

Crosscut

Newsletter of the Witwatersrand Woodworkers' Association
PO Box 411346, Craighall, 2024

< Olive and Imbuia table by Alexander Wildervanck

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Next General Club Meeting on Wednesday, the 9th November 2011 from 18h00 at the WWA clubhouse at REEA. Greg Hirschson is going to talk about wood – everything you want to know! What wood does what, what the recent changes in weather have done to wood, how to dry wood, how to store wood, wood finishes.

Next Turner's monthly meeting is on Monday, the 7th November 2011 at 18h00 at the WWA clubhouse at REEA. Segmented turning by Ari Mansur.

News

Turner's Meeting

Rick Florence showed how to make a simple platter from a blank. He showed how to use a compass to mark off the circumference for rough cutting on the band saw. Using a spade bit, he drilled a recess for holding on a chuck to turn the bottom and make a recess for holding in a chuck to finish off the top. He also showed how to finish off the piece to show the wood at its best.

Main Club Meeting

Alexander Wildervanck spoke on veneering. Alexander is a member of the Pretoria club, and owns a factory that produces a variety of furniture. Their main income-earners are cupboards and kitchens, but it is the high-end furniture that excites him. He showed examples of these with some very impressive veneering. He spent 2 months on a course in the UK refining his skills before he opened up shop in SA. He uses a combination of commercial and his own machine-cut veneers, vacuum pressed onto the substrates. He showed us how he trims and locates the pieces, prior to gluing. Go to www.wildervanckfurniture.co.za for more information and images of his work.

Turner's spring challenge – Ken Mutch reports:

There was a very limited turnout at the Turner Spring Braai today, so if you were not there, you missed a fun and informative event. Dries turned a rather special goblet and earned a Builder's Warehouse voucher. The second voucher went to Frans who turned a rather simple "Tolletjie Brei" with some novel features. Others turned Christmas trees, Incense bowls, Artistic winged bowls, Spheres, Mushrooms, Potjiepot lid holders, Flowers???, etc. Everyone offered just a little insight into their turnings. Really a great learning event! Herman's wife Reiniet gave us some interesting insight into what constitutes an educational toy and Peter Middleton obviously deserved the bottle of red wine for his entry.

Some of the ten-minute creations are shown below:



Some ideas for turned toys are shown on the next page. Peter Middleton's car that won him a bottle of wine is shown. The strange looking object on the bottom right is a whistle made by Dries.

Club Notices:

Hardware Centre – Turner’s afternoon on the 5th November from 14h00 to 18h00. There will be 4 lathes running with a variety of demonstrations. Contact Kishore on 011-791-0844 or 082-456-6432 for more information. Please RSVP to Magriet on 011-791-0844. Boerewors rolls will be on sale.

Year end braai. This take place on Saturday, the 26th November at Greenside High School, starting at 11h30. Lunch will be at 12h00. Cost will be R40-per member, R45- for spouses and family

members, children under 10 are free. Each member should bring either a salad or a pudding, as well as any plates, cutlery and drinking vessels that they will need. Beer, wine, and soft drinks will be on sale. Alistair reminded members that we have set a target of 10 toys per member for the end of the year braai. Raffle tickets will be given to members who bring toys for donation, as well as for gallery pieces.



Wanted:

Drum-sander/ thicknesser and a good second hand table to do some seriously accurate work). If you are selling please let me know - Mel Miller mmgd@mweb.co.za

Re-furbishing an outside sleeper wood table. It would have to be rubbed down and re-oiled and also one of the legs needs some attention. The table is in the Glen Vista area and belongs to one of John Conn's customers (John is the asst auctioneer at our annual braai) Should anyone be interested perhaps they could contact John his e-mail address is

Johnconn@telkomsa.net

For sale:

ELU lathe for sale out of an estate. Price R2 500 including chuck for bowl turning and a hanging cupboard with chisels. Contact Paul.Moldovanos@gmail.com

Please Note:

Toymakers. The toymakers meet on the first and third Mondays of every month, at 09h00 till 12h00 at the clubhouse. **The last toymakers meeting is 21st November and we restart on the first Monday, 6th February 2012.** Contact Eddie Marchio on 011-678-8062 or renato@pixie.co.za for more information.

Wednesday Workshop. The Wednesday evening workshops are on the first and third Wednesdays of every month, from 18h00 till 20h00. **The last meeting for 2011 will be the 7th December. We will resume on the 18th January 2012.** Contact Winston Klein on 011-674-1513 for more information.

I'M AT HOME MOST SATURDAY MORNINGS
FROM 9-00AM TO 12-00 NOON
COME ALONG - BY ARRANGEMENT

- ❖ For coffee, biscuits and a chat
- ❖ No obligation to buy
- ❖ Creates good fellowship
- ❖ Word of mouth promotes sales

I have in stock a full range of Record Irwin Lathe accessories,
Record Irwin wood turning tools, Record Irwin hand tools,
Record metal/wood band saw blades
AND MY OWN WELL KNOWN JIGS

I CAN MACHINE TOOLING ACCORDING TO CLIENTS IDEAS, NEEDS AND DRAWINGS

Lionel Soekoe 60 Darwin Street CNR Bowling avenue Wendywood
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Advances in Grinding Technology for Woodworkers

Trevor Pope

Now that Shaun Sampson has taken orders for some Norton Global Force wheels, this is a good time to put these wheels in perspective.

Grey grinding wheels and sharpening stones have served us very well to date. They are cost effective and multi-purpose. The ubiquitous grey grinding wheel works very well for a multitude of sharpening tasks. There are variations of the grey wheel, so-called white wheels, pink wheels, ruby wheels, etc that have different formulations of grits and binders. Basically, the grits used in these wheels are all aluminium oxide (Al_2O_3) called Corundum, held together with ceramic binders.

Norton's Global Force wheel that Lionel likes so much is also basically aluminium oxide, with the grain size and characteristics optimised for grinding. Norton claim that the grit is a microcrystalline grit composed of scores of tiny crystals sintered together. These grains are designed to fracture in use to expose fresh sharp edges, so that the wheel remains sharp and "cool" grinding. This helps to avoid overheating of the edges of heat sensitive tools, such as those made from plain carbon steels.

There are a number of other grinding options available. There are some grinding and sharpening tasks that the grey wheels and stones cannot do well, so it is worth a look at what is available in the market.

To understand how minerals compare in hardness, we can look at the Mohs scale. (See http://en.wikipedia.org/wiki/Mohs_scale_of_mineral_hardness)

The Mohs scale was defined in for use in the field for identifying minerals by Friedrich Mohs in 1812. The Mohs scale ranges from 1 to 10. Talc is defined as 1 and Diamond as 10. It is very practical, so sample minerals can be carried in the field, to see what scratches what. As we are only interested in the harder minerals, I have only shown the range from 7 to 10. Visit the above link to see the whole table.

Mohs hardness	Mineral	Chemical formula	Absolute hardness	Image
7	Quartz	SiO_2	100	
8	Topaz	$\text{Al}_2\text{SiO}_4(\text{OH}^-, \text{F}^-)_2$	200	
9	Corundum	Al_2O_3	400	
10	Diamond	C	1600	

Quartz is the mineral found in old fashioned glass paper – relatively speaking, it is not very hard, which is why glass paper is not used much these days – it goes blunt too quickly. Corundum is much more effective. It is very cheap and can be made in all grit sizes.

Here is an excerpt from another useful table (also from Wikipedia) that contains most of the minerals we are interested in:

Mohs Scale	Substance or mineral
4 to 4.5	platinum, mild steel
5	apatite, cobalt, zirconium, palladium, tooth enamel, obsidian (volcanic glass)
5.5	beryllium, molybdenum, hafnium
6	orthoclase, titanium, manganese, germanium, niobium, rhodium, uranium
6 to 7	glass, fused quartz, iron pyrite, silicon, ruthenium, iridium, tantalum, opal
7	quartz, vanadium, osmium, rhenium
7.5 to 8	hardened steel, tungsten, emerald, spinel
8	topaz, cubic zirconia
8.5	chrysoberyl, chromium, silicon nitride
9-9.5	corundum(Al_2O_3), silicon carbide (carborundum - SiC), tungsten carbide (WC), titanium carbide (TiC), stishovite
9.5–10	rhenium diboride, tantalum carbide, titanium diboride, cubic boron nitride (cBN), boron
10	diamond
>10	nanocrystalline diamond (hyperdiamond, ultrahard fullerite)

Remember this only a ranking scale, not a measure of absolute hardness. It is useful, because if you want to sharpen a blade, the edge must be softer than the sharpening stone. Conversely, if you wish to cut something, the blade must be harder than the work piece.

The turners will sometimes complain that a particular wood blunts tools rather quickly. This may be because the wood contains silica. Silica has a hardness range of 6 to 7 on the Mohs scale, which is not much below the hardness range for the tools, which are from 7.5 to 8.

Aluminium oxide (Al_2O_3), found in the grey wheels mentioned above, is suitable for grinding most steels including High Speed Steels (HSS) that are popular with wood-turners. Tungsten carbide (WC) is a little too hard to be ground with Al_2O_3 . You can see why – they are of similar hardness. You can touch up a WC edge such as a masonry bit on an Al_2O_3 wheel, but if you have one, a Silicon Carbide (SiC) wheel is a better bet in practise.

Flat grey stones for hand sharpening in their cheapest form are grey Al_2O_3 and are quite effective, albeit usually a little coarse for a fine edge for a plane blade or a carving gouge.

The disadvantage of Al_2O_3 wheels and stones is that they wear down significantly. The wheels develop grooves and reduce in diameter, and sharpening stones dish in the middle. For a wheel, to straighten the grinding face, a dressing tool is used, ranging from the crudest – another piece of the same grey stone material or a star wheel dresser to the best – a diamond dresser. A star wheel dresser will de-glaze a wheel, and open up the grit, but it is not very precise, and rapidly wears away the wheel. A diamond dresser, which could be single point or multiple point tool, is capable of trimming the wheel to a very fine, accurate surface, suitable for the finest work.

When a flat stone is no longer flat, it has to be dressed manually, which is hard work. A glass plate with grit such as SiC (valve grinding paste) can be used. If you have one, a diamond plate can be used to grind away the high spots, until you have a uniformly flat surface.

Next month – alternatives to Grey Stones that address their shortcomings...