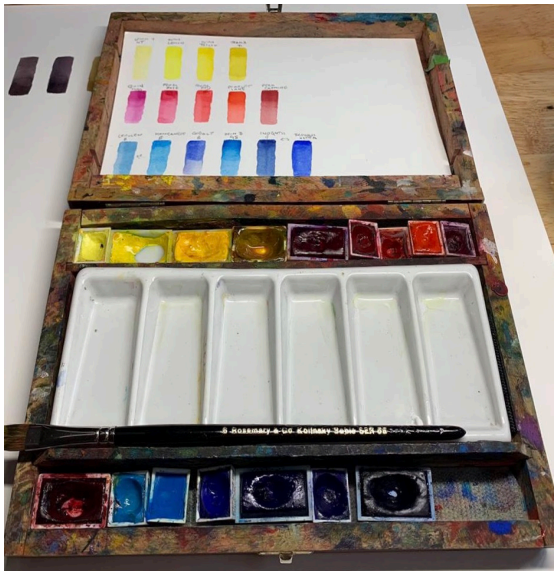
Colour Mixing and the Colour Palette

by Dianne Sutherland

How Many Paints Should there be in your Palette?

One of the most common questions is about palette choice. There's no right or wrong here but you certainly don't need a large number of paints, especially when learning how to mix colours. Stick with a few of each of the primaries (blues, reds and yellows)



Some people will tell you that you can work with 3 or 6 paints in your palette, while it is true to a point, you will find this approach very limiting for botanical work because many subjects are very bright in colour, conversely having a huge palette becomes overwhelming and too many ready mixed colours are not needed, they can result in mud!

I suggest 4 or 5 of each primary colours, try to use single pigments as far as is possible to keep the outcome predictable. A good range of single pigment primaries will allow you to mix pretty much any colour. You can add other paints once that you are familiar with mixing your own, I use several others just because I have them but many are not needed. Remember there are usually several ways of getting to the same place with a colour mix.

All of the paints listed are Winsor & Newton Artist Quality, apart from those that state otherwise. The pigment numbers are in brackets. Also note that the same colour by name made by a different manufacturer may look and handle quite differently. There are numerous alternatives in different brands so it's best to choose by pigment number rather than name.

Suggested Palette –

Use a good range of Blues, Reds and Yellows as the basis of the Palette

Suggested blues: Cerulean Blue (PB 35), Cobalt Blue (PB28), Winsor Blue green shade (PB 15), French Ultramarine (PB29) and Indanthrene blue (PB 60).
Suggested Reds: Permanent Rose (PV19), Permanent Alizarin Crimson* (PR N/A, PR206) or Permanent Carmine (PR N/A), Scarlet Lake (PR188) and Quinacridone magenta (PR122)

Suggested Yellows: Lemon Yellow Nickel Titanate (PY 53), Winsor Lemon (PY175) Windsor Yellow (PY154) and Transparent Yellow (PY97)
Some Extra Colours: I've a few additional favourites like Cobalt Violet PV14 and Manganese Blue (PB33) By Holbein and Nickel Azo Yellow by M. Graham (PY150 and Winsor Violet Dioxazine (PV 23)

- Note: Permanent Alizarin Crimson MUST be the 'Permanent' version as Alizarin Crimson fades. N/A = not yet assigned a pigment number but refers to Quinacridone pyrrodlidone

What About White? although we don't use white in purist method watercolour work, it can be added to a colour to make it opaque, this is known as 'body colour' and is useful for painting glaucous leaves and bloom (where there is a white coating that can be rubbed off) and also fine hairs found in many botanical subjects. Titanium white is the most opaque of white watercolour paints or you can use gouache.
I can manage everything with the above range of 15 colours.

Ready Mixed ' Convenience' colours such as Sap Green are tempting but you can get into a mess with these colours if you are unsure how to use them. Different manufacturers use different pigment combinations and they can contain between 2 and 4 different pigments. Most will need some red adding to make a more natural green, so that makes 3 - 5 pigments, then maybe a shade colour and wash over the top of another colour and so on! Maybe you are wondering why that is that a problem? Basically the more pigments you add the dirtier the colour becomes and the less harmony there will be in the greens, the variation in pigments used makes the outcome very unpredictable. For example Holbein use PG36, PG17, PY17 & PG 8, whereas M. Graham use PG7 and PY110, so not even any of the same pigments! making it impossible to recommend a generic ' Sap Green'. Instead I suggest mixing your own greens, usually with three colours (Yellow + Blue and usually a small amount of red) Then I bias mix by altering the ratio of each colour, to make is warmer or cooler or more yellow, blue or grey etc.

Suggested colour mixing activity:

Try to see how many colour variations you can make with three primaries Indanthrene Blue, Transparent Yellow and Permanent Rose. Mix as many greens variations as possible using these three colours.

- First use just the blue and yellow in equal proportions (1:1) to make green, this is known as a secondary colour mix. Also try some different ratios 2:1 (2 parts yellow and 1 part blue and vice -versa) then 3:1 etc.
- Then try adding the red (permanent magenta) to your mix but be aware that you will need much less red in the mix to make a good green.
- Finally once you have explored all of the greens swap the colours around 1:1, 2:1 and 3:1 red and yellow and this time with a lesser amount of blue etc and finally 1:1, 2:1 and 3:1 of red and blue with a small amount of yellow

What have you discovered from this activity?

You can now try a mix of 3 different primaries, French Ultramarine, Winsor Yellow and Permanent Rose, repeat the above exercise.
Finally try a mix of Cerulean blue, Lemon Yellow nickel titanate and Permanent Rose

Green Tips: When deciding on a mix, try using use a blue that has a similar light value to the green that you are trying to achieve as your basic hue (so that means using a tonally dark blue for a dark green and a medium tone blue for a mid- green). For a very light green use high light value colours, such as cerulean blue - mix with lemon yellow and permanent rose to make those light grey blue/ green colours found in Eucalyptus, Stachys or succulent leaves. The more red you add the more grey/green it becomes. Play with the ratios of colour to discover the flexibility. Conversely for a dark Holly leaf, try Indanthrene Blue, Permanent Alizarin Crimson and Transparent Yellow. Again play with the ratios to alter the colour, more blue makes it cooler and more yellow and red makes it warmer

Transparent v Opaques Tips: in general I prefer transparent paints because they give more luminosity. That doesn't mean that I never use opaques or semi-opaques. If you obtain a colour chart for your paint (there's a document in the files section on where to get them) it will tell you whether they are T, ST, SO or O (transparent, semi-transparent, semi-opaque or opaque. It stands to reason that opaque paints let less light through and transparent lets the most through. The exception that I make with some of the more opaque paints is in some high light value colours, such as Lemon Yellow Nickel Titanate and Cerulean Blue (I use these a lot in glaucous leaves where there is a waxy white coating). Many earth colours are opaque pigments and in botanical work I prefer to mix my own transparent versions. In dark greens opaques can be a disaster, they dull the colour significantly and while initial washes may look OK, subsequent washes become increasingly dead.

Suggested activity: Demonstrating the you don't actually need any of these paints! Transparent alternatives to earth colours, easy greens or painting on a budget…..mix your own!

If you happen to have any of the following ready mixed or Earths or paints with more than one pigment, try mixing your own version and matching it, using the 3 primaries - this activity demonstrates that you can mix pretty much anything from the right reds, blues and , yellows, I'm not saying the mix will have some of the same qualities but many are actually better! Some Earth colours are opaque and I prefer to mix my own. So here a my alternatives I'll add more to these later.

Naples yellow (PY35, PR101 &PW4) = lemon yellow NT + scarlet lake + cerulean blue
Perylene maroon (**PR179)**= I like this paint but you can mix the same with Permanent carmine + Indanthrene blue or Prussian blue + transparent yellow
Perylene violet = as above in slightly different ratio (more red and yellow)
Quinacridone gold (PO49) = Scarlet Lake + Transparent yellow and a tiny amount of Indanthrene blue, Quin Gold is a lovely paint but you can mix the same effect easily
Raw umber (PBr& & PY42)= Transparent Yellow + Permanent Alizarin Crimson + Cerulean Blue
Burnt Umber (PB7, PR101 and PY42) = Permanent Alizarin Crimson + Transparent yellow + French ultramarine
Raw Sienna = Scarlet Lake + Winsor Yellow + Cerulean Blue
Burnt Sienna (PR101) = Another lovely transparent colour but appears same as Scarlet Lake + Winsor Yellow + Cerulean Blue
Light Red (PR101 & PY42) = Scarlet Lake + Winsor Lemon

Van Dyke Brown (PB101 &PBk6) = Permanent Alizarin Crimson + Transparent yellow + Indanthrene blue

Brown madder (= Scarlet Lake + Franch Ultramarine and a tiny amount of Transparenet Yellow

Sepia (PBk6 & PR101)= Indanthrene blue + Permanent Carmine + Transparent Yellow Neutral tint (PB15, PBk6 & PV19) = Indanthrene blue + Permanent Alizarin Crimson + Transparent yellow

Davy's Grey (PG7, PBk6, PW4 & PBk19) = Cerulean Blue + Lemon Yellow Nickel Titanate + Permanent Rose

Sap Green (PG36& PO49)= French Ultramarine + transparent Yellow and a tiny amount of permanent rose

Green Gold ((PG10) = Transparent Yellow + Cerulean Blue

Cobalt Turquoise light (PG50) = Winsor Blue and Winsor Lemon

Oxide of Chromium PG17 = Cobalt Blue + Lemon Yellow Nickel Titanate + Permanent Rose

Paints to Definitely Avoid

Anything with Black Pigment, e.g. many indigos (but not all) have black and sepia too. While they are ok raw, if you use them in a green mix it will create a flat dead look

Fugitive Paints = e.g. Opera Rose, these are recognised by having the letter C on the tube. Some people will say they have tested these colours and that they are OK, they are not! well not if you consider yourself a serious botanical artist. A 5 years test on a windowsill will not tell you about the long term

Also Alizarin Crimson

Some of the madders, such as Rose Madder

Aureolin – it turns a dirty colour over time

For More information I recommend

Hilary page's Guide to Watercolour Paints , Watson Guptill Publications, New York

www.hilarypage.com

My Blog on watercolour paints: http://diannesutherland.blogspot.co.uk/2015/06/about-watercolour-paint.html