

# Hamilton Woodturners Club

[www.hwoodturners.org](http://www.hwoodturners.org)

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*Remember, if I cannot break it, no-one can!*

Good morning to all our TT readers. The weekly TT resumes today after a three-week break during which time I have been exploring parts of Vietnam and Cambodia where the temperatures ranged from 38-44 degrees every day. OK back in NZ and a southerly bitter-cold blast has been forecast for this weekend. Phooey!

During my travels I looked hard for any Asian woods and found the most beautiful, dense, hard and dark coloured wood that must be the envy of all woodturners - the Vietnamese trader called it **SANDALWOOD**. (info follows)

**WINTER** blast heading our way this weekend.

1. This week's TT includes a repeat of information about **SANDALWOOD** which was first published in the TT series, "Beautiful Woods of the World". I purchased two, small tennis-ball sized, spherical shapes of this very beautiful rich-brown wood. You will note in the information page that **SANDALWOOD** is a much-prized wood and is yellow in colour. Maybe the guy who sold me the spheres of wood got his names confused. Or maybe the spheres of "Sandalwood" that I purchased are from a tree of a related variety.
2. Next week is a special display will be held. The THURSDAY session team members have decided to hold an exhibition of all their recently completed **Wave Bowls**. Please place your entries on the front table and fill out an identifying label.
3. The chooky raffle was won by **Spencer**
4. The next TUESDAY session will welcome a few more new members so the numbers are building once again. Cheers **Clive**

# SANDALWOOD

(*Santalum*)

## BEAUTIFUL WOODS of the WORLD



**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.



*Santalum album*



A close up of Sandalwood saplings

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 (*'iliahi*), 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.

## 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.<sup>[4]</sup>

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.<sup>[5]</sup>

## 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 *moad* (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, India.

## Thursday session projects



COLIN's spin-wheel is made from white maire wood. The challenge with this project was to make the spin-wheel whistle/hum while spinning.



Colin's gets right down to NUTS and BOLTS. This model is made from swamp maire



WAVE bowl made by Colin using his favourite wood, black maire.

**Below left:**

Gideon's beautifully made Japanese cedar wood bowl.

**Below:**

This is Gideon's first attempt at making a lidded pot. Note how well the grain lines of the cedar of Lebanon wood evenly match the lid to the base. A firm-fitting lid completes a great job.



**CHRIS** used his session time to complete a long wooden spoon for stirring large quantities of jams and other goodies brewed in a big pot.



# GO the Chiefs

I am often asked about websites and where to find information about “stuff” relating to woodturning. The internet is saturated with information. Here are a few to explore.

[www.hwoodturners.org](http://www.hwoodturners.org)

[www.timberlywoodturning.co.nz](http://www.timberlywoodturning.co.nz)

[www.carbatec.com.au](http://www.carbatec.com.au)

[www.woodturnerscatalog.com](http://www.woodturnerscatalog.com)

[www.robert-sorby.co.uk](http://www.robert-sorby.co.uk)

[www.stilesandbates.co.uk](http://www.stilesandbates.co.uk)

[www.woodcut-tools.com](http://www.woodcut-tools.com)

[www.nativepens.co.nz](http://www.nativepens.co.nz)

[www.rarefind.co.nz](http://www.rarefind.co.nz)

[www.woodcraft.com](http://www.woodcraft.com)

**There are probably hundreds more to search. Go to Google, type in what you are looking for, press enter and *Voila! See what happens.***

*See you all next week*

*Cheers*

*Clive*