
The True Mahoganies

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This specimen (Herb. Berk. no. 3191!), from South Carolina, is *Phomopsis depressa*, Trav., not *Phoma syringica*, Thüm. It has biguttulate fusoid spores, $7-9 \times 2-2.5 \mu$.

490. *Phoma Limonis*, Thüm.

This is represented in Herb. Kew by a specimen from de Thümen (Gorizia, Mycoth. univ. no. 1193!), on which there are at least four apparently different minute fungi (one of them *Metasphaeria papulosa*, Sacc.); but none of them agrees with the description of the *Phoma*.

533. *Phoma macropus*, Berk. & Curt.

On an unknown host (New England, Sprague, Herb. Berk. no. 5695!). The external appearance resembles Berkeley's description, but no spores or sporophores such as he assigns to it, nor any others, could be found. This species should be deleted.

551. *Phoma tamaricella*, Sacc.

There cannot be the slightest doubt, after examination of the specimens, that this is merely the same as *P. tamaricina*, Thüm.

558. *Phoma stictina*, Sacc.

Coccularia stictica, Berk. in Grevill. 1874, ii. 97.

Represented by two exsiccata (Herb. Berk. nos. 1532! and 2235!). On these nothing is apparent but nodular subsclerotial mycelial growths.

559. *Phoma sphaerospora*, Sacc.

On this specimen (Roum. Fung. Gall. no. 3969!), on samarae (not branches) of *Ailanthus*, nothing is visible but knots of mycelium and various other stages of a *Pleospora* (not *P. herbarum*).

561. *Phoma ailanthina*, Thüm.

On examining Thüm. Mycoth. unic. no. 989! there could be found only a species of *Coniothyrium*, with a small quantity of another (undeterminable) fungus. Those species of *Coniothyrium* which have nearly colourless spores when young have often been mistaken for a *Phoma*, as here.

IX.—THE TRUE MAHOGANIES.

R. A. ROLFE.

Of late years extensive planting of Mahogany trees has taken place in Trinidad and some other colonies, and numerous specimens and fruits have been received at Kew with the enquiry as to whether they represent the true plant. Mahogany has

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long been known as the timber of a tree called botanically *Swietenia Mahagoni* Jacq., usually said to be a native of the West Indies and the adjacent coasts of Central America, but the term has also been extended to other red-brown timbers possessing somewhat similar properties, some of them belonging to other genera of *Meliaceae* and some to quite different families. The term, however, was originally applied to the West Indian tree, the timber of which has been known for upwards of 300 years, and under the name of Spanish Mahogany, early became famous for the construction of articles of furniture. At a somewhat later date British Honduras became famous as a source of Mahogany, which until 1886 was generally regarded as the timber of *Swietenia Mahagoni*. In that year, however, Sir George King described and figured a new species under the name of *Swietenia macrophylla*, this having been grown in the Royal Botanic Gardens, Calcutta, from seeds collected in Honduras. Since then it has been generally recognised that Honduras Mahogany is specifically different from the West Indian tree. There is also a third species, *S. humilis*, Zucc., a native of Western Mexico, which was thought to be in cultivation at Calcutta. Specimens of the Calcutta tree, however, including fruits, have recently been received at Kew, and prove to be a form of *S. Mahagoni*, Jacq. Further species formerly referred to *Swietenia* have now been transferred to other genera. The present paper, however, is limited to the species of *Swietenia* proper, to which what may be termed true Mahoganies belong.

1. **Swietenia Mahagoni**, Jacq. (Enum. Pl. Carib. p. 20), dates from 1760, being based on the *Arbor foliis pinnatis nullo impari Alam claudente*, &c., Catesby (Nat. Hist. Carolina, Florida and the Bahama Islands, ii. p. 81, t. 81), published six years earlier. It is called the Mahogany tree, and is said to grow in the Bahamas and other countries. Catesby remarked: "The Excellency of this Wood for all Domestick Uses is now sufficiently known in England: And at the Bahama Islands, and other Countries, where it grows naturally, it is in no less Esteem for Shipbuilding, having Properties . . . viz., Durableness, resisting Gunshots, and burying the Shot without Splintering." The coloured figure, which is good, shows a branch with flower and fruit, and also a Mistletoe which is said to grow on Mahogany and other trees in the Bahamas.

It is said that the earliest specimens of Mahogany were brought home by Sir Walter Raleigh on his return from Trinidad in 1595 (Dict. Nat. Biogr. xlvii. p. 194). The name, however, does not seem to have been used previous to 1671, when John Ogilby (America, p. 338), remarks "Here [in Jamaica] are . . . the most curious and rich sort of Woods, as Cedar, Mohogeney," (&c.).

P. Browne, in 1789 (Hist. Jam. p. 158), calling it *Cedrela* 2, states that "Mahogany grew formerly very common in Jamaica, and while it could be had in the low lands, and brought to market at an easy rate, furnished a very considerable branch of the exports of that Island." This is followed by an excellent

account of the tree and its timber. He then goes on to speak of "another *Cedrela*" discovered by Mr. Houston near the Gulf of Honduras, which is apparently identical with *Swietenia macrophylla*.

In 1824 Kunth mentions *Swietenia Mahagoni* as growing in Mexico (Syn. Pl. *Æquinoct.* iii. p. 219). The references cited are correct, but the diagnosis and habitat evidently belong to *S. humilis*, Zucc., for he describes the leaflets of the plant collected by Humboldt and Bonpland as "acuminato-subulatis," and remarks "Crescit prope Acapulco Mexicanorum, portum Oceani Pacifici."

In the same year De Candolle alluded to figures by Gaertner and Moçino & Sesse as showing the fruit dehiscing at the apex, and asked whether two species might not have been confused or whether the dehiscence was variable (*Prodr.* i. p. 625). The figure of Moçino & Sesse we have not seen, but that of Gaertner represents the West Indian *Swietenia Mahagoni*, and is dehiscing at both ends, like specimens now preserved at Kew.

In 1830 Sir William Hooker published an exhaustive account of the Mahogany tree, accompanied by two plates prepared from drawings made in St. Vincent by the Rev. L. Guilding (*Bot. Misc.* i. pp. 21-32, tt. 16, 17), and here, after an account of the extensive use of Jamaica Mahogany, he remarks: "Now, I believe, a very large portion of the Mahogany imported into Great Britain is derived from the Honduras, where it is unquestionably produced in most abundance." On a later page allusion is made to Browne's remarks, and it is added, "If this be what we call the Honduras Mahogany, and different from that of Jamaica, it is much to be lamented that its botanical characters are not yet known to us." This is the plant now known as *S. macrophylla*, King.

In 1879 Hemsley enumerated *Swietenia Mahagoni* as Central American (*Biol. Centr.-Amer.* i. p. 183), but the Honduras specimens cited belong to *S. macrophylla*, King, and those from Acapulco and Nicaragua to *S. humilis*, Zucc.

Complete materials of a *Swietenia*, which has long been cultivated at Calcutta under the name of *S. humilis*, have been sent to Kew by Lt.-Col. A. T. Gage, and seem to represent a dwarf form of *S. Mahagoni*, the leaflets and fruits being very similar in general character. It is not the *S. humilis*, Zucc.

The following are references to the literature and synonymy of *S. Mahagoni*, including such figures as are accessible to us:—

Swietenia Mahagoni, Jacq., Enum. Pl. Carib. p. 30; Linn. Sp. Pl. ed. 2, p. 548; Cav. Diss. p. 365, t. 209; Gaertn. Carp. ii. p. 89, t. 96; Hayne Arzn. Gewächse, i. t. 19; DC. Prodr. i. p. 625; Woodv. Med. ed. 2, iii. p. 620, t. 220; Desc. Antil. ii. p. 125, t. 99; Dict. Sc. Nat. xxviii. p. 81, t. 170; Tussac. Antil. iv. p. 65, t. 23; Hook. Bot. Misc. i. pp. 21-32, tt. 16, 17; Spach, Hist. Nat. Veg. iii. p. 164, Atlas, t. 21; Schnitzl. Ic. Fam. Nat. iii. t. 226, fig. 1; Nutt. Sylva, ii. p. 45, t. 75; DC. Monogr. Phan. i. p. 723, t. 8, fig. 11; Engl. & Prantl. Pflanzenfam. iii. p. 274, fig. 153.

The species is widely diffused, occurring in the Keys of S.

Florida, the Bahamas, Cuba, the Cayman Islands, Jamaica (said to be common on the plains and lower hills up to 3000 ft.), Hispaniola (Hayti and San Domingo), Porto Rico, St. Thomas, St. Croix, Martinique, St. Vincent, and Trinidad, though according to Crueger it is not indigenous in the latter island. De Candolle adds "Peru, near Pazuzo, Ruiz in h. Berol.", but this requires confirmation. The other localities, Mexico and Honduras, mentioned in various works, belong to the two following species.

2. *Swietenia humilis*, Zucc., was described and figured somewhere between 1831 and 1836 (Abh. Akad. Muench. ii. p. 355, tt. 7A, 7B), being based on materials collected by Karwinski in dry regions at 1000 ft. elevation near Tehuantepec, on the coast of the Pacific Ocean. It is described as a medium-sized tree, some 20 to 30 ft. high, with a trunk scarcely two feet in diameter, and the wood hard as in Mahogany. It was said to flower in February and to mature its fruits in the same month a year later. This species is characterised by its moderate-sized, very acuminate leaflets and by the very distinctly umbonate fruits. There are specimens at Kew from Taretan, in the Province of Oaxaca, collected by Prof. A. Duges, in 1883, bearing the native name "Cobano"; from Tuxtla, in the province of Chiapas, collected by Ed. Seler, and from Realejo (or Corinto), N.W. Nicaragua, collected by Dr. Sinclair. The latter is labelled "Mahogany Tree," and is cited by Hemsley under *S. Mahagoni*, Jacq. It would be interesting to ascertain whether this is the source of what is known as Nicaragua Mahogany. All these localities are on the Pacific Coast, as is also Acapulco, where Humboldt and Bonpland collected a Mahogany that is suspected to belong to this species (Kunth, Syn. Pl. Æquinoct. iii. p. 219). This and the Nicaraguan plant are cited by Hemsley under *S. Mahagoni* (Biol. Centr. Amer. i. p. 183). Another figure is Schnitzl. Ic. Fam. Nat. iii. t. 226, fig. 2, 4, 5, 7, 8, 18, 21, 22.

De Candolle cites as a synonym of this species *Swietenia multijuga*, Schiede (Linnaea, iv. p. 578), but this is a species of *Cedrela*. It was afterwards called *Cedrela odorata*, L.? (Schlecht. & Cham. in Linnaea, vi. p. 422), and later (as it is different from *C. odorata*, L.) *C. mexicana*, Roem. (Syn. Monogr. Hesperid. p. 47). There is a fruiting specimen of *S. multijuga* in the Natural History Museum at South Kensington, the leaves having eight pairs of alternate, very acuminate leaflets, and the fruits and seeds are wholly typical of the genus *Cedrela*. Of this Schiede remarked: "It is abundant at Papantla, Estero, and probably in the whole region, and is known by the name of Cedro. The wood of this tree is a browish colour, is easy to work and supplies the place of the Pines in the tract of coast. It must not be confounded with the Cedro of the Tierra fria, which is *Taxodium distichum*." The locality, it will be noted, is on the Atlantic coast of Mexico.

He also mentions a similar hard wood, called Caoba, perhaps produced by another species of the genus *Swietenia*, but he did not know the tree which produced it, though it was said

to grow not far from Papantla. This record is particularly interesting, because there is a specimen at Kew from the Herbarium of J. N. Rovirosa (n. 181), labelled "Caoba incolarum Habitat. Comun en las cercainas del pueblo de Tepitan (Tabasco), Mexico, Feb. 14, 1888," which enables Schiede's "Caoba" to be definitely identified. Though labelled *Swietenia Mahagoni* it is a specimen of *S. macrophylla*, King.

3. *S. macrophylla*, King.—In 1886 Sir George King figured and described a new species of *Swietenia* under the name of *S. macrophylla* (Hook. Ic. Plant. t. 1550). The tree had been grown in the Botanic Garden, Calcutta, from seeds stated to have been collected in Honduras in 1872. *S. Mahagoni* was also grown at Calcutta, and it was pointed out that the Honduras plant had leaves twice as large as the other, with still larger leaflets, in 5 or 6 pairs, not in 4, and that both capsules and seeds were larger. It also flowered a month earlier than *S. Mahagoni* and seeded freely, whereas the other rarely seeded there at all. The differences were observed as soon as the seedlings were a few inches high, they grew much more rapidly and were planted out as *Swietenia* species. They also grew three times as fast as *S. Mahagoni*, and in their twelfth year had attained a height of 20 ft. and had begun to flower freely, and a year later produced capsules. *S. Mahagoni*, at Calcutta, did not seed until 30 or 40 years old, and at all times very sparingly. This is the species which is at present being extensively planted in Trinidad and elsewhere. It now remains to collect the threads of its earlier history.

In P. Browne's History of Jamaica, published in 1789, we find (p. 159) a *Cedrela* n. 3, *Caroli foliolo ampliori, fructu pentagono*, Houst. apud Mill., of which it is remarked: "This plant does not grow in Jamaica, and is only inserted here to show that there is another species of the kind known: it was discovered by Mr. Houston near the Gulf of Honduras, where it grows very large." Whether this really represents *Swietenia macrophylla*, King, is not quite clear, for no trace can be found of a *Swietenia* in Houston's MSS., and plants at the British Museum, together with the absence of any mark to the Cedrelas in the British Museum copy of Miller's Gardeners' Dictionary, would indicate that no specimens were found in Miller's Herbarium in the same establishment, for it is on record (Journ. Bot. 1897. p. 225) "someone (probably Dryander) has marked off in the Gardeners' Dictionary the species received from Miller." It is not quite certain that the species alluded to by Browne is a *Swietenia*, for Miller's 3, *Cedrus (Alaternifolius) foliis alternis simplicibus cordato-ovatis acutis*, which is said to have been discovered by the late Dr. Houston at Campeachy, must have been different. It is reiterated that the leaves are single, while in the two preceding ones they are described as pinnate. The trees are said to be "eighty feet or upward, leafless on Houston's first visit, but on his second visit clothed with verdure, but with no appearance of flowers, so he was at a loss to know what genus it belonged to." Miller, however, remarked: "As the

fruit of this tree agrees exactly with those of the two former species [the Barbadoes Cedar-tree and the Mahogany], I have ventured to join it to them." And it is added, "We have no account of the wood of this tree, whether it is ever used in buildings, or for other purposes, as there have been few persons of any curiosity in that country, the cutters of logwood being the chief people who inhabit there, from whom there can be little known of the produce." The above reference is to the sixth, or 1771, edition of Miller, and there is no addition to the history in later editions.

There is evidence that Honduras Mahogany was known before Houston visited Campeachy. Sir Daniel Morris in 1883 remarked, "British Honduras began, some two hundred years ago, as a logwood and mahogany-cutting settlement" (Brit. Honduras, p. 1), and a few pages later (p. 4) "Additional articles to the Treaty of 1783 were made in 1786, at a convention held in London, whereby the right of cutting Mahogany was formally granted." It was, however, not distinguished from the West Indian species, for it is further remarked (p. 61) "Chief amongst the timber trees of the colony comes the mahogany (*Swietenia mahagoni*), which, with logwood, forms the staple article of export. The average quantity of mahogany shipped from British Honduras during the last five years amounts to nearly 3,000,000 feet, of the annual value of £30,000. The best qualities of mahogany . . . come from the limestone soils of the north of Belize; those from the south, and especially from the Mosquito Coast, being deficient in density and fine grain, are known in England as baywood."

In 1829 Sir William Hooker included the localities of all the three species under *S. Mahagoni*, but he gave some details of Honduras Mahogany, referring to Browne's remarks as to its distinctness, adding that workmen made an important distinction between the two woods, and that the Jamaica kind was the most valuable.

Apart from Sir George King's description of *S. macrophylla*, the only other reference to the question under consideration that we have found is in the West Indian Agricultural News for 1902, where, in a note entitled "Jamaica and Barbados Mahogany" (i. p. 54) we read, "It has been shown by Mr. Hart at Trinidad that the Mahogany trees so commonly grown at Jamaica, Barbados and elsewhere in the West Indies, are somewhat different from the Mahogany trees of British Honduras. The latter are said to be stronger-growing, while the leaves are larger and of a different shape." Since that time the differences between the two species have been fully recognised.

Very little is known about the distribution of *Swietenia macrophylla*, but besides the specimens from Tabasco and Honduras, preserved at Kew, there is also one from Cartagena, on the north coast of Colombia, east of Panama. This was sent by M. Antoine under the name of Mahogany, and if correctly localised and indigenous there, would indicate a possible wide distribution of the species in the countries bordering on the Caribbean sea. Unless there is more than a single species,

S. macrophylla is evidently the source of Honduras and Tabasco Mahogany, both well known on the market, but other Central American woods are known under the names of Costa Rica, Nicaragua, Guatemala and Panama Mahogany, the botanical source of which is in doubt. Colombia Mahogany, though shipped from Cartagena, is not a *Swietenia*, but the produce of *Cariniania pyriformis*, Miers, belonging to the family *Lecythidaceae*. It is said to be cut in the former state of Bolivar, 100 to 200 miles inland, and shipped from Cartagena.

Very close to *Swietenia macrophylla*, if not a form of the same, is a plant sent for determination by Sir Norman Lamont, who raised it from seeds of the second consignment obtained by the Trinidad Department of Agriculture from Honduras, somewhere about 1905. It is said to be about equal in height to undoubted *S. macrophylla*, planted at the same time, but is rather more branching and the branches have a less pronounced vertical habit. The leaves are rather smaller than in *S. macrophylla*, the inflorescence denser and the flowers rather smaller, but the general resemblance is so close as to suggest that it is only a varietal difference. The tree flowered profusely in 1918, but only a single fruit set, which has been sent to Kew, and cannot be separated by any essential character.

A tree with very similar leaflets is cultivated at Madras, a barren specimen, labelled "*S. macrophylla*, G. King, introduced, A. H. G., Madras, July, 1897," being preserved at Kew.

It would be interesting to identify the trees which produce other Central American Mahoganies, for example, Costa Rica, Nicaragua, Guatemala and Panama Mahogany, and for this flowering and fruiting specimens are desired. The term Mahogany is now applied to the timber of so many trees that nothing short of the actual materials will serve to identify them. All the timbers named may not belong to *Swietenia*, but in any case it is desirable that their botanical source should be ascertained.

X.—MISCELLANEOUS NOTES.

E. H. WILSON.—We learn that Mr. E. H. Wilson has been appointed Assistant Director of the Arnold Arboretum, Jamaica Plain, Mass., U.S.A.

Drawings of Indian Plants.—A set of about 600 water-colour drawings of Indian plants has recently been acquired for Kew. They are evidently the work of several artists, some of them native, others European, and appear to have been at one time the property of Claude Martin, who was born at Lyons on Jan. 4th, 1731, went to India in 1751 and, as an officer of the English East India Company, served in the Carnatic wars. In 1763 he obtained an ensign's commission in the Bengal Army, in which at length he became Major-General, retiring on half-pay in 1776, when he was allowed to accept the post of superin-