

This week's
TUTOR'S TIDINGS



Week 15

Friday 13th April, 2016

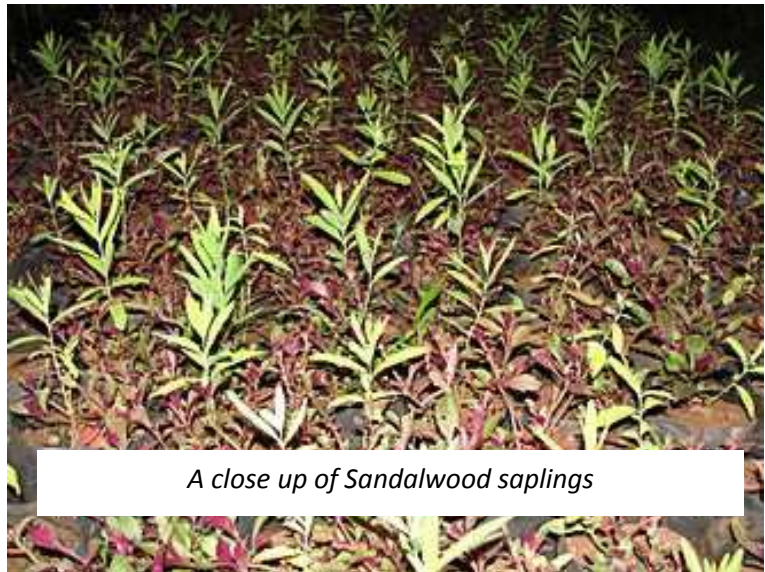


SANDALWOOD
(*Santalum*)

BEAUTIFUL WOODS of the WORLD
(No 9 in a series of 10)



Sandalwood is the name of a class of woods from trees in the genus *Santalum*. The woods are heavy, yellow, and fine-grained, and unlike many other aromatic woods, they retain their fragrance for decades. Sandalwood oil is extracted from the woods for use. Both the wood and the oil produce a distinctive fragrance that has been highly valued for centuries. Consequently, species of these slow-growing trees have suffered over-harvesting in the past century.



Sandalwoods are medium-sized hemiparasitic trees, and part of the same botanical family as **European mistletoe**. Notable members of this group are **Indian sandalwood** (*Santalum album*) and **Australian sandalwood** (*Santalum spicatum*); others in the genus also have fragrant wood. These are found in India, Nepal, Bangladesh, Pakistan, Sri Lanka, Australia, Indonesia, Hawaii, and other Pacific Islands.

- *S. album* is a threatened species indigenous to South India
- Although sandalwood trees in India, Pakistan, and Nepal are government-owned and their harvest is controlled, many trees are illegally cut down.
- **Sandalwood oil prices have risen to \$2,000 per kg recently.**
- New plantations were created with international aid in Tamil Nadu for economic exploitation.
- **In Kununurra in Western Australia, Indian sandalwood is grown on a large scale.**
- Hawaiian sandalwood (*'iliali*), was also used and considered high quality. The species was exploited between 1790 and 1825 before the supply of trees ran out.
- Sandalwood is used by aromatherapists and perfumers.
- In the 1840s, sandalwood was Western Australia's biggest export earner.
- Oil was distilled for the first time in 1875, and by the turn of the 20th century, production of Australian sandalwood oil was intermittent.
- However, in the late 1990s, Western Australian sandalwood oil enjoyed a revival and by 2009 had peaked at more than 20,000 kg (44,000 lb) per year – much of which went to the fragrance industries in Europe.
- Although overall production has decreased, by 2011 a significant percentage of its production was heading to the chewing tobacco industry in India alongside Indian sandalwood – the chewing tobacco market being the largest market for both oils in 2012.

Sandalwood Oil



Production



Sandalwood leaf

Producing commercially valuable sandalwood with high levels of fragrance oils requires *Santalum* trees to be a minimum of 15 years old (*S. album*) the age at which they will be harvested in Western Australia – the yield, quality and volume are still to be clearly understood.

Australia likely will be the largest producer of *S. album* by 2018, the majority grown around Kununurra, Western Australia.

Western Australian sandalwood is also grown in plantations in its traditional growing area in the wheatbelt east of Perth, where more than 15,000 ha (37,000 acres) are in plantations. Currently, Western Australian sandalwood is only wild harvested and can achieve upwards of AU\$16,000 per tonne, which has sparked a growing illegal trade speculated to be worth AU\$2.5 million in 2012

Sandalwood is expensive compared to other types of woods therefore to maximize profit sandalwood is harvested by removing the entire tree instead of sawing it down at the trunk close to ground level. This way wood from the stump and root, which possess high levels of sandalwood oil, can also be processed and sold.

Uses

Fragrance: Sandalwood oil has a distinctive soft, warm, smooth, creamy, and milky precious-wood scent. It imparts a long-lasting, woody base to perfumes. When used in smaller proportions in a perfume, it acts as a fixative, enhancing the longevity of other, more volatile, materials in the composite. Last but not least, sandalwood is a key ingredient in the "floriental" (floral-ambery) fragrance family – when combined with white florals such as jasmine, ylang ylang, gardenia, plumeria, orange blossom, tuberose, etc.

Sandalwood oil in India is widely used in the **cosmetic industry**. The main source of true sandalwood, *S. album*, is a protected species, **and demand for it cannot be met**. Many species of plants are traded as "sandalwood". The genus *Santalum* has more than 19 species.

Hinduism



Sandalwood
carved statue of
Lord
Ganesha

Sandalwood paste is integral to rituals and ceremonies, to mark religious utensils, and to decorate the icons of the deities. It is also distributed to devotees, who apply it to their foreheads or the necks and chests. Preparation of the paste is a duty fit only for the pure, so is entrusted in temples and during ceremonies only to priests.

The paste is prepared by grinding wood by hand upon granite slabs shaped for the purpose. With the slow addition of water, a thick paste results (called kalabham) which is mixed with saffron or other such pigments and further mixed with herbs, perfumes, and some other compounds to make powders which are very popular in India

In Hinduism, sandalwood is thought to bring one closer to the divine. Thus, it is one of the most used holy elements in Hindu societies.

Buddhism

Sandalwood scent is believed by some to transform one's desires and maintain a person's alertness while in meditation. It is also one of the more popular scents used when offering incense to the Buddha and the guru.

Islam

In *sufi* tradition, sandalwood paste is applied on the *sufi's* grave by the disciples as a mark of devotion. It is practiced particularly among the Indian Subcontinent disciples. In the Tamil culture irrespective of religious identity, sandalwood paste or powder is applied to the graves of sufis as a mark of devotion and respect.

Chinese and Japanese religions

Sandalwood, along with agarwood, is the most commonly used incense material by the Chinese and Japanese in worship and various ceremonies. However, Taoists are forbidden from using sandalwood (as well as benzoin resin, frankincense, foreign produced) incense and instead either use agarwood in worship.

Zoroastrianism

Zoroastrians offer sandalwood twigs to the firekeeping priests who offer the sandalwood to the fire to keep the fire burning. Sandalwood is offered to all of the three grades of fire in the fire temple, including the Atash Dadgahs. Sandalwood is not offered to the *divo*, a homemade lamp. Often, money is offered to the *mobad* (for religious expenditures) along with the sandalwood. Sandalwood is called *sukhar* in the Zoroastrian community. The sandalwood in the fire temple is often more expensive to buy than at a Zoroastrian store. It is often a source of income for the fire temple.

Medicine

Sandalwood essential oil was popular in herbal medicine up to 1920–1930, mostly as a urogenital (internal) and skin (external) antiseptic. Its main component is santalol (about 75%). It is used in aromatherapy and to prepare soaps.

Food

Australian Aboriginals eat the seed kernels, nuts, and fruit of local sandalwoods.

Distillation

Sandalwood is distilled in a four-step process, incorporating boiling, steaming, condensation, and separation. The process is known as steam distillation and is widely carried out industrially at Kannauj, Ind

CLUB NEWS

*WE have received an offer of a quantity of **BLACK WALNUT** wood from a generous donor. This wood will now be recovered by committee member **ROBERT WISELEY**. It is intended to transport the large rounds to our workshop for further processing by those members interested in taking home some blocks for storage and seasoning (drying). The date for this activity has yet to be set.*

- The club now has two sets of small, white plastic cones for pen making.
- Tool sharpening: We have a new white grindstone and two jig slides soon to be fitted to the sharpening department.
- ALL members will be given opportunities to learn how to sharpen tools.
- A set of mini-chisels will soon be available for use.
- 4" bowl buffs for "Beale-ing" the inside of bowls are no on the shelf or use.

It's great to see the influence of the Terry Scott weekend already showing up in some turnings including textured embellishments together with the use of colour to add interest.

Cheers

Clive

Very sorry about the lack of "Workshop Happenings" this week but I have been somewhat distracted.

Yesterday I discovered that that some despicable lowlife burgled my garage and stole my large black wheeled tool chest (yes the one I bring to every turning class) This means that until Insurance claims are settled I will be short of tools to bring each week. I have spent the entire day talking with police, the insurance company and filling out claim forms. A loss for me of more than a thousand dollars! Criminals are just not worth the skin they live in.