FINISHING SECRETS . . .

12. Coloring Wood Turnings with Aniline Dye

Wood can be colored with chemical or natural stains and dyes in solid or mixed colors, and accented with gilt, liming wax, or patinating wax in an unlimited number of variations. If you want to know everything there is to know about coloring wood, get a copy of the book, *Coloring Techniques For Woodtrurners*, by Jan Sanders. It may be out of print, but there should be an AAW Chapter library or a fellow woodturner with a copy that you can borrow.

The following is a summary of the techniques, and a discussion of the areas that can cause problems. The presentation describes a piece that is first dyed and then the grain is accented with either a gold cream, or a white liming wax. Either the dyeing or the accenting can be used separately for different effects.

Dyes and Stains

Traditionally, the difference between a dye and a stain is the size of the color particle. Stains are very large insoluble particles that are worked into the open spaces on the surface of the wood. Dye particles are near molecular in size, are soluble, and occupy the open spaces in the cellulose structure of the wood. For a comparison, if the dye particle were the size of a BB, then the pigment particle would be the size of a pickup truck. Since it is in the wood, the dye is more transparent and doesn't mask the wood grain and texture like pigments that remain on the surface.

These definitions can get confusing because there are prepared stains that contain dyes, and wood colored dyes can be used in place of the traditional stains.

Dyes are classified by the liquid that is used as the solvent - water, alcohol, or oil. The water-soluble dyes are ideal for wood turnings because of their color brightness and clarity. They are more colorfast, easy to apply, can be removed from our hands with repeated use of soap and water, and are compatible with the oil and lacquer finishes. They are also very slow drying, making it easy to apply an even coloring without overlaps. Colors can also be easily blended through a transition, such as a yellow/green/blue, or blue/purple/red.

The water will raise the grain of the wood surface, but this is a minor problem with a simple solution. The aniline dyes distributed by Craft Supplies are made by Libron and they are of good quality for about $3.00 per ounce.

While not raising the grain, alcohol and solvent soluble dyes dry too fast to apply a primary color over large areas without having visible overlaps. This faster drying makes them a better choice when a sharp color separation is desirable such as for grain painting, stenciling, or artistic forms.

Blackberry juice, burgundy wine, and boiled walnut husks are sources of natural dyes. I have not had any success using Rit® or similar dyes made for cloth. These dyes are a heat-setting type and must be boiled into the material being dyed, and I have never found boiling to be a good technique for finishing wood.

A third method for coloring wood is by a chemical reaction of various solutions with the wood itself. An example of this technique is that of Ebonizing. The reaction of the tannins in the wood with a solution of vinegar and dissolved iron particles will impart a black color to the wood. Other reactions will create other colors. These techniques will not be a part of this discussion.

Mixing The Dye Solution

The dye powder should be dissolved in warn (150ºF) distilled water - ½ ounce of dye in ½ pint of water is a useful ratio that will yield a strong solid color. The dye solution can be diluted later if a more transparent color is desired. If you don't have a scale, then one (1) level Tablespoon is close enough. Mix well, cover the jar, and let it cool. Strain the solution to remove any sediments before using.

Selecting The Wood

Any wood can be dyed any color. The wood should be bleached before using the light or transparent colors such as the yellow or red. If the grain will be accented, then use a strong open grain such as Ash or white oak.

Dyeing The Wood

Dyeing the wood will take a total of about 30 minutes, spread over a time of 5 to 7 days. An overnight wait every time the wood is wetted will insure that it is thoroughly dry for the next step. The following discussion is based on a solid uniform coloring of the turning.

Day 1 - Preparing The Wood

The wood surface has to be smoother than for any other finishing technique. The dye will accent every surface blemish, including torn grain, tool marks, and sanding scratches. But, natural defects and bug holes can add character to the wood. The wood should be bleached before applying yellow or red. The wood bleach made by Kleen-Strip® will give good results without a lot of effort.

Wet the surface of the wood with a damp paper towel while it is spinning on the lathe. Set it aside until the next day so that it is thoroughly dry. Surface dry isn't good enough.

Day 2 - Final Sanding & First Dye Coat

Sand with 600-grit or steel wool to just remove the surface fuzz that was raised from the water. Sand in both directions to get a really smooth and whisker-free surface. Any more than this will expose a new surface. With the piece in the lathe, lightly moisten the wood surface with a damp paper towel, and then apply the first coat of dye. If the end color will be black, this first application should be a dark blue. This will color-correct the black, and prevent the formation of a bronze glaze on the surface. A sponge brush is an excellent applicator. Dip the handle in the dye to identify the brush after using it, rinse it out, and save it for the next time.

Spin the wet turning in the lathe and remove all excess liquid with a paper towel. Be careful not to throw dye around the room.

Day 3 - Second Dye Coat

Put the piece in the lathe and burnish the surface with a dry paper towel. This removes any loose dye from the surface, and should be done after every application. Moisten the surface with a damp paper towel and apply the second coat of dye. If the end result is to be black, then this is the first coat of black dye. If the final color will be the same as the first, then this will be the final application of dye. Burnish the surface with a soft paper towel while it is still wet.

Day 4 - Third coat of dye

Repeat Day 3 if the final color will be black. If not, go to the next step.

Day 5 - Enhance The Grain

Buff the dyed surface with a clean paper towel. The same technique is used for all accenting colors. We have not put any finish on the wood because we want the grain to be open to be filled with the coloring wax. A coat of Danish Oil can be applied and allowed to dry before continuing. This will seal the dyed surface without filling the grain. Do not use a film finish such as lacquer or a varnish.

Spread the grain accenting color over the entire surface. I like to use gold gilt cream or white liming wax. Fingers are the best applicators.

Let the piece sit for about 15 minutes. Then spin the piece in the lathe and remove the excess color from the surface with a soft cloth that has been dipped in a liquid wax or an oil/varnish wiping finish. Follow this 2 or 3 times with a clean dry paper towel. When you are finished, you will know why the earlier warning about tool marks and torn grain. Set the piece aside for 48 hours.

Day 7 - Applying A Finish

We have several choices of finish. We can apply a liberal coat of paste or liquid finishing wax to the entire surface. Spin the piece in the lathe and wipe the surface with a clean towel while the wax is still wet. DO NOT use a hard finishing wax stick because it will abrade the dyed surface and remove the dye and grain enhancing wax.

Or, we can spray on a light coat of Deft®.

Or, we can apply a Tung Oil finish such as Waterlox® or Gillespie's®. Use Watco if there is nothing else available. Do not wait; wipe it off immediately with the piece spinning in the lathe. Done! Hold it up and admire!

Some Things That I Have Learned (The Hard Way)

They may be a bit more expensive, but Libron® aniline dyes are excellent. So are all of their other products. Check out their web site at http://www.woodfinishsupply.com/ . Craft Supplies sells Libron dyes.

Whenever I refer to a soft cloth, I have found Viva® to be softer and more absorbent than other brands.

Use distilled water because the metallic salts and chlorine in tap water will change the color and reduce the shelf life of the dye solution.

The shelf-life of the dissolved dye is from 6 months to a year. Store it in a

closed Mason jar in a cool dark place. Throw it out when a bronze colored film forms on its surface.

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