese, but may be Korean. Unfortunately, so far, the exact requirements of this beautiful Magnolia are not understood; at any rate it does not thrive in this country, as far as my experience extends, so well as *M. parviflora*.—*Hook. fil.*, "*Botanical Magazine*," *t.* 7157.

M. compressa (Maxim) and *M. fuscata* (Andrews) are now regarded as belonging to the genus *Michelia*, and are therefore not further mentioned in these notes.

GEORGE NICHOLSON.

A REVISION OF THE GENUS CALOCHORTUS.

UNDER the above title I wrote a monograph which was published in 1901 by the Californian Academy of Sciences. It was a work intended for botanists, and it was my endeavour to make it as complete as possible, and naturally it contained much matter not of interest to those who are lovers and growers of these lovely flowers rather than interested in them from the standpoint of the field botanist. My kind friend the editor has asked me to prepare a version of the work for FLORA for garden use, and it is with pleasure that I endeavour to comply with his request. The last few years have added somewhat to my knowledge of the plants, and if any of my readers should note discrepancies between the present and any former writings of mine upon the subject they will understand that they are intentional, and that the present paper is correct, to the best of my knowledge of the subject. While I shall in this paper give some information in regard to the soils and conditions under which I have observed some of the species to thrive, and, perhaps, some personal experience of their culture, I am not attempting to go far into the matter of culture.

Mr. George B. Mallet, in *The Garden*, has during the past year written an excellent article upon the genus, and I feel sure that so good a grower, living upon the spot, will have better learned what the plants require in the British climate. The treatment he recommends for England varies but little from that which my experience here tells me is the best.

It is now some twenty-three years since I first became interested in Calochorti, and in that period I have had the privilege of seeing many species in their native homes, and of flowering nearly all of them in my garden. The territory they inhabit is truly an immense one. On the north they extend into British Columbia, on the south into Northern Mexico, on the east they cross the Rocky Mountains, while on the west they go to the very brink of the Pacific Ocean. Some of the species are very widely scattered, as, for instance, *C. Nuttalli*, which extends the entire width of the great basin and across the