MORUS, in *Botany*, the Mulberry, one of thoſe ancient and univerſal names, whoſe etymology can only be gueſſed. The tree is called μόρεα, the fruit μόρον, by the Greeks; whence the Latin *Morus* for the former, and *Morum* for the latter, have evidently originated. Lexicographers have ſuppoſed theſe words to have originated, either from μαυρον, *dark*, alluding to the colour of the fruit, which every body knows became ſo in conſequence of the adventures of Pyramus and Thiſbe; or, by antiphraſis, from μαυρος, *fooliſh*, the Mulberry being eſteemed the *wiſeſt* of trees, as never putting forth its buds till all the cold weather is certainly paſt. Pity that its wiſdom is not communicable!—Linn. Gen. 487. Schreb. 634. Willd. Sp. Pl. v. 4. 368. Mart. Mill. Dict. v. 3. Ait. Hort. Kew. ed. 1. v. 3. 342. Juſſ. 402. Tourn. t. 362. Lamarck Illuſtr. t. 762. Gærtn. t. 126.—Claſs and order, *Monoecia Tetrandria*. Nat. Ord. *Scabridæ*, Linn. *Urticæ*, Juſſ.

Gen. Ch. Male, *Cal.* Perianth in four deep, ovate, concave ſegments. *Cor.* none. *Stam.* Filaments four, awl-ſhaped, ſpreading, longer than the calyx, one of them accompanying each of its ſegments; anthers ſimple.

Female, on the ſame or a diſtinct plant, *Cal.* Perianth of four roundiſh, obtuſe, permanent leaves, the two oppoſite ones lying over the others. *Cor.* none. *Piſt.* Germen ſuperior, heart-ſhaped; ſtyles two, awl-ſhaped, long, reflexed, rough; ſtigmas ſimple. *Peric.* none, except the enlarged, juicy, coloured leaves of the calyx, aſſuming the appearance of a berry. *Seed* ſolitary, ovate, compreſſed, acute.

Obſ. The ſecond ſpecies of Linnæus, *M. nigra*, is ſometimes perfectly dioecious; very frequently it is partially ſo, the ſtamens being in greater perfection in moſt of the flowers of one tree, the piſtils in thoſe of another.

Eſſ. Ch. Male, Calyx in four deep ſegments. Corolla none.

Female, Calyx of four leaves. Corolla none. Styles two. Seed ſolitary, inveſted with the pulpy calyx.

1. M. *alba*. White Mulberry-tree. Linn. Sp. Pl. 1398. Ger. em. 1507. Loureir. Cochinch. 555.—Leaves obliquely ovate, ſomewhat heart-ſhaped, nearly ſmooth.—Native of China. Cultivated in that country, as well as in the warmer parts of Europe, for the ſake of its leaves as the food of ſilk worms. (See SILK.) The *tree* is rather of humble growth, copiouſly and irregularly branched. *Leaves* alternate, on longiſh, ſlender, ſmooth *ſtalks*, obliquely ovate, in ſome degree heart-ſhaped, acute, two inches long, rather bluntly ſerrated, ſometimes quite ſmooth on both ſides, but more frequently roughiſh with minute points, without hairs or briſtles, furniſhed with three principal ribs, and many veins hairy at their origin, bright green, deciduous. *Stipulas* lanceolate, varying in breadth, tawny, membranous, deciduous. *Flowers* green, in ſhort, roundiſh, ſmooth, ſtalked ſpikes or heads, which are alternate, ſeveral near each other, about the baſe of the young branches. *Fruit* of a pearly white, ſweetiſh, inſipid, eſteemed unwholeſome.—Willdenow ſays it varies occaſionally to a reddiſh, red, or black colour.—The *leaves* on young ſhoots, from a tree that has been much cut, ſometimes become deeply ſinuated or lobed.

2. M. *tatarica*. Tartarian Mulberry. Linn. Sp. Pl. 1399. Willd. n. 2. Pall. Roſs. v. 1. p. 2. 9. t. 52.—Leaves elliptic-ovate, obtuſe; ſlightly heart-ſhaped and equal at the baſe; equally ſerrated, ſmooth.—Native of inundated meadows on the banks of the Wolga and the Don. *Pallas.* Gerber's ſpecimen in the Linnæan herbarium was gathered at Aſoph, where Pallas ſays it is a garden plant. Willdenow, with great propriety, places this next after the *M. alba*, to which it is moſt nearly related, differing in its more elliptical, obtuſe, and evenly ſerrated *leaves*, which are quite ſmooth. Gerber ſays the *fruit* is black. Pallas ſpeaks of it as reddiſh, or pale, of no good flavour, though it is eaten raw, as well as dried, or made into a ſweetmeat. A wine is alſo prepared from it, and a very well-flavoured ſpirit. This ſpecies is reported to be moſt eſteemed for ſilk worms in China.

3. M. *nigra*. Common Mulberry-tree. Linn. Sp. Pl. 1398.

1398. Woodv. Med. Bot. 352. t. 129. (Morus; Camer. Epit. 179. Ger. em. 1507.)—Leaves broad-heart-ſhaped, unequally ſerrated, ſomewhat lobed, rough.—Native of Perſia, and, as it is ſaid, of the ſea-coaſt of Italy. Cultivated throughout Europe for the ſake of its fruit. Silk worms alſo will eat the leaves, though thoſe of the firſt or ſecond ſpecies are preferred by perſons who rear theſe valuable inſects for profit. This is a larger *tree* than either of the former, and readily diſtinguiſhed by its broader, rougher, more coarſely and unequally ſerrated *leaves;* longer ſpikes of *flowers;* and larger, dark purple, highly agreeable and wholeſome *fruit*. The bark of the *root*, which has a ſingular lilac tinge when dried, is acrid, bitter, and cathartic, though containing ſome mucilage. It is recommended as a vermifuge, in doſes of half a drachm in powder.

4. M. *rubra*. Red American Mulberry-tree. Linn. Sp. Pl. 1399. Michaux Boreal-Amer. v. 2. 179. (Morifolia virginienſis arbor, loti arboris inſtar ramoſa, foliis ampliſſimis; Pluk. Phyt. t. 246. f. 4.)—Leaves ovate, taper-pointed; finely ſerrated; heart-ſhaped at the baſe; downy beneath; ſometimes deeply lobed. Spikes long and cylindrical. Native of North America, from Canada to Florida. Cultivated here, according to Parkinſon's *Paradiſus* 596, early in the 17th century. He ſays it grows quickly with us to a large *tree*, and that the *fruit* is long, red, and pleaſantly taſted. The taper-pointed *leaves*, downy beneath, diſtinguiſh this ſpecies, as well as its long, ſlender, ſomewhat interrupted *ſpikes*.—*M. canadenſis*, Lamarck Dict. v. 4. 380, ſeems but a variety of this.

5. M. *indica*. Indian Mulberry-tree. Linn. Sp. Pl. 1399. Rumph. Amboin. v. 7. 8. t. 5. (Tinda Parua; Rheede Hort. Mal. v. 1. 87. t. 48, not 49.)—Leaves ovate, taper-pointed, coarſely ſerrated, roughiſh, naked; ſlightly heart-ſhaped at the baſe; often lobed.—Native of the Eaſt Indies, and of the iſle of Bourbon. Willdenow ſays it is often met with in gardens, and called a variety of *M. alba*. From that ſpecies however it may always be diſtinguiſhed by its rougher and long-pointed *leaves;* and from the *rubra* (whoſe *leaves* are nearly as much pointed), by their want of all downineſs on both ſides, as well as by the ſhorter and thicker *ſpikes*. The *fruit* is reddiſh. Both the figures above cited are bad. That of Rumphius is rather the beſt. He ſays the *fruit* is delicately flavoured, black when ripe; and that the Chineſe feed their ſilk worms with the *leaves*. Loureiro mentions the ſame of the inhabitants of Cochinchina, who replant the tree every year, that the foliage may be tender.

6. M. *latifolia*. Broad-leaved Bourbon Mulberry-tree. Lamarck Dict. v. 4. 381. Willd. n. 6.—Leaves broad-heart-ſhaped, pointed, undivided, coarſely ſerrated; rough above, veiny beneath.—Native of the iſle of Bourbon. Poiret in Lamarck deſcribes the *leaves* as three inches broad, three and a half or four long; their under ſide remarkably reticulated, and marked with as many little pores, or depreſſions, as there are rough points on the upper ſurface.

7. M. *auſtralis*. Southern Mulberry-tree. Lamarck Dict. v. 4. 380. Willd. n. 7.—"Leaves oval, long-pointed, naked, roughiſh, ſerrated, on long footſtalks. Fruit ſhort, with long permanent ſtyles."—Cultivated in the iſle of Bourbon. It is not eaſy to conceive a clear idea of the characteriſtic marks of this ſpecies, by the information in the above work, but we ſuſpect that it may be a variety of *M. indica*, ſome ſpecimens of which in our poſſeſſion, from the iſland here mentioned, anſwer to the deſcription in ſeveral reſpects.

8. M. *mauritiana*. Laurel-leaved Mulberry-tree. Jacq. Coll. v. 3. 206. & 4. 224. t. 22. f. 1. Ic. Rar. t. 617. Lamarck Dict. v. 4. 381. (M. ampalis; ibid. 380.)—Leaves elliptic-oblong, entire, rough on both ſides.—Native of Madagaſcar and the Mauritius. A large and ſtrong *tree*. The *branches* are rough with ſmall irregular tubercles. *Leaves* numerous, ſcattered, three or four inches in length, and one or one and a half in breadth, elliptic-oblong, more or leſs obtuſe, perfectly entire, rough with minute points on both ſides, reticulated with innumerable veins. *Footſtalks* thick, not an inch long, rough with ſmall tubercles. *Spikes* ſhort, cylindrical, axillary, ſolitary, drooping, on ſhort, thick, rough ſtalks. *Fruit* green, ſweet with ſome acidity, one and a half or two inches long. The French call this tree *La Rappe*, or the raſp tree, of Madagaſcar. We have a ſpecimen from Lamarck, which proves his plant the ſame with that of Jacquin. It is a moſt diſtinct ſpecies, and ought to have been named *laurifolia* or *citrifolia*. The *leaves* ſeem calculated to ſerve as a fine file, or raſp, like ſome of the fig kind. See Ficus.

9. M. *tinctoria*. Dyer's Mulberry-tree, or Fuſtick-wood. Linn. Syſt. Nat. ed. 10. v. 2. 1266. Mant. 495. Mill. Dict. ed. 8. n. 5. (M. lactescens, foliis oblongis acutis, paginis exterioribus productioribus, ligno citrino; Browne Jam. 339. M. fructu viridi, ligno ſulphureo tinctorio; Sloane Jam. v. 2. 3. t. 158. f. 1. Tatai-iba; Pis. Braſil. 163. Marcgr. Braſil. 119.)—Leaves oblong, pointed, finely ſerrated, rough; heart-ſhaped and unequal at the baſe. Spines none?—Native of Jamaica and other Weſt Indian iſlands, but particularly abundant about Campeachy on the main land, from whence the wood is exported, in great quantities, as an article of trade, and is well known, by the name of Fuſtick, as a yellow dye. Sloane deſcribes the *tree* as having a large and ſtraight *trunk*, ſixty feet or more in height, with long and large *roots*, whoſe bark is very yellow. *Bark* of the trunk light brown, with yellow clefts. *Wood* very firm and ſolid, of a very fine yellow. *Branches* ſpreading. *Leaves* alternate, on ſhortiſh ſtalks, rough, dark green, pointed, larger towards the footſtalk; Browne deſcribes them as unequal at the baſe, and Piſo, like Marcgrave, ſays they are finely ſerrated. This laſt character does not appear in their figures, nor in Sloane's. The latter deſcribes the *ſpikes* as whitiſh and ſhort, abundant at the ends of the branches, and the *fruit* as large as a nutmeg, round, formed like other mulberries, but greeniſh both within and without, with brown *ſeeds*. When ripe it is pleaſant, though luſciouſly ſweet. Miller has borrowed much from Sloane's account. He raiſed ſeveral plants from ſeed in the ſtove at Chelſea, but they appear not to have ſurvived long, being very tender, though of quick growth. It is to be regretted that there is no good figure, nor ſcientific deſcription, of this valuable tree. We have not even ſeen a ſpecimen.

10. M. *Xanthoxylon*. Spinous Mulberry-tree, or Baſtard Fuſtick. Linn. Syſt. Nat. ed. 10. v. 2. 1266. Mant. 495. Jacq. Amer. 247. Mill. Dict. ed. 8. n. 8. (M. tinctoria? Linn. Sp. Pl. 1399. Xanthoxylum aculeatum, carpini foliis, americanum, cortice cinereo; Pluk. Phyt. t. 239. f. 3.)—Leaves ovate-oblong, pointed, ſerrated, nearly ſmooth. Spines axillary.—Native of the Weſt Indies. Miller had it from Jamaica and the Bahama iſlands. Jacquin obſerved it in the vaſt woods near Carthagena. The former induced Linnæus to diſtinguiſh this from his *M. tinctoria*, though the ſpecimen in his herbarium is what he originally deſcribed for that ſpecies, and ſubſequently marked *Xanthoxylon*. The *leaves* of this are ſmooth beneath, ſlightly rough to the touch on the upper ſide; their form ovate-oblong, pointed, unequal at the baſe; the margin rather ſtrongly ſerrated. *Spines* axillary,

axillary, ſolitary, ſcarcely the length of the *footſtalks*, which is about half an inch. Miller ſays there are two ſpines to each leaf, which on the older branches extend to the length of two inches. He obſerves that this *tree* does not grow to ſo great a ſize as the laſt. The *wood* is ſold for the ſame uſe, but Linnæus mentions that its quality is inferior to that of the real *M. tinctoria*. Plumier's *Icones*, t. 204, quoted for this by Jacquin, is a rude reſemblance of it, but the ſpines are repreſented under the *footſtalks*, not axillary.—Theſe two plants are well worthy the notice of ſome Weſt Indian botaniſt. Swartz has nothing on the ſubject.

MORUS, in *Gardening*, comprehends plants of the deciduous tree kind, of which the ſpecies cultivated are; the common mulberry-tree (M. nigra); the white mulberry-tree (M. alba); the paper mulberry-tree (M. papyrifera); the red mulberry-tree (M. rubra); the Indian mulberry (M. indica); and the dyer's mulberry or fuſtick-wood (M. tinctoria).

The firſt is the ſort uſually cultivated as a fruit-tree in the garden.

And there is a variety with palmate or elegantly cut leaves and a ſmaller fruit.

In ſpeaking of the ſecond kind, Miller obſerves that there are two or three varieties of it, which differ in the ſhape of their leaves, and in the ſize and colour of the fruit; but as it is of no other uſe but for the leaves, the ſtrongeſt ſhooting and the largeſt-leaved ſhould be preferred.

This ſort is commonly cultivated for its leaves to feed ſilk-worms in France, Italy, &c.; and in Spain, according to Mr. Townſend, they prefer the white mulberry in Valencia, and the black in Granada. But the Perſians generally make uſe of the latter, and Mr. Miller was aſſured by a gentleman who had made trial of both ſorts of leaves, that the worms fed with the latter produced much the beſt ſilk; but that the leaves of the black ſhould never be given to the worms after they have eaten for ſome time of the white, leſt they ſhould burſt. And ſir George Staunton ſtates, that the tender leaves growing on the young ſhoots of the black ſort are ſuppoſed in China to be the moſt ſucculent or juicy.

Method of Culture.—All the ſorts are capable of being increaſed by ſeeds, layers, cuttings, grafting, and inoculating or budding. But the ſeed method is chiefly practiſed for thoſe which are not intended as fruit-trees, as they are very liable to vary in that way. It ſhould be ſown in the early ſpring, as about March, on a bed of fine earth, in a warm aſpect, or upon a moderate hot-bed protected with glaſſes, in drills to the depth of a quarter of an inch. Water ſhould be given ſlightly in dry weather, and in the heat of the day ſhade; covering it in cold nights. When the plants appear, they ſhould be well guarded from froſt in the early ſpring, and be kept clean during the ſummer, and properly ſhaded and watered, protecting them the firſt autumn and winter, removing them in the following March into nurſery rows two feet apart, and one diſtant, to continue a few years, when they may be ſet out where they are to grow. They ſhould not be removed either from the ſeed-bed or nurſery-rows, till perfectly ſtrong.

In caſes where they are intended for feeding ſilk-worms, they ſhould be kept in a low ſhrubby ſtate of growth.

They appear, from ſir George Staunton's account, to ſucceed beſt in China, on beds about a foot high in moiſt loamy ſoils.

Where they are raiſed for fruit, great care ſhould be taken that the layers or cuttings be not only taken from old fruit-bearing trees, but that the branches made uſe of be alſo fruit-bearing.

The layers may be made from ſtools formed for the purpoſe, or by raiſing up large boxes, baſkets, or pots of earth, ſo as to lay the branches in them in the autumn, by the ſlit method, heading them down to two eyes each. When they have taken root in the autumn following, they may be removed into the nurſery and managed as the ſeedlings.

The cuttings ſhould be made from the former year's ſhoots of ſuch trees and branches as bear well, and have fine fruit, not being ſhortened, but planted their whole length, leaving two or three buds above the ground. They ſhould be planted in March on light rich earth, preſſing the mould well about them, in order that it may be kept from getting too dry and parched.

As ſoon as they have become well rooted in the following ſpring they may be removed into the nurſery, being regularly trained to ſtems by means of ſtakes fixed to each of them, to which the principal ſhoots ſhould be trained, removing moſt of the reſt, except ſuch as are neceſſary to detain the ſap for the ſupport of the ſtem.

And they may be trained to ſtandards, half ſtandards, and dwarf ſtandards. See PRUNING and TRAINING.

After ſtanding three or four years in the nurſery, they will be ready to plant out finally.

But little ſun ſhould be admitted at the firſt planting of the cuttings, but afterwards as much as poſſible, provided the earth about them be prevented from becoming dry, by moſs or other means. The cuttings alſo ſucceed well when planted in a hot-bed; and in all caſes when covered by hand-glaſſes. It is, likewiſe, the practice with ſome to plant them in October.

Grafting and budding, or inoculating, are certain methods of continuing the proper kinds, and ſhould be practiſed in the uſual manner upon the ſeedling ſtocks of any of the ſpecies. See GRAFTING and BUDDING.

It is ſuggeſted by Mr. Forſyth, that "as the fruit is produced on the young wood, only ſuch branches as croſs others, and ſuch as are decayed, or broken by accident, ſhould be cut out, applying at the ſame time the compoſition. When, however, the heads become too full of wood, it will be neceſſary to thin them, as the fruit is larger and better flavoured where the heads are kept thin of wood." And the planting of theſe trees, when for fruit, in graſs orchards and pleaſure-grounds is adviſed, as "the fineſt of the fruit, when ripe, frequently drops, which, if it fall on dug or ploughed ground, will be ſoiled and rendered unfit for uſe, as the earth will adhere ſo to the fruit as to render the cleaning of it impracticable; but if planted on lawns, or in graſs orchards, the fruit can be picked up without receiving any injury. Another reaſon for planting theſe on lawns, or in orchards, is, that when full grown, they are too large for a kitchen-garden. The ſoil in which they thrive beſt is a rich, light, and deep earth."

"He has tried the efficacy of his compoſition on ſeveral of theſe trees in a very decayed hollow ſtate of the trunks, cutting out all the dead wood and cankered parts of ſome, and heading down others that were ſtunted and ſickly. After theſe operations they put forth vigorous branches, and bore excellent crops of fruit, more than double the ſize of that which they produced in their former ſtate."

And "thoſe who have any old decayed mulberry-trees are adviſed to treat them in the ſame manner; but thoſe which are very much decayed ſhould be headed down; this will throw them into a healthy bearing ſtate, and in two or three years they will produce plenty of fine fruit."

And as old trees of this ſort bear better and have finer fruit than the young ones, it is of importance to reſtore them.

Both

Both the fifth and fixth forts are tender, requiring the protection of the bark ſtove.

The firſt is raiſed for the fruit, but the others chiefly for the purpoſe of variety and ornament. The third is uſed for having the bark made into paper in ſome countries.