# Hidden colours of the woods - The natural dyes of trees

**Fay Jones, The Woodland Haberdasher**

***Written November 2023, published in the winter edition of The Bodger's Gazette – January 2024***

When people tend to think about natural dyes their thoughts seem to go one of two ways – straight into the bright primary world of weld, woad and madder or to the kitchen compost bin for onion skins and avocado stones. However, there is a large group of dye rich plants all around and in plain sight.

It might seem like an odd pairing of crafts, dyeing and green wood carving, but especially with access to bark from larger branch wood and trunks which tend to be much more dye rich than twiggy branches, it seems a shame to leave such a great resource on the workshop floor or destined for the wood burner.

Tree dyes essentially fall into two categories – flavonoids and tannins. There are other compounds at play but for the beginner this is the best distinction to draw.
Tannins are generally found in barks, flavonoids in leaves, but of course there are exceptions. Don't let this fool you into thinking that this is just yellow and brown[1], there are some pinks and oranges also be had, and with modification they can easily be nuanced into russets, burgundies and plums. Some greens are also to be found but you'll have to time it just right!

Where tannin is present in the dye substance a fixing agent (mordant) is not required, the various tannins do this job. Dyes that do not require a mordant are called direct dyes.
However, you can shift the colour of direct dyes by using mordants. The most common 3 are alum (aluminium potassium sulphate), iron (iron sulphate or green vitriol if you are of a more alchemical bent) and copper (copper sulphate or blue vitriol). All these serve to increase light fastness and wash fastness. Alum brightens colours, it Tango-s teracottas, makes chocolate browns caramel and turns raspberry sorbets to strawberry sauce.
Iron, in contrast, acts as a 'saddening' agent and is usually used after the initial dyeing to darken colours.
Copper is used to make colours both brighter but differs from alum in that is adds a richness and depth of tone so instead of pink think burgundy, russet instead of tangerine and old gold rather than custard yellow.

## Yellows

All flavonoids require an alum mordant to make the dyes lightfast and washfast, and also to lift the colour from scrubby dish water tones to bold golds and luminous lemon peels. Ideally fibres should be pre-treated so maximum absorption of dye takes place but you can certainly get away with an all-in-the-pot-at-once method too. Where there is also some tannin content in the dyestuff it is best not to let it sit in the dyebath too long as the flavonoids are released first then the tannins, and tannins will dull and darken the yellow.

Yellows are the most numerous natural dye clan, and in trees they are mostly in the leaves. The boldest[2] yellow comes from birch leaves and it serves as a good stand in for the more traditional yellow dyes like weld and dyer's broom. Other good yellows from can be found in the leaves of cherry (sunshine), alder (warm gold), elm (sunflower).

Apple is an interesting one, where the colour is the same across bark and leaves. Typically, it should be the colour of a Bee Eater's chin but expect tones anywhere from butter to saffron dependant in the fibre. Consider it strong, and very capable of dyeing vegetable fibres without a pre-treatment.
Ash bark is never very strong, producing a pale straw colour, but which turns to a charming pea soup green with the addition of wood ash (strong alkali).

---

[1] Although I have been politely told brown is not a colour [thanks David . . . ], and is in fact a composite colour, effectively a darker shade of orange. For the purposes of natural dyeing, brown is totally a colour. It's an irritating little fact that randomly pops up in my brain from time to time, best with these things to spread them around.

[2] A friend of mine refers to the shade from birch leaves as Kerpow! yellow which is both accurate in terms of its brightness and that it looks like the colour of a comic book sound effect balloon.

**Brown**

- Walnut – All parts of walnut contain dye; green shells, leaves and bark are all good to use. They do contain tannins but the main compound is juglone which is closely related to lawsone which is found in henna. Used since antiquity, noted by Pliny.
- Oak bark is lovely as it often has a pink/reddish tint to it. It is dye rich.
- Oak galls (marble, knopper, oak apple) contain a different kind of tannin which is great for vegetable fibre pre-treatment but not for straight colour. If used as dye it will be a pale buff-yellow.
- Hazel, sea buckthorn, sweet chestnut and hornbeam bark all dye a nice buff-mid toned range of browns.

**Orange**

- Alder bark is a reliable but muted, very much in the area of foxy-oranges. Dark peaty browns are achievable with a double dye and the addition of copper or iron. One of the historical sources of 'poor man's' black.
- *Prunus* species barks generally belong to the ombre of orange. There are distinct tonal differences as well as with the concentration of dye present. Cherry is the most vibrant. Plum is more of a rich, hot orange and blackthorn has a rich softness to it, which can produce fine corals akin to Bulfinch plumage.
- Willows are a bit of a Heinze 57 and the bark can be pink, tan or orange depending on species or variety. True sallow is always pink and weeping willow so far seems to be consistently orange . . .

**Pinks**

Of all the tannins the pinks are the least light fast, even with the addition of mordants, although it does depend from tree to tree. Sometimes the bark might just not have a high concentration of dye in it, even if a closely related tree does (sycamore vs. field maple for example).

- Beech and field maple barks are strong pinks with good light fastness.
- Pear bark is the pink equivalent of blackthorn, in the right conditions producing a wonderful soft pink not found in other barks.
- Lime, hawthorn and elm are an interesting little group that produce pink when fresh but if the bark is dried and used later, seem only to be orange. Something lost in the drying process. The inverse seems to be true of quince bark though.
- Rowan, silver birch and alder buckthorn barks are also a good source of pink.

**Greens, russets, burgundies and purples**

All tannins react in the presence of iron, essentially the same reaction that happens when a wood is 'ebonized'. Brown tannins go to dark brown or grey, pinks to purple and oranges to brown. The 'saddened' colour will depend on the tone of the original one. Dark pink will go battleship plum but if you start with amore pastel shade then you can expect lilac. The reaction is quick (literally seconds) so you will need a bucket of cold water on stand by to stop the reaction if you want something more subtle than grey!

The addition of copper to pink tannins will give you a range of burgundies, wines and puce. Copper will take oranges towards red, maroons and cognac.

Natural green is quite elusive and when it does appear it is really a yellow masquerading as a green. Historically good quality greens comes from over dyeing blue with yellow but you can also 'sadden' a yellow dye with iron. There are generally no tannins present so the reaction takes longer, up to about 45 mins. Again, the original yellow will dictate the green. Pastel yellows will become sage-y greens where as bright daffodil yellows will go much mossier.

**Brief natural dyeing notes –**

- Natural colours develop best on animal fibres (although not all animal fibres react the same!), double or triple over dyes may be needed to attain same shades on vegetable fibres as well as some extra pre-treatment.

- The best way to get confident is to just play around and try not to be too attached to the outcome (easier said than done!). Until you decide to put some wool in it, what you've essentially made is a saucepan of bark tea.

- The colour guide described above refers to dye material gathered fresh. It can be dried and stored ready for later use (in paper bags), but must be gathered fresh!

  - There are many ways to dye fibres and methods can be as simple or as complex as you choose to make them. Recipes can be found online or in the beginner books noted below.

- Check mordants and safety as per the recipe you are using. Particularly the mordant/metal of your dye pan combo. If in doubt, use stainless steel. If metallic salts are not your thing there are home-made versions of copper and iron sulphates that can be made in jam jars with white vinegar, scrap metal and water (making acetates).

  Books for beginners – A Dyer's Manual by Jill Goodwin / Wild Colour by Jenny Dean
  Book for serious students – Natural Dyes by Dominique Cardon
  Books that are delightful – Dye Plants and Dyeing by John and Margaret Cannon / The Dyer's Handbook – Memoirs of an 18th Century Colourist by Dominique Cardon

# Tingo Ergo Sum

Photos – Shades of Elm, leavs and bark, on wool yarn and cotton fabric for comparison

3 tones of Sea Buckthorn bark with alum (fawn, copper (maroon) and iron (dark brown).

Wool selection dyed in  apple bark (left) and purging buckthorn (right). All put in the same respective dye bath with the same mordant, the variation in tone is achieved through different yarns.