

What is mahogany? ... Are you sure?

Apart from being wood, what is mahogany and why should you be interested? You may be surprised. The modern use of the *word* mahogany may not necessarily mean what you think it means.

In guitar-making what we regard traditionally as "mahogany" is the timber of only one of 49 genera that belong to the botanical family **Meleaceae** (Mahogany family.) This genus is called *Swietenia*, native to Central and South America and the Caribbean. It has three species:

1. *Swietenia mahagoni*, traded as **Caribbean Mahogany, Cuban Mahogany, or West Indian Mahogany**. It is native to southern Florida in the United States, the West Indies, and South America; specifically Anguilla, Antigua and Barbuda, Bahamas, Bolivia, Cayman Islands, Colombia, Cuba, Dominica, Dominican Republic, Grenada, Guadeloupe, Jamaica, Martinique, Montserrat, St Barthélemy, St Kitts and Nevis, St Lucia, French St Martin, St Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos Islands, and Venezuela. It was the first species of mahogany used in the manufacturing of guitars until the 1950's. It has been commercially extinct since 1947.

2. *Swietenia macrophylla*, traded as **Brazilian Mahogany, Genuine Mahogany, or Big Leaf Mahogany**. It is native to the Atlantic side of Central America as well as much of South America, namely Belize, Bolivia, Brazil, Colombia, Costa Rica, Dominica, Ecuador, El Salvador, French Guiana, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Peru, and Venezuela. This species has been the one used for making guitars over the years, especially by Gibson Guitars Corporation. Since 2003 it has become commercially extinct with the exception of some limited supply from Brazil, Peru and Bolivia, under heavy restrictions.

3. *Swietenia humilis*, traded as **Honduras Mahogany, Pacific Coast Mahogany or Mexican Mahogany**. It is native to Belize, Costa Rica, El Salvador, Honduras, Mexico, Nicaragua, and Panama. There are very few populations left and it is used mainly in local carpentry.

Note. All three species are sometimes individually and collectively called **American mahogany**.

All species are listed on the [IUCN List Of Threatened Species](#), with *Swietenia mahagoni* listed as "endangered" and *Swietenia macrophylla* and *Swietenia humilis* listed as "vulnerable."



Swietenia macrophylla



Swietenia mahagoni



Swietenia humilis

What happened? In simplicity: overlogging and illegal trade over about 85 years has brought all species of *Swietenia* mahogany to near extinction. Since 1950 Central American populations have suffered a 70-90% decline.

Unfortunately it wasn't until the 1990's that the inevitable outcome was fully recognized and specific measures were taken internationally to try and save the resource from future extinction.

The **Convention on International Trade in Endangered Species of Wild Fauna and Flora** (CITES) is an international agreement between nations to uniformly police threats to the survival of plants and wild life due to human abuse. Formed in 1973 and passed in 1975 there are currently 180 "contracting parties" (nations) on the list as of 2014. Each party has their own legislation which aligns with the agreement. An example is the Lacey Act of the United States which exists to police and control illegal import and export of banned or restricted plants and substances and wild life, effective from 2008.

CITES has three different levels of protection for species, known as Appendices:

Appendix I – This appendix represents species that are in the most danger and are considered to be threatened with extinction, and are consequently the most restricted in international trade.

Appendix II – This appendix contains species that are at risk in the wild but not necessarily threatened with extinction. Species in this appendix are closely regulated but are typically not as restricted as Appendix I.

Appendix III – This appendix contains species that a certain country (contracting party) has voluntarily requested to be regulated in order to help preserve the species in question. Appendix III species regulation is only applicable for the specific party that has requested its inclusion and is therefore much less restrictive than Appendix I or II.

All three species of *Swietenia* are listed on CITES Appendix II: *Swietenia humilis* in January 1975, *Swietenia mahagoni* in November 1992 and *Swietenia macrophylla* in November 1995. Efforts to save the resource have become a major project of CITES. Throughout the 2000's there has been much work done to forward efforts to conserve the resource and to explore alternatives for reforestation and sustainability on a worldwide scale.

Unfortunately, efforts to repopulate mahogany in its native locations have turned out to be largely unsuccessful. There are four major reasons why *Swietenia* can no longer be re-grown natively:

1. The soil is now depleted and barren.
2. The aggressive mahogany shoot borer *Hypsipyla grandella* kills the new trees. Modern Science has not managed to overcome this.
3. Genetic loss means that the current generations of seeds for planting are inferior and/or mutated.
4. Erosion has taken place where large forests have been cleared leaving those areas now uninhabitable.

In order to save *Swietenia* mahogany from impending extinction Authorities were forced to look beyond its native locations to find solutions to the problem.

Attempts in the past to grow *Swietenia* in Africa resulted in uniform failure and abandonment due to attacks by *Hypsipyla robusta*, the African equivalent of *Hypsipyla grandella*. Europe was not considered as it does not have the right climate to grow it.

It turns out that Asia and the South Pacific are the most successful areas where *Swietenia* can be grown outside of its native locations. Following initial trials a number of Asian countries were consulted with and invested in to develop controlled, sustainable and renewable *Swietenia* mahogany plantations. This started mostly in the 1990's and was helped along by the 1993 World Bank report entitled "Tropical Hardwood Marketing Strategies for Southeast Asia". Under nursery conditions attack by *Hypsipyla* can be successfully controlled with insecticides.

In actual fact, some Asia-Pacific countries had already been growing *Swietenia* for a very long time!



Fiji had *Swietenia macrophylla* introduced originally in 1911 as an ornamental species using seeds from Honduras and Belize. The first mahogany plantations were established by the government in 1935 and then expanded upon throughout the 1950s and 1960s. Mahogany continued to be planted throughout the 1970s, 1980s and 1990s. Production was corporatized in 1998. There are over 55,000 hectares of mahogany plantations in Fiji today, many over 40 years old and are naturally regenerating. Harvesting began in 2003 and Fiji has since become the major producer and international supplier of new American mahogany today.



India had both *Swietenia macrophylla* and *Swietenia mahagoni* introduced in 1865 using seeds from West Indies. They were never managed and thereafter became naturalized forests. In 1988, in response to rapid deforestation and degradation, the Indian government placed major restrictions on legal domestic harvesting.



Bangladesh had Honduran *Swietenia macrophylla* introduced in 1872 and as with India it has become naturalized in some places. Since 1993 and especially in the early 2000s the country has become involved in establishing managed plantations however regular and major floodings occurring in Bangladesh have caused all species of timber plantations severe damage and plantations overall are constantly struggling.



Indonesia had *Swietenia mahagoni* and *Swietenia macrophylla* introduced in 1870 using seeds from India. Plantation forests including *Swietenia macrophylla* were planted from the 1920's to the 1940's but it wasn't until about 1990 that serious plantation development and management began. There are roughly 187000 hectares of mahogany plantations in Indonesia. During the 2000's Indonesia was a major exporter of American mahogany however this is no longer the case following the clamping down of illegal logging which accounted for an estimated 80% of the Indonesian timber trade. Currently Indonesia has the highest rate of deforestation (unsustainable logging) in the world, overtaking Brazil in 2012.



Sri Lanka had *Swietenia macrophylla* planted in 1897 but it wasn't really until the 1950's that plantations were consciously established. Then again it wasn't until the 1990's that any real significant investment was undertaken to take control of the unmanaged plantations which had since become naturalized forests. There are over 15,000 hectares of planted *Swietenia* plantations in Sri Lanka.



Malaysia had *Swietenia mahagoni* introduced in 1876 followed by *Swietenia macrophylla* in 1886 and 1892. Both species were attacked by *Hypsipyla robusta* and further planting was abandoned. Since 1992 Malaysia has become active in timber plantation development and management including some minor involvement with mahogany.



The largest *Swietenia* mahogany plantation in the **Philippines** which began in 1982 is now a significant source of new American mahogany today with other investment and development of Philippine plantations occurring after the 1993 World Bank report. *Swietenia macrophylla* is the third most planted species in the Philippines. There are a total of 274,000 hectares of managed timber plantations and approximately 76,000 hectares of managed natural forests. *Swietenia* accounts for approximately 50,000 hectares.



Solomon Islands first introduced *Swietenia macrophylla* in plantations in 1978 and continued planting until 1995

when the government privatized the program. During that time over 3500 hectares were planted. Large scale forestry planting is now done by private companies only and has led to exploitation and illegal logging.



China introduced *Swietenia mahagoni* in the late 1800's specifically in the regions of Fujian, Guangdong, Guangxi, Hainan, and Yunnan. It is cultivated successfully in those regions today. Overall China has 6.5 million hectares of hardwood plantations comprising 43% of total plantations in the world and has always been a leader in afforestation projects since the 1960s. In 1998 China banned the logging of mature trees throughout the country. Today, logging activities remain limited and instead China relies almost entirely on imports of timber and timber products from abroad, particularly Russia and Papua New Guinea.

As mahogany has a 35-40 year rotation, quality harvesting from some of these countries is still years away.

CITES restrictions do not apply to Asian-grown *Swietenia* mahogany as their plantations are sustainably managed and controlled.

Despite international efforts, illegal logging is still taking place in some parts of South America today with 80% of this illegal timber being supplied to the USA by criminal operations. Some sources have even predicted that South American-grown *Swietenia* may become extinct by 2016.

Mahogany other than *Swietenia*

Swietenia is not the only genus in the Mahogany family that yields high quality timber. There are 49 genera with approximately 550 species in the Mahogany family. Some have timber uses and some are even used as direct replacements for *Swietenia*. Others are merely plants and may only produce fruit, oil and seed often used for medicines or lotions. Of the ones that do yield timber, some include the word mahogany in their trade name and others do not. There are two terms to know:

1. **Genuine Mahogany** as a term applies to mahogany of the *Swietenia* genus only, wherever grown.
2. **True Mahogany** describes the timber of any Mahogany family genus other than *Swietenia*.

Some of the non-*Swietenia* mahoganies in use are:

KHAYA



K. anthotheca



K. grandifoliola



K. Ivorensis



K. Madagascarensis



K. Senalagensis

Khaya is a Mahogany family tree native to temperate Africa and Madagascar. It has 5 species. All species are collectively traded under the name **African Mahogany**. *Khaya* is the most accepted Mahogany family timber other than *Swietenia* to be called mahogany without qualification. It is probably the most popular *Swietenia* replacement. Variations in trade names are usually determined by where it is sourced.

Khaya grandifoliola which is native to Benin, the Democratic Republic of the Congo, Ivory Coast, Ghana, Guinea, Nigeria, Sudan, Togo, and Uganda is also called **Benin Mahogany**.

Khaya ivorensis which is native to Cameroon, Côte d'Ivoire, Gabon, Ghana, Liberia, and Nigeria is also called **Lagos Mahogany**. It has been introduced into Angola, Central African Republic, Guinea, and Togo.

Khaya senegalensis is found in Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Ivory Coast, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Mali, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Togo, and Uganda and also called **Senegal Mahogany** or **Dry Zone Mahogany**. Plantations now exist in China (introduced 1963-1966), Malaysia, Sri Lanka, Vietnam, and northern Australia.

Khaya madagascariensis is found in Madagascar and Comoros and is often simply called **Madagascar Mahogany**. This species is included in the IUCN Red List as "endangered."

Khaya anthotheca grows in Angola, Guinea Bissau, Liberia, Tanzania, Uganda, Zambia, Zimbabwe and Mozambique and is also known as **East African Mahogany** or **White Mahogany**. It is also grown in plantations in Southern Africa and in some Asian countries with varying success.

The wood of *Khaya senegalensis* and *Khaya grandifoliola* resembles *Swietenia* more closely than the wood of *Khaya anthotheca* and *Khaya ivorensis*, but they are heavier and harder. All native species are currently under inspection by CITES for recommending restrictions. The United States is the largest market for African mahogany, and the key exporters are Ghana, Côte d'Ivoire, Gabon and Cameroon (2011.)

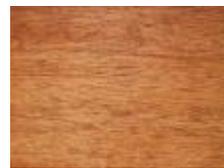
TOON



T. Ciliata



T. Calantis



T. Sinensis



T. Sureni

Toon, botanical name *Toona*, is a Mahogany family tree native throughout eastern Europe, northern Asia, and South East Asia. In SE Asia the wood is considered of high value and is used in house and ship building, for joinery, high-grade furniture, tea chests and boxes, musical instruments, toys and novelties, carvings, veneer, plywood and pencils. It is probably the most sought after true mahogany today for higher quality factory-made guitars where mahogany is specified. As a tonewood *Toona* is acoustically similar to *Swietenia* but lighter in weight. There are four species, each with their own trade names :

Toona ciliata is traded as **Indian Mahogany**. It is native to Bangladesh, Cambodia, China, India, Indonesia, Laos, Malaysia, Nepal, Pakistan, Papua New Guinea, Philippines, Thailand, Vietnam, and Australia. The Australian species is called **Red Cedar** but is no longer commercially available due to overlogging. *Toona ciliata* is the most common Toon species exported from Asia.

Toona sinensis is traded as **Chinese Mahogany**. It is native to eastern and south eastern Asia; stretching from eastern India, China, Nepal, North Korea, Myanmar, Thailand, Malaysia, to western Indonesia.

Toona sureni is traded as **Indonesian Mahogany**, **Vietnamese Mahogany** or **Suren**. It is native to Bhutan, China, India, Indonesia, Malaysia, Myanmar, Nepal, Papua New Guinea, Philippines, Thailand and Vietnam. It is important to differentiate between the term "Indonesian Mahogany" as *Toona* and "Indonesian Mahogany" as plantation-grown *Swietenia*.

Toona calantis is traded as **Philippine Mahogany**, or **Calantis/Kalantis**. It is native to Indonesia, Malaysia, and Philippines. This species was put on the IUCN Red List in 2006 and has felling restrictions.

IMPORTANT. "Philippine Mahogany" is also a generic term used in the USA carpentry trade and internationally to describe timbers from the *Shorea* species which is botanically unrelated to the Mahogany family. It consists of 196 species in the Dipterocarpaceae family native to much of Asia. 148 of the 196 species are threatened with habitat loss and have varying degrees of trade restrictions. It is possible to confuse this term, being that Philippine Mahogany could be 1) a *Shorea*, 2) native *Toona*, or 3) plantation-grown *Swietenia*.

SPANISH CEDAR



Spanish Cedar, botanical name: *Cedrela odorata*, (also called **Cedro** or **Brazilian Mahogany**) is one of 8 species of *Cedrela*, a Mahogany family tree native to Argentina, Brazil, Cuba, Dominican Republic, Ecuador, French Guiana, Guatemala, Haiti, Honduras, Jamaica, Mexico, Peru, and Trinidad and Tobago. It is also called Botanically *Cedrela* is the equivalent of Asian *Toona* except that it is native to the neo-tropics. *Cedrela odorata* was for a long time a very important Latin American timber, second to *Swietenia*. It was commonly used for making cigar boxes but it was also used for light construction, joinery, mouldings, panelling, louvered doors, boat building, furniture, cabinet work, weatherboards, boxes, household implements, musical instruments, carvings, veneer, plywood, turnery and matchboxes. It has been used for necks, tops and sides of classical and flamenco guitars, and as a veneer, cap, or body for electric guitars. The timber of two other *Cedrela* species have sometimes been used interchangeably, namely *Cedrela fissilis*, native to Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Panama, Paraguay, Peru, Suriname and Venezuela; and *Cedrela lilloi*, native to Argentina, Bolivia, Brazil, Paraguay, and Peru. Both of these species are nearly extinct and each are listed on the IUCN Red List as "endangered" while *Cedrela odorata* is listed as "vulnerable." Woods from Columbia and Peru were added to CITES Appendix III in 2001. Wood from Guatemala was added to Appendix III in 2008. Bolivia requested its 3 species be added to Appendix III in 2010, followed by Brazil in 2011. As with *Swietenia*, all *Cedrela* is susceptible to *Hypsipyla* attack. *Cedrela odorata* has been introduced into Southeast Asia and Oceania, specifically Australia (1987), China (Guangdong province), Fiji (1960s), Hawaii (1910), Indonesia (19??), Malaysia (19??), Papua New Guinea (1959), Philippines (1915), Singapore (19??), Solomon Islands (1985), Sri Lanka (ca 1990), and Vietnam (1988.) Plantations in Southeast Asia are of small scale and most of the timber is consumed locally. International trade from these countries is of no importance. *Cedrela odorata* was introduced into Africa as far back as 1898 in Ghana, as well as in Tanzania in 1911, and Nigeria in 1929. Timber plantations were established in Côte d'Ivoire (1963), Ghana (1922), Uganda, Tanzania, Madagascar and South Africa. In 2013, Ghana, China and Guatemala were the major exporters of *Cedrela odorata* to the United States.

SAPELE



Sapele (also **Sapelli**), botanical name *Entandrophragma cylindricum*, is one of 11 species of *Entandrophragma*, a Mahogany family tree native to tropical Africa. It is used for backs and sides of acoustic guitars and tops of electric guitars. It is identifiable by having sweeping, striped grain and varies in colour from reddish to purple-brown. It's sound properties are very close to *Swietenia* mahogany. Other uses include furniture, cabinetry, flooring, boatbuilding and plywood. The USA imports large quantities of Sapele from Cameroon. Other major exporters are Congo, Ivory Coast and Ghana. Sapele is not listed in the CITES Appendices but is now listed on the IUCN Red List as "vulnerable." Some countries have their own protected populations and felling restrictions in place.

SIPO (UTILE)



Sipo (or **Utile**); botanical name *Entandrophragma utile* is another species of African *Entandrophragma* which is very suitable for guitar manufacturing. It's properties are slightly more closer to *Swietenia* mahogany than it's Sapelli sibling although visually it is generally slightly less grained than Sapelli. It can be used for the same things in guitar manufacturing as Sapelli. Sipo/Utile is otherwise used for furniture, exterior joinery, construction and boat building.

It is more popular in Europe than the United States where instead Sapelli is the dominant of the two. It is native to western and central Africa and is obtained mainly from the Central African Republic, Congo and Ghana. Europe is the main export market. As with Sapelli it is now on the IUCN Red List. In Uganda it is almost extinct due to overlogging and exploitation.

TIAMA



Tiama; botanical name *Entandrophragma angolense* is another species of *Entandrophragma* occurring throughout western, central and southern Africa. It also known as **Tiama Mahogany** or **Gedu Nohor**. Its colour is brown, often with a slight purple tint. The wood is highly valued for exterior and interior joinery, furniture, cabinet work, veneer and plywood, and is also used in Africa for flooring, interior trim, panelling, stairs, ship building, vehicle bodies and coffins. It is suitable for light construction, musical instruments, toys, novelties, boxes, crates, carvings and turnery. It is exported mainly from Cameroon, Congo, Gabon and Ghana. Most Tiama is exported to Europe. It is included in the IUCN Red list as "vulnerable."

KOSIPO



Kosipo, botanical name *Entandrophragma candollei* is another of the 11 species of *Entandrophragma* also native to western and central Africa. Wood from this species is used for construction, flooring, exterior and interior joinery, boat building, furniture, cabinet work, toys, boxes, crates and plywood. It is reddish-brown in colour and due to its resemblance to Sapele is considered a cheaper alternative to the other more expensive *Entandrophragma* species. It is exported mainly from Republic of Congo, Gabon and Ghana. It is included in the IUCN Red list as "vulnerable."

MOUNTAIN MAHOGANY



Mountain Mahogany, (also traded as **Bottle Tree**) botanical name *Entandrophragma caudatum* is a lesser known species of African *Entandrophragma* occurring from Malawi, Zambia and Mozambique to South Africa, Botswana and Zimbabwe. The wood is reddish brown or dark brown and can have a nice figure. It is used locally for furniture, cabinet work and canoes. There is no commercial trade of this timber as supply is limited, one reason being that the trees are usually not large enough to yield desirable timber. This species is not to be confused with the tree of the same name found in California USA, species *Cercocarpus* which is unrelated to the mahogany family genus.

GUAREA



G. cedrata



G. thompsonii



G. grandifolia

Guarea is a Mahogany family genus with 43 species, three of which have timber uses: *Guarea cedrata* and *Guarea thompsonii* which are native to Africa and traded as **Bosse** or **Pink Mahogany**, and *Guarea grandifolia* which is native to Central and Latin America and in English is traded as **American Muskwood**. It resembles *Khaya* (African mahogany) in appearance and is botanically very close to Sapelli mahogany. The wood is valued for house building, flooring, joinery, interior trim, panelling, window frames, doors, ship building, vehicle bodies, furniture, cabinet work, decorative boxes, crates, veneer and plywood. It is suitable for musical instruments, toys, novelties, carving and turnery. The African species were a major export timber but is now endangered in some countries. In America it is a widely accepted mahogany substitute and is sometimes used in the manufacturing of acoustic guitars.

EAST INDIAN MAHOGANY



East Indian Mahogany, botanical name: *Chukrasia tabularis*, is also known as **Chickrassy**, **Chittagong Wood**, **Indian Mahogany**, or **White Cedar**. This Mahogany family tree is native to Bangladesh, Burma, Cambodia, China, India, Laos, Malaysia, Sri Lanka, and Vietnam. It has also been introduced into Southern Africa and the Caribbean. In tropical Asia the wood is highly prized for high-grade cabinet work, decorative panelling, interior joinery such as doors, windows and light flooring, and for carving, toys and turnery. It is also used for light to medium-heavy construction work, e.g. for posts, beams, scantlings and planks, and for railway sleepers, ship and boat building, furniture, musical instruments (especially pianos), packing cases, sporting goods, truck bodies, mallet heads, anvil blocks, brush wares, drawing equipment, rifle butts, veneer and pulp. Botanically it is very close to *Cedrela* and *Toona*.

CACHARANA



Cacharana, **Cangerana** or **Cajarana**, botanical name: *Cabrlea canjerana* is a Mahogany family tree found only in South America and pretty much unknown to the rest of the world. It has no equivalent English name. There is not even an English Wikipedia entry for it. It is native to Argentina, Brazil, Paraguay, and Uruguay. Widely available in Brazil, it is used in local general carpentry, furniture, interior construction, carvings and joinery. Its colour is usually a dull red or maroon often with purplish markings. Gibson Guitars has used it as a top on their Les Paul "Smartwood" models and other South American luthiers use it for bodies and necks of electric guitars. From what little I know it appears to be a very good tonewood and an ideal replacement for *Swietenia*. As it only has a Spanish name I am going arbitrarily christen it "New World Mahogany" for the English-speaking world. It's as good a name as any. Maybe it will catch on?

NATAL MAHOGANY



Trichilia is a Mahogany family genus with 42 species, 4 of which are native to southern, central and eastern Africa, and the rest native to South America and some parts of the Caribbean. Most of the South American species are endangered by habitat loss. Of the African species *Trichilia emetica* is native to Botswana, Burkina Faso, Chad, Congo, Eritrea, Ethiopia, Guinea, Guinea-Bissau, Kenya, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, Somalia, South Africa, Sudan, Swaziland, Tanzania, Uganda, Yemen, Zambia, and Zimbabwe. It is known

locally as **Natal Mahogany** or **Cape Mahogany**. It's wood is a pink colour. For a hardwood it is quite soft. Timber uses include carvings, traditional folk musical instruments, household implements, furniture, bats and canoes. The oil is used locally as a topical medicine. Another African species, *Trichilia dregeana* is known in South Africa as **Forest Mahogany**. These two southern African mahogany species are largely unknown to the rest of the world as neither appear to be an export product (?) *Trichilia hirta* is native to West Indies and ranges from Mexico through Central America to Brazil and Bolivia in South America. It has many local Spanish names but in English is called **Broomstick**. Its timber has been used for oars, broom handles, and local carpentry as well as for fuel, stakes, and fence posts.

ROYAL MAHOGANY



Royal Mahogany is the U.S trade name for *Carapa guianensis*, a Mahogany family tree native to Central and South America. It is known more commonly in English as **Crabwood**, **Demerara Mahogany**, or **Bastard Mahogany** and in Spanish as **Andiroba** or **Carapa**. Its heartwood has colour varying from light salmon to reddish-brown that darkens with time to a medium to dark shade. It is an ideal timber for furniture, cabinetry, mouldings, windows and doors, joinery, panelling, and medium to light construction and as a mahogany substitute. It has a similar appearance to *Swietenia*, often with more "swirl" to the grain. Botanically it is very close to *Swietenia* and *Khaya*. It is the third most important export timber from Brazil, behind *Cedrela* and *Swietenia*. It is used in South America as a tonewood, for acoustic guitars and ukuleles. There is one other South American species, *Carapa megistocarpa*, native to Ecuador, called **Tangare**. The Ecuadorian species is endangered. There is a third species, *Carapa procera* which is native to Western Africa called **African Crabwood** or **Okoto**. As a note, "Royal Mahogany" is also one of the trade names for a non Mahogany timber called **Wild Tambrand** or **Quebracho** of the genus *Pithecellobium* which is native to Guatemala, Mexico, and Belize, and is used as a mahogany substitute in general interior and exterior construction and furniture in the United States.

NEW ZEALAND MAHOGANY



New Zealand Mahogany, botanic name: *Dysoxylum spectabile* is a Mahogany family species native to New Zealand and is one of the 80 species of *Dysoxylum* which is endemic to much of Asia and Oceania. It's local name is **Kohekohe**. It grows mainly in North Island and northern parts of South Island. New Zealand mahogany is softer than other Mahogany family timbers and is used in general carpentry. It is not desirable as a tonewood. A major threat to this species as well as many other native plants and trees are possums which were introduced from Australia in 1837. Effective controls have only been in place since 1990. Note, New Zealand Kohekohe should not be confused with the plant of the same name which is native to Hawaii.

ROSE MAHOGANY



Rose Mahogany, botanical name: *Dysoxylum fraserianum* is native to eastern Australia and is one of the 80 species of *Dysoxylum*. This Australian species is more often called **Rose Wood** in Australia. I have seen it used as a body wood in Australia-made guitars. Another eastern Australian variant *Dysoxylum mollissimum subsp. molle*, is known as **Miva Mahogany**, **Red Bean** or **Onionwood**. Both species are used for furniture, plywood, shop and office

fixtures, carving, turnery, and joinery, although miva mahogany is no longer commercially available.

CHINABERRY



Chinaberry, botanical name: *Melia azedarach*, is one of 12 species of *Melia* and is also known as **Bead-Tree**, **Cape Lilac**, **Persian Lilac**, and **White Cedar**. It is a Mahogany family tree native to Pakistan, India, China, South East Asia and Australia that yields a high quality reddish-brown timber used in Asia to manufacture agricultural implements, furniture, plywood, boxes, poles, tool handles etc. It is used in cabinet making and in construction because of its resistance to termites. Its fruit are poisonous to humans and animals. It is suitable as a tonewood and can be used for bodies of electric guitars. There is no commercial trade in it at this time as it is considered invasive and for this reason is commercially ignored. Outside of Asia it is of interest mainly to hobbyists.

BROWN MAHOGANY



Brown Mahogany, botanical name *Lovoa trichilioides* is one of two African Mahogany family species found in Angola, Cameroon, Congo, Côte d'Ivoire, Gabon, Ghana, Liberia, Nigeria, Sierra Leone, Tanzania, and Uganda. It is also traded as **African Walnut** and **Dibetou**. Wood from this species is highly valued for furniture, cabinet work, flooring, carpentry, joinery, interior trim, stairways, panelling and veneer, and plywood. In Africa it is used for house construction, vehicle bodies, implements and handles, and to make canoes. It is suitable for ship building, sporting goods, toys, novelties, railway sleepers, carving, boxes, crates, turnery and as pulpwood. Small exports originate from Côte d'Ivoire, Cameroon, Gabon and Congo. It's other species, *Lovoa swynnertonii* occurs in eastern Democratic Republic of the Congo, Kenya, Uganda, Tanzania, Zimbabwe and Mozambique. Its wood has been used for similar purposes but has been subject to heavy exploitation in many regions and is rare almost everywhere in its distribution area. It is listed as endangered in the IUCN Red list. Plantations have been unsuccessful because of infestation by *Hypsipyla robusta*.

SCENTLESS ROSEWOOD



Synoum is an Australian Mahogany family genus with two species: *Synoum muelleri* called **Scentless Rosewood**, and *Synoum glandulosum* called **Red Sycamore**. It is red to reddish-brown. Both are used in Australian construction for general house framing, flooring, mouldings and joinery as well as for furniture, shop and office fixtures, panelling, turnery, and carving. It is not considered a first class timber and I am unaware of this being used as a tonewood for musical instruments.

Non Mahoganies traded as “mahogany”

In addition to "genuine" and "true" mahogany family timbers, there are other timbers which have no botanical relation to the Mahogany family at all, yet have a trade name that includes the *word* mahogany in it. It may

be important to know these substitute timbers so that one can make a distinction when or if required. These botanically unrelated timbers may share similar appearances or tonal qualities to genuine or true mahogany, but that is all. Often the so-called "mahogany" trade name is not the main or only trade name.

PHILIPPINE MAHOGANY



Balau



Lauan



Light Red Meranti



Dark Red Meranti



White Meranti

Philippine Mahogany, from the point of view of the United States furniture industry is clearly defined by the U.S Federal Trade Commission, Code of Federal Regulations Title 16, Section 250.3 Identity of Woods where it states: "The following non mahogany timbers may legally be called 'Philippine mahogany' in the USA: **Tanguile, Lauan, Tiaong, Almon, Mayapis and Bagtikan.** ..." As mentioned above these timbers are various species of *Shorea* which are native to Malaysia, Indonesia, Philippines and Thailand. Outside of the United States the term Philippine Mahogany specifically applies to **Lauan** from Philippines, the various types of **Meranti** from Malaysia, **Seraya** from Indonesia, and **Balau** which is native to all. In Australia all species are sometimes called **Pacific Maple**. These timbers range in colour from grey to dark reddish brown and are usually used as veneers or plywood. Visually they are a lot more grainier than real mahogany. Remember though that the term Philippine mahogany could also refer to native Philippine *Toona*, or plantation *Swietenia* grown in the Philippines.

CHERRY MAHOGANY



Cherry Mahogany. Scientific names: *Tieghmella heckelli* and *Tieghmella africana* are also known as **Makore**. Both species grows throughout western Africa and although not a Mahogany family genus is very similar in properties to *Khaya* (African mahogany.) Timber uses for both species are interchangeable and used mainly for furniture, boatbuilding, and cabinetry as well as veneer. As a tonewood it is used as a laminate for electric and acoustic guitar tops and for electric guitar bodies. It is also used in making drums. Colour is pink-red to reddish-brown and sometimes it can have an attractive figure. *Tieghmella africana* is also called **Douka**. Both species are listed on the IUCN Red List as "endangered."

SANTOS MAHOGANY



Santos Mahogany. Scientific name: *Myroxylon balsamum*. Native to Mexico, central and southern America this timber is stronger and harder than mahogany but shares a similar appearance. It is used in furniture, flooring and heavy construction. It has been used for making acoustic guitars and has been said to be similar in tone to American and African mahogany but with deeper lows.

EAST INDIAN MAHOGANY



East Indian Mahogany. Scientific name: *Pterocarpus dalbergioides*. Native to the Andaman Islands of India and some parts of mainland India, this timber is also traded under the name **Andaman Padauk** or **Narra**. It is a major export timber from India and bears visual similarity to mahogany although much redder. It is used as a rosewood substitute in acoustic guitar making. There is an African equivalent, *Pterocarpus soyauxii* usually traded as **African Padauk** or **Vermillion** which is renowned as a tonewood for both acoustic and electric guitars.

RED MAHOGANY



Red Mahogany. Scientific name: *Eucalyptus resinifera* is a hardwood native to eastern Australia and used for furniture, flooring, panelling, boat building and general construction. It is one of approximately 800 species of *Eucalyptus*, most of which are native to Australia. It has been introduced into Southern Africa, Italy, Portugal, and Hawaii as a plantation crop. Much of the 4500 hectares of red mahogany plantations in Queensland Australia were destroyed by Cyclone Yasi in 2011.

SWAMP MAHOGANY



Swamp Mahogany, botanical name *Eucalyptus robusta* is mahogany family hardwood native to a narrow coastal area in south-eastern Australia, from southern Queensland to southern New South Wales. Internationally It is one of the most widely planted *Eucalyptus* species having been introduced into many countries in Asia, South America and tropical Africa as well as Hawaii and the United States. The wood is generally used for construction, poles, ordinary furniture, wheels, boat building, wharf construction, shingles, pallets and boxes. The wood is also suitable for mine props, railway sleepers, vehicle bodies, agricultural implements, food containers, joinery, turnery and musical instruments such as the didgeridoo. In many countries the tree is used for firewood and as charcoal, in erosion control, as a roadside shade tree, and in Uganda it is used to drain swamps.

WHITE MAHOGANY



White Mahogany. Scientific name: *Eucalyptus acmenoides* is another Australian eucalypt. It is abundant in Australia and is regarded as a high quality timber. The timber has various uses, including heavy engineering, poles, railway sleepers, bridge and wharf construction, framing, decking stumps, fence posts, joists, flooring, plates and weatherboarding, and furniture. Its native Aboriginal name is **Baraly** and in Queensland it is often called **Yellow Stringybark**. I am not aware of this timber being used as a tonewood.

EASTERN MAHOGANY



Eastern Mahogany. Scientific name: *Palaquium* is a genus in the Sapotaceae family with 120 species found throughout Thailand, Malaysia, Philippines, Indonesia, Papua New Guinea, Solomon Islands and Fiji. Wood from the species is also called **Nato** (Philippines), **Nyatoh** (Malaysia), **Nyatuhin** (Indonesia) and **Masang** (Thailand.) Eastern Mahogany ranges in colour from pink to red-brown. It varies wildly in weight and density and is predominately used for interior joinery, furniture, plywood and some craft applications. Recently it has found its way as a mahogany replacement in entry-level Asian-made electric and acoustic guitars. Well-known guitar brands [B.C Rich](#) and [Eastwood](#) use this species as a mahogany substitute. Another Sapotaceae genus, *Payena* has 20 species, 5 of which are principal sources of commercial timber and are also traded as **Nyatoh**. There are no CITES restrictions on *Palaquium* or *Payena* but some species of *Palaquium* are listed on the IUCN Red List. **NOTE:** Species from this genus must not be confused with the South American genus *Mora* which grows in Guyana and Suriname and is also traded coincidentally as **Nato**, and is also used for guitar necks and bodies.

BORNEO MAHOGANY



Borneo Mahogany. Scientific name: *Calophyllum inophyllum* is native to eastern Africa, Asia, the south Pacific and Australia. It is one of 187 species, most of which are found in Asia. No species exist in Europe. Its colour is pink to reddish-brown. Borneo Mahogany goes by many other names, some of the common ones being **Alexandrian Laurel**, **Laurelwood**, **Bitangor**, and **Poon**. The timber from this and other species in the genus are used for boat building, furniture, flooring and plywood. It is also used for backs and fronts of entry-level acoustic guitars.

GABOON MAHOGANY



Gaboon Mahogany. Scientific name: *Aucoumea klaineana*, is better known as **Okoume** and is a large timber-producing tree native to the west coast of equatorial Africa. In Gabon and Equatorial Guinea, Okoume is one of the most important timber species, accounting for more than 60 percent of timber production. The wood is pink in colour. It is used in light interior construction, carpentry, furniture, sports equipment, cigar boxes and packing cases. I am not aware of this timber being used as a tonewood. Its IUCN Red List status is “vulnerable.”

Summary

1. There is only one genus in the Mahogany family that is considered to be "genuine" mahogany. This is *Swietenia*.
2. Natively grown *Swietenia* is almost extinct and what's left is heavily restricted.
3. "Genuine mahogany" as a term applies to *Swietenia* only.
4. "True mahogany" as a term applies to Mahogany family timbers in use that are not specifically *Swietenia* such as

Carapa, Cedrela, Chukrasia, Dysoxylum, Entandrophragma, Khaya, Guarea, and Trichilia.

5. Not all true mahoganies are suited as tonewoods.

6. Fiji and Philippines are the major suppliers of plantation *Swietenia* mahogany today.

7. At this time *Swietenia* cannot be regrown in its native locations due to permanent damage to the environment and unsolvable problems with pests.

8. There are other timbers that have no botanical relation to the Mahogany family but are traded as "mahogany" in name only. Often these have other trade names which may also be better known.

9. You may need to ask more questions when someone talks about "Indian mahogany", "Indonesian mahogany" or "Philippine mahogany" etc. It could be either native *Toona* or plantation-grown *Swietenia*. Or in the case of "Philippine Mahogany" it might be something that has no relation to real mahogany at all.

10. No guitars made in a factory (mass-produced) are made of genuine mahogany. Zero.

11. Only high-end custom shop guitar builders make instruments with genuine mahogany. If it is genuine mahogany (*Swietenia*) it will be plantation-grown or possibly American mahogany obtained before the ban in 2003. Expect to pay at least \$3000 for any electric guitar or bass made of genuine mahogany.

If someone tells you a guitar is made of "mahogany", using this guide may help you ascertain what it has actually been made of. I hope you can use these and be well informed!

More information:

http://wwf.panda.org/what_we_do/endangered_species/bigleaf_mahogany/

<http://www.un.org/News/Press/docs/2003/unep181.doc.htm>

<http://www.cites.org/eng/prog/mwg.php> (CITES page dedicated to Mahogany)

http://www.worldagroforestrycentre.org/search/google/swietenia?query=swietenia&cx=009242321525858492011%3Akcxdcf_pz&cof=FORID%3A11&sitesearch=&safe=medium

http://www.cifor.org/publications/pdf_files/Books/BKrisnawati1104.pdf

<http://www.fao.org/docrep/005/y7204e/y7204e05.htm>

<http://www.fao.org/docrep/006/AD111E/AD111E02.htm>

<http://www.fao.org/docrep/005/Y7207E/y7207e08.htm#TopOfPage>

<http://www.fao.org/docrep/005/Y4586E/y4586e07.htm#TopOfPage>

<http://www.fao.org/docrep/005/Y7207E/y7207e06.htm>

<http://www.fao.org/ag/againfo/programmes/en/lead/toolbox/Grazing/tDefores.pdf>

http://www.itto.int/files/user/cites/brazil/Management%20of%20h-grandella_final_report.pdf

<http://www.prota4u.org/protav8.asp?h=M4&t=Swietenia&p=Swietenia+mahagoni#Synonyms>

<http://www.prota4u.org/protav8.asp?h=M4&t=Swietenia&p=Swietenia+macrophylla#Synonyms>

<http://www.prota4u.org/protav8.asp?h=M4&t=Swietenia&p=Khaya+senegalensis#Synonyms>

<http://www.prota4u.org/protav8.asp?h=M4&t=Swietenia&p=Chukrasia+tabularis#Synonyms>

<http://www.prota4u.org/protav8.asp?h=M4&t=Swietenia&p=Entandrophragma+angolense#Synonyms>

<http://www.prota4u.org/protav8.asp?h=M4&t=Cedrela,odorata&p=Cedrela+odorata#Synonyms>

<http://www.prota4u.org/protav8.asp?h=M4&t=toona.ciliata&p=Toona+ciliata#Synonyms>

<http://www.prota4u.org/protav8.asp?h=M4&t=Guarea,thompsonii&p=Guarea+cedrata#Synonyms>

<http://www.prota4u.org/protav8.asp?h=M4&t=Trichilia,emetica&p=Trichilia+emetica#Synonyms>

<http://aciarc.gov.au/files/node/2239/pr97chapter4.pdf>

<https://rirdc.infoservices.com.au/downloads/04-135.pdf>

<http://www.sidalc.net/repdoc/a1310i/a1310i.pdf>

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