

Turning Times

THE OFFICIAL NEWSLETTER OF THE CASCADE WOODTURNERS

June 2014

Please make sure that all content for the next newsletter reaches me by the 5th of July! turningwood@bendbroadband.com Thanks!

**NEXT MEETING: 6:45PM, THURSDAY, JUNE 19th AT TABOR HEIGHTS UNITED METHODIST CHURCH (lower entrance, west side)
Stark Street at 61st Ave, Portland, OR**

NOTE: SCHOOL IS OUT FOR SUMMER VACATION
Cascade Woodturners will be meeting in a new location

Tabor Heights United Methodist Church
6161 S.E. Stark St, Portland, OR 97215

PRESIDENTS MESSAGE

Thank you Jim Hall for an informative presentation. Sometimes it is good to take a step back and think about the process for creating. To look at different options and hear that what works for one person is just one of the ways that it can be done. That we each will find our own methods and styles.

This month we are going to learn from Jerry Harris. Mr Harris is an accomplished turner who also has a very creative eye. Jerry will be showing us embellishments on his turnings. I look forward to seeing another facet on how to expand our craft.

Our meeting location is changing for the summer.

For the June meeting we will be at the Tabor Heights United Methodist Church. The church is located on Stark St. at 61st Avenue. We will be in the fellowship hall on the same level as the parking lot.

In July and August our meeting location will change once again. We will be at the Carpenters training facility. This is located just a block north of Sandy Blvd. at 158th Ave. The easiest way to get there is to get onto Sandy Blvd. and go to 158th. The intersection is a 'T' with a traffic light and a road headed north towards the Columbia River. Turn onto 158th and go 1 block toward the river. The facility is on the right hand side. The entrance to the parking lot is just off of the side street that is just prior to the building.

Looking forward to seeing you all.

Peter Morrell (971) 506 – 4770 MorrellPete@gmail.com

DALE'S CORNER

Open shop for June will be Saturday June 28th starting at about 9am. Bring your tools and an idea. We had a good turnout for May open shop with lots of chainsawing, a couple of bowls turned and a hollow form turned. This may be the last open shop of the year since I am planning on rebuilding the shop this fall. This opens the possibility for another member to host an open shop event this summer and fall. The mission of AAW and Cascade Woodturners is teaching new members how to turn. You will find it very rewarding to help new turners.

Thank you.

Dale woodbowl@frontier.com

SAFETY FIRST

The Force Is With Us!

That's a very good thing, because we need it. We need the force from the motors on our lathes to spin our wood very fast, so we can turn our wood into the seductive shapes we love.

It's pretty absurd when you think about it. We harness the power of at least a portion of a strong horse to spin wood at hundreds or thousands of revolutions each minute, and then we stick a piece of sharp metal into the wood and hope to control the result.

The control we want comes from managing the force of the lathe very carefully. If you watch really good turners demonstrate, it really can look like they just stick their tools into the wood – but they don't.

Although they often do it so quickly you can't see it, skilled turners actually put their tools firmly against their tool rests *before* they touch their tools to the wood.

If you don't place your tool firmly on your tool rest before your tool touches your wood, the least you will have is a catch. Worse, the tool may go flying out of your hand, you could knock the wood out of the chuck, and you could be seriously hurt.

The force is with us, but we need to control it.

If you have questions about turning safety or other comments please send them to me at CWASafetyOfficer@gmail.com. I will research them and let you know what I find out.
Harvey Rogers

WHAT A GRIND

By Jerry Klug

It's just not the same ole grind. There are many choices available to sharpen our turning tools that has become a bit confusing. I will try to describe the choices available as I have been asked by turners both new and not so new, what sharpening system to use. Another great resource is the AAW's DVD "Fundamentals of Sharpening" that shows tips by some well known and experienced turners.

To begin we will start with the inexpensive 6" double wheel grinder common at your local hardware store. Your dad had one and they are very plentiful on Craig's List and garage sales. The first question most often asked is whether the 3450 PRM isn't too fast. The surface speed is what counts. That is the rate the tool sees the grinding wheel going by. The 6" "high speed" produces 5420 feet per minute (fpm). This is about 60 mph. Not that this means anything other than a frame of reference that we are familiar with. An 8" "slow speed" grinder has a surface speed of 3600 fpm. The standard 3450 RPM eight inch grinder has a surface speed of 7225 FPM. As you can see, the 6" grinder should remove less material and importantly with less friction causing heat using the same grinding method than a standard speed 8" model but, more than an 8" "slow speed" grinder. The advantages to the common 6" bench grinder is a) low initial cost, b) lower cost for grinding wheels, c) smaller size and weight to move around and find space for in your shop and d) lower power consumption. Disadvantages are a) narrower width of wheels makes sharpening your Ellsworth grind bowl gouge require a lot of attention, b) low weight means less mass than a larger grinder so vibration or out of balance wheels impact you more and c) the wheels that come with the grinder are only for prepping welding clearances. The typical grey wheel should NEVER be used on cutting tools. It is too rough and is not friable. I will address wheel composition in a bit.

The 8" grinders come in 3450 RPM and 1725 RPM varieties. The 8" "slow speed" grinder is the favorite of most turners. It is a good compromise of speed and wheel width. They are seldom seen used and if they show up on Craig's List at a reasonable price they rapidly are sold. New ones will cost anywhere from just under \$100 up to \$1000 for an industrial Baldor. The higher the price you are willing to accept, with the smoother and heavier the grinder will be. Many of the lower cost units perform well. Just pay attention to shaft run out and smoothness of the unit when running. Standard or "high speed" grinders are adequate for our grinding needs with one caveat. Develop a really light touch

or you will overheat the tool. For carbon steel tools (old turning tools and all carving tools) if you darken (black or blue) the steel, you have lost the temper and you have to either re-temper the tool or grind back until the tool is shiny silver again. If I am using a “high speed” grinder, I also use a lot of cooling water dipping the tool into for cooling. High speed steel (HSS) can accept darkening from heat without losing their temper but it is better to keep the tool cool by grinding with a light touch. Sharpening with pressure on the tool not only heats the tool but rapidly wears both the wheel and the tool. Eight inch high speed grinders can be found used and new ones are not too expensive. A name brand can be had for under \$150.

Wet grinders can be another alternative that come in 8” and 10” varieties. There are a few brands on the market, Grizzly, Jet, Scheppach, Tormek and others. I will discuss the 10” Tormek as I am familiar with that model and it has been around the longest. It is expensive and seldom found used. The wheel is unique that you can prep the surface with a “grading stone” to change the surface grit for roughing and finishing. The grinder rotates at 90 RPM in a water bath trough. The tool never heats up so it is great for carbon steel carving tools. The surface finish is very smooth and after using the leather stropping wheel (on the other end of the grinder shaft) your tool will have a near mirror bevel. An acute angle as found on a skew, gouge or detail tool will slice paper without tearing. You could even shave with the skew. Drawbacks are that you need additional fixtures to mount the tools and doing any shaping takes a LOOOONG time.

Flat bevel sharpening can be a good potential. Many woodturners may already have a stationary belt sander. If so, and you enjoy building jigs, this may be for you. There are plans on the internet and videos on YouTube as well as an article in The American Woodturner to assist you building the tool holding jigs. You will have to construct a tool holder that keeps the bevel in the correct position while riding on the sanding belt. One big advantage is that you can easily change the surface finish by changing belts. Having a flat bevel compared to a radiused bevel is preferred by some turners. It all depends on what you are used to. If you want to use a flat bevel yet are not excited about building tool holding jigs, then there is an app for you. That application is the Sorby Pro Edge Sharpening System. It does it all for a pricy sum. To be fair it is less than a Tormek system and probably comparable to a good quality 8” “slow speed” grinder with a sharpening jig system. I have seen the system demo’d and it does all the ads claim.

There are some interesting sharpening systems that are less conventional like the StaySharpe that uses a disc with slots in it so you can view your cutting edge as it is being sharpened. It may be good for some sharpening but again that Ellsworth bowl gouge looks like a challenge.

Now a very brief discussion on sharpening jigs for bench grinders. There are currently choices for a tool holding jig but, not too long ago there was only the Ellsworth jig and the Wolverine system by One Way. The Wolverine is a really good and sturdy system. Most others on the market are suitable as well. You can’t go too far off the path with any of the systems out there. If you want to look at some of the other tool holding set ups, you can try Tru-Grind by Woodcut, Sharp Fast, Big Guy Productions, Johannes Michelson or

Raptor. For adjustable platforms for grinding scrapers or hand held grinding look at OneWay, Stuart Batty, Reed Gray or Veritas/Leigh Valley. A web search will find numerous homemade sharpening aids and some are as good as the commercial ones but cost only time and scrap materials.

Now let's look at the wheels themselves. As I mentioned before, never use the hard non-friable gray wheels that come on most grinders. The most popular wheels used by turners are friable (the wheel wears instead of clogging with steel) aluminum oxide ceramic grinding wheels. They are classified by their hardness and coarseness. For tool steel, the hardness should be midrange noted by a letter between I and K. The grit in the 36 to 48 range is usually a roughing or shaping wheel. For a smooth finish the grit will be in the 80 to 120 range. The finish smoothness of the tool is often a personal choice. I like a polished look to my tool bevels. Some bowl turners like a more serrated edge for roughing green wood. Ceramic wheels can be balanced by either trial and error of rotating and tightening the wheel and see if it stops at the same place. This works if the wheel has pretty good balance when manufactured. If you have one inch mounting holes in the wheel, you can use a One Way balancer system. This is a hub system to match your 1/2", 5/8" or 3/4" motor shaft with adjustable weights. With a trued and balanced wheel, grinding turning tools becomes a much nicer task. No bounce and better control of the edge shape. The following 6 min. video is by Ernie Conover showing his recommendations for tuning up your grinder. <http://www.youtube.com/watch?v=7OoqJN2L4Y>

The "new kid on the block" is the Cubic Boron Nitride (CBN) wheels which will fit most bench grinders. The CBN is a metal wheel that is balanced and electroplated with abrasive CBN particles. The CBN wheels cut faster, cooler and can be washed in the kitchen sink. Why would you wash it? Because your tools often have a buildup of pitch, gum and resins from the wood that will collect on the CBN wheel. The CBN wheels are not meant for brass, carbon steel or other soft metals as that may gum them up too. I know one creative turner that used his CBN wheel on soft metal and just flipped the wheel around and then ground a HSS tool to clean the wheel. Switching to a CBN wheel from a ceramic one takes a bit of a learning curve as they remove tool steel so much faster. That light touch is necessary or you will be replacing all your shortened tools. The choice of wheels is pretty good now. You can get 6" and 8" wheels in a variety of widths and even edge choices. Two big drawbacks are cost and weight. The CBN wheels currently cost from \$150 to \$250 each. **If you** have a bargain grinder motor the heavy wheel may overload the starting ability of your motor. You can avoid damage if you remember to hand spin the wheel just before you turn the motor on. One potential drawback that is recently being discussed is metal dust. See the last paragraph on grinder safety for more on dust.

Last on the wheel material list is diamond impregnated wheels. These are really for very hard materials like carbide, not HHS. Some of the diamond wheels require lubrication for normal wheel life. That can be a lot of oil or water spray. The diamond wheels are also quite pricey and with the popularity of CBN the interest in Diamond wheels has waned.

Let us not forget about SAFETY!!! Use eye protection whenever you're grinding. Whatever wheels you use, make sure the nuts and washers hold the wheel tight. On any ceramic wheel, always use an encircling guard. If a wheel comes apart, it must be contained by the guard. Never grind on the side of a ceramic wheel. In Great Britain you must be licensed to use a grinder in commercial shops and it is a CRIME to grind on the side of the wheel. For any wheel material, keep the lower platform very close to the wheel. Nothing you are working with should be able wedge between the wheel and the lower platform or safety shield. Remember that ceramic wheels we use are friable and the dust has silicone in it, dangerous for your lungs. Good ventilation is a must and dust protection should be used. Attaching a Shop-Vac with the hose going through a water trap in a 5 gal bucket is a simple system. Since the CBN wheels are becoming popular, there have been reports of fine metal dust collecting on surfaces around the grinder. These metal particles are small enough to be damaging to your lungs. One proposal is to mount strong magnets near the wheel to attract floating metal from your tools. One last item on safety is to check for a cracked ceramic wheel. It may not look damaged but if it is, it will come apart at speed. Look at this video and see how easy it is to check your wheels for cracks. http://www.youtube.com/watch?v=52n8_-6cooY

Whether you "hand grind" or use a jig, whether you are using a budget yard sale grinder and homemade jigs or the latest high tech sharpening system we all need to use sharp tools. The equipment we choose is only a choice of convenience and cost. Any of the above equipment will do a good job of providing you with a sharp tool if you learn how to use it properly. If you would like more information, come to a meeting and ask for opinions and you will get many. The most important one is to learn to use the equipment that you choose and keep those tools sharp.

GRINDER STAND

By Kathleen Duncan

I've had my grinder on a portable workbench located just a few steps from my lathe. The bench was taking up too much valuable real estate in my shop and was not terribly sturdy. Although there are a number of fairly inexpensive grinder-stands available, I wanted my stand to include some storage, so I built my own.

For the base, I made a 16"X16" box out of 2X6's. I put a 3/4" plywood bottom on the box. Next I filled it with about 40lbs of Quikete. The stand column is about 8.5" x 8.5" x 27" – I'm vertically challenged so most woodturners would have their stand somewhat taller than mine. JoHannes Michelsen recommends that the grinder be high enough so you can see the grinding operation. He mounts the grinder so that the grinder base platform is about elbow height. To allow for storage, I cut 1/4" dados 2 1/2" apart on the inside of the sides. To have the slots line up, I cut the dados into a piece of plywood twice the width of the sides. Then I cut the sides apart. I cut rabbets into the back and then glued and screw the stand together. I screwed a 3/4" plywood top to the base and then made cleats to fasten the stand to the base. The column top is another piece of 3/4"

plywood screwed into the stand. Before attaching it, I rounded the corners and rounded over the top edge.

The drawers are made from $\frac{1}{2}$ " plywood. The drawer bottoms are made from $\frac{1}{4}$ " plywood. The drawer bottoms should be wide enough to go into the dado slots but not so wide that they bind. To keep chips out of the drawers, I added a door to the stand. I applied a couple of coats of polyurethane. Since my grinder is bolted to another piece of plywood with the jigs attached, I just put the grinder/plywood on top of the plywood that is screwed onto the stand and clamp it in place. This allows me to take the grinder out of the shop, if the need arises.

Finally I added a "shower" curtain. My grinder is in the line of fire when I'm turning wet wood. The shower curtain is simply a piece of clear shower curtain sandwiched between a two pieces of wood and fastened to the wheel guards on the grinder. Bamboo skewers on the top edge of the curtain keep the ends of the curtain from dipping down and possibly contacting the wheels. The curtain can be rolled up or simply draped over the back of the grinder when it's not needed.

I bought a sheet of $\frac{3}{4}$ " plywood at Shurway Lumber in Vancouver. They usually have a stack of seconds for about \$25/sheet. This is actually less expensive than their regular plywood. What I bought is finished on two sides. One side is birch and the other is red oak.



MONTHLY CHALLENGE

The June challenge is to carve a turning. Show how you can embellish your work.

MEETING SCHEDULE 2014

DATE	DEMONSTRATOR	CHALLENGE
JUN 19	<i>Jerry Harris – Surface enhancement</i>	A Turning with Carving
JUL 17	Graeme Priddle	Turned Bird House (real or ornament)
AUG 21	Tool Swap	Tool Swap – No Challenge
SEP 18	TBAL	
OCT 16	Auction	No Challenge
NOV 20	Stephen Hatcher	Christmas Ornaments

Note some open spaces for our local turners to demonstrate.

MAY MEETING

Jim Hall walked us through a number of the processes he uses to finish his turnings. He described texturing with different burrs in both a Fordom/Dremel tool and a micro motor. His works also showed coloring with dyes and acrylics. Jim also showed what you can do with a high speed air tool for texturing and piercing.

Jim often mentioned using safe practices when working with the texturing power tools. Always hold your work piece in a stable mounting. That may be a carving vice that holds your chuck mounted turning or even on your lap while wearing a leather apron and supporting the work piece on a carving bag. There was a lot of discussion between the members and Jim during the demo. This indicates the interest in adding embellishments to our turnings.



Some of Jim's previous work.

JUNE MEETING

Jerry Harris has been asked to do a demo on bowl decoration. Jerry will be doing some different ideas on embellishments with bowls. Here are some examples that Jerry has perfected.



Come and share Jerry's ideas and experience.

COMING EVENTS

July 17th - Cascade Woodturners – Graham Priddle (watch for class info)

July 26th - 2014 Creativity in Woodworking Symposium – Nick Stagg and Trent Bosch demonstrating, Woodturners of Olympia, Lacey, WA, Contact Al Price 360-791-0396

July 27th-30th - Woodturners of Olympia – Trent Bosch hands on classes

August 14th – 17th – Frogwood Collaborative – contact Pacific Northwest Woodturning Guild

DEMOS - CLASSES – SEMINARS

Multnomah Arts Center 503 823 2787 Jerry Harris is the instructor at upcoming intermediate turning classes at Multnomah Arts Center for ages 16 and up. . There is a one day class July 12 from 10 to 2 and a two day class July 19 and 26 from 10 to 2. To enroll, call or google MAC. The cost is \$50 for the single day session and \$90 for the two day session. All tools and materials are provided. Bring your own tools if you wish.

Rockler Woodworking 503-672-7266, www.rockler.com

- What's Turning Day, July 12th, 11:00

Woodcraft 503-684-1428, www.woodcraft.com

- Easywood Tool demo, Sat June 28th 1:00
- Beginning Lathe Turning by Tim Kluge, \$125, Sat Jun 28th 10:00-4:00
- Basic Bowl Turning by Paul Rasmussen, \$125, Sun Jun 29th 10:00-2:00
- Turning Wooden Spheres by Mike Meredith, \$125, Sat July 5th, 10:00-4:00
- Pen Turning, \$40, Sun July 6th, 12:00-3:00
- Turning Bottle Stoppers demo, July 12th 1:00
- Square Edge Bowl Turning by Tim Kluge, \$150, Sun, July 27th, 10:00 - 4:00
- Yo-Yo Turning, \$125, by Colin Leland, Sat, Aug 2nd, 10:00-2:00
- Beginning Lathe Turning by Tim Kluge, \$125, Sat Aug 16th 10:00-4:00
- Bowl Turning Basics by Tim Kluge, \$125, Sun, Aug 17th, 10:00 - 4:00
- Turning Wooden Spheres by Mike Meredith, \$125, Sat Aug 23rd, 10:00-4:00
- Pen Turning, \$40, Sun Aug 24th, 10:00-3:00
- Square Edge Bowl Turning by Tim Kluge, \$150, Sun, Sept 7th, 10:00 - 4:00
- Yo-Yo Turning, \$125, by Colin Leland, Sat, Sept 20th, 10:00-2:00

Woodcrafters 503-231-0226, 212 NE 6th Ave, Portland, www.woodcrafters.us

- Segmented Woodturning Demo by Joseph Stanchfield, Sat. June 7th 10:00 – 3:00

CWT MENTORS

Cascade Wood Turners has a mentoring program and the member turners providing assistance are listed in the “Resources” section of the web page <http://www.cascadewoodturners.com/resources.htm>. These members are available for you to contact if you need help in different areas of woodturning. If you would like to be a mentor yourself and be contacted with woodturning related questions e-mail me at turningwood@bendbroadband.com and I will add you to the list!

QUICK LINKS:

There is a listing of web links used by club members in the “Resources” section of the web site <http://www.cascadewoodturners.com/resources.htm> . If you have a favorite or new site that would be useful to club members, e-mail it to me to include it with the list. turningwood@bendbroadband.com

SYMPOSIUM SCHEDULE

There is something planned for every month that may match your travel plans:

- AAW 28th International Symposium, Phoenix AZ, June 13-15, 2014
- Woodturners of Olympia, Olympia WA, July 26, 2014
- Turn On! Chicago, Mundelein, Ill, August 15-17, 2014
- SWATurners Symposium, Waco, TX August 22-24, 2014
- Ornamental Turners International Symposium, Columbus OH - September 2014
- 15th Rocky Mountain Woodturning Symposium, Loveland, CO September 12-14, 2014
- Turning Southern Style XX Symposium, GAW September 19-21, 2014
- Segmented Woodturners Symposium, San Antonio, TX October 16-19, 2014
- 6th Annual Wisconsin Woodturners Expo, Eau Claire, WI October, 2014
- Ohio Valley Woodturners Guild, 2015
- Oregon Woodturning Symposium, Albany, OR, March 6-8, 2015

If you hear of an interesting symposium, e-mail Jerry Klug to add it to the list.

COMPANY STORE

If a number of members want a certain item, and we could be low on it. Please contact Jim Piper, (503) 730-0073 jimpiper@me.com a week ahead of the meeting so he could verify it is not out of stock and set it aside for you.

Company Store Item	Price
Accelerator (for Cyanoacrylate adhesives/CA), sprayer, 8 oz	\$7.00 each
Anchor Seal, one gallon	\$14.00 each
Cyanoacrylate adhesives (CA) - Thin, Medium and Thick, 2oz bottles	\$5.75 each bottle
Sandpaper – Finkat (for dry sanding)	\$0.75 each sheet
Sandpaper, Klingspoo alum/oxide w/heavy cotton cloth backing suitable for wet sanding (80, 100, 120, 180, 220, 320 & 400 grits)	\$1.25 each sheet
Walnut Oil - filtered, 16 oz	\$4.00 each

Jim is in need of gallon jugs for the Anchor Seal. No milk jugs as they are not sturdy enough.

CLASSIFIEDS

To place or continue an ad, contact Jerry Klug at turningwood@bendbroadband.com . We will run ads in the next newsletter after receiving your ad. Let us know if you want your ad continued more than one month.

FOR SALE: Heavy duty Jorgensen bar clamps. The 7200 series clamps with the steel I-bar. The 24" ones are \$20 each, the 36" and the 48" ones are \$25 each. Contact Howard Borer if interested. howardborer@yahoo.com

FOR SALE: Oregon Burl and Blank

- Hardwood and softwood burls
- Hollow form turning wood
- Pen blanks
- Bowl blanks
- Cut to order

Recently sold and/or current material - Douglas Fir root burl, Maple burl slabs, Cherry burl bowl blank, Madrone pen blanks, dimensional rough sawn Cherry boards ,Madrone, Pacific Yew , Oregon White Oak, Black Walnut , Oregon Ash

For pricing and pictures call Brandon Stadel 503-409-5677 brandonstadel@yahoo.com

TURNING JOB POSSIBILITY

My name is Daniel Quitugua. I represent a small group of islanders, from the island of Saipan. We're hosting a Labor Day softball tournament. I need some trophies made, they're not the typical style trophies, we'd like to have the trophies look like Latte stone carvings.

We need 9 made out of solid wood 6" in diameter at the top and tapered down a little at the bottom. One would be 3ft tall and the remaining eight would be 2ft tall all stained and on a base that we can put little plaques on recognizing placement in the tournament.

Please let me know if someone could do this.

Thanks. Daniel Quitugua
bigstunna670@gmail.com

Photo of Latte Stone



FOR SALE: The cover of American Woodturner two issues ago had a picture of a bunch of finials and there was an article about turning them. It included a description of a very handy gadget that fits in the tailstock and has a bearing in the end that supports the tip end of the finial after you've turned it. I've made two of the 3/16" and two of the 1/4" sizes. They are for sale for \$40 each. I'll have them at the May meeting so find me if you have any interest.
howardborer@yahoo.com

FOR SALE: JET 1442 VS lathe – It has mechanical variable speed, the headstock slides and rotates, 14” swing and 42” bed. The lathe is in very good condition with the normal original accessories. Total weight is approximately 420 lbs. Price: \$750

Delta model 46-250 midi lathe with bed extension and includes all normal original accessories. Lathe is in very good condition, bed extension has never been set up. Price: \$225



Larry Germann – 503-789-4670

FOR SALE: 5hp Baldor super efficient motor, 230-460 volt with inverter/ variable frequency drive, hand-off-auto disconnect and contactors in dust proof and filtered enclosure. The VFD is a Titan CI-005-G4. Cerus is the manufacturer of Titan drives. Perfect for building your dream lathe! Top quality American union made parts, cost over \$1500 new. Make a reasonable offer. Professional Electrical installation also available. Email evonbeck@gmail.com



WANTED: New Wood Turner looking to buy your old neglected wood turning tools. Hoping to find HSS spindle gouge, bowl gouge, roughing gouge and parting tool. Contact Reid at 720-236-4968 or reid.lustig@gmail.com

FOR SALE: Over 18 tons of interesting turning wood logs and chunks in Vancouver;

<i>Apricot</i>	<i>Carob</i>	<i>Magnolia</i>
<i>Avocado</i>	<i>Cherry</i>	<i>Maple (big leaf)</i>
<i>Black locust</i>	<i>Elm</i>	<i>Maple (hard)</i>
<i>Black walnut</i>	<i>English laurel</i>	<i>Norway maple</i>
<i>Blue spruce</i>	<i>English walnut</i>	<i>Ornamental mulberry</i>
<i>Bottle brush</i>	<i>Juniper</i>	
<i>Camphor (Calif. Bay Laurel?)</i>	<i>Liquid amber</i>	

Tim also has dried boards and blanks for turning of;
Mahogany, Olive, Chestnut, Redwood, Walnut, Maple, Oak, Purple heart and more.
 Tim also has some *rocks and fossils for accents.*
 Prices are about half of retail (i.e. Cook Woods or Craft Supply).
 Contact Tim at wtsmall@centurylink.net 360-989-7721.

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Support of the sponsors listed helps maintain our hobby supplies. Remember that your current membership card is good for discounts at these firms. For additional information see the website <http://www.cascadewoodturners.com/sponsors.htm> .

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Happy Woodworking to you! Les and Susan!