History of Watercolor

• Circa 12th century - The Moors introduced papermaking to Spain, which soon spread to Italy.

• One of the earliest paper centers was Fabriano, Italy with mills in operation by 1276. Fabriano is still in operation today.

• 1492 saw the founding of Arches paper, also still in operation today.

• Albrecht Dürer (1471 - 1528) Durer was a German artist who is one of the first artists who used watercolor painting during the early Renaissance. Also, Durer's influence was partly responsible for the first school of watercolor painting in Europe, led by Hans Bol.

• Renaissance watercolor was mostly observational. Birds, animals, botanical illustrations, and landscapes.

Apple Blossom and Orange-tip Butterfly.
Jacques Le Moyne de Morgues (1533-1588)

Mira Mira calligraphiae monumenta. Illumination added about 1591 - 1596.

Watercolor Basics

What is Watercolor?

Watercolor paint consists of four principal ingredients:

- *Pigments, natural or synthetic, mineral or organic*
- *Gum arabic as a binder to hold the pigment in suspension and fix the pigment to the painting surface*
- *Additives like glycerin, ox gall, honey, and preservatives to alter the viscosity, hiding, durability or color of the pigment and vehicle mixture*
- *Water, the substance used to thin or dilute the paint for application, which evaporates when the paint hardens or dries*

A Watercolor Recipe

-Courtesy Dr David Cranswick-

1. When bought from an art shop, gum Arabic comes in hard, brittle lumps. Grind down a small quantity in a pestle and mortar until it becomes a powder.

2. Dissolve one part gum Arabic powder in three parts boiling water. Pour slowly and stir continuously for 10-15 minutes.

3. Once dissolved, pour the mixture through a muslin cloth. This acts as a great sieve to get rid of any bits of bark and other impurities that might have been contained in the solid gum Arabic.

4. Adding honey into the mixture at this stage will make the paint more fluid and easy to work with later. The honey draws in more of the water. Without the honey, the pan will take a long time to get wet and 'release' any colour onto the brush. Aim for four parts solution to one part honey – you can always experiment with the ratios.

5. Once the solution is ready, place a quantity on the grinding slab, mix in your chosen pigment and grind further. It is important to achieve the correct balance of pigment to gum/honey mix: a general rule is slightly more gum than pigment. Some pigments – Raw and Burnt Sienna, for example – require more than this.

6. Pour the mixture into pans or half pans and leave them to set. If the drying pan cracks then make a note of this and next time add a little more gum solution to that particular pigment. A little cracking is not a big issue, however, as it is still good to paint with.

About Watercolor Paper

Paper Terms:

- *Sizing:*
  In this case, not adhesive. "Sizing" in watercolor refers to the additives in watercolor paper which make it absorbant. Gelatin is the traditional watercolor sizing and keeps the paint from spreading uncontrollably across the paper. You cannot correct watercolor pieces with a razor like manuscripts because once you ruin the surface's size, the paint will no longer absorb correctly. Heavy erasing on watercolor paper is discouraged for the same reason: it ruins the paper's size.
- *Hot Press: Incredibly smooth papers suitable for fine detail. Paint lays on the surface of the paper. This gives you a long time to play with the paint (which provides a larger window of error in my humble opinion. Is better at creating smooth gradients and bright colors.*
- *Cold Press:*
  Textured paper. Absorbs faster and causes the paint to have a faster set time. Arguably duller colors, but genereally the industry favorite.
- *Lb.:*
  Traditionally, papers are measured by the weight in pounds of one ream (500 sheets) at standard size sheets. In watercolor a 22"x30" sheet is considered the standard. The higher lb. papers will be less transparent, more absorbant, and generally take more abuse. Because they're generally too thick to trace through, there's a trade off between how hard it is to get a drawing onto a 300 lb. sheet, and how much friendlier the paper is.
- *Watercolor Sheets Sizes:*
  Royal 19" x 24"
  Super-Royal 19.25" x 27"
  Imperial 22" x 30"
  Single Elephant 25.75" x 40" or 23" x 28"
  Double Elephant 29.5" x 41" or 26.5" x 40"
  Antiquarian 31"x 53"
  Triple Elephant 40" x 60"

Mineral vs. Organic Pigments

Mineral/Inorganic/Granular Pigments
- Generally from minerals, clay, metal,
- Low dyeing strength
- Good light-fastness
- Opaque
- Never disolve all the way

Period Examples:
- Red Ochre (prehistory)
- Yellow Ochre (prehistory)
- Lime white (prehistory)
- Malachite (from Egyptian antiquity)
- Orpiment (from Egyptian antiquity)
- Azurite (from Egyptian antiquity-)
- Red Lead (from Greek/Roman antiquity)
- Vermillion (8th c. -)
- Lead white (from Greek antiquity)
- Ultramarine (12th c.)
- Lead tin yellow (13th c. -)
- Naples Yellow (16th c. -)
- Venetian Red

Modern Examples:
- Cerulean Blue
- Cadmium Red
- Cadmium Yellow
- Cobalt Blue
- Oxide of Chromium

Organic/Staining Pigments
- Generally from plants, bugs, & other organics
- High dyeing strength. Staining.
- Poor light-fastness
- Transparent
- Fully water-soluable.

Period Examples:
- Carbon Black (prehistory)
- Bone Black (prehistory)
- Umber (prehistory)
- Madder Lake (from Egyptian antiquity)
- Carmine Lake (from Egyptian antiquity)
- Indigo (from Egyptian antiquity)
- Green Earth (from Greek antiquity)
- Verdigris (from Greek antiquity)
- Indian Yellow (15th c.-19th c.)
- Copper resinate (15th-17th c.)

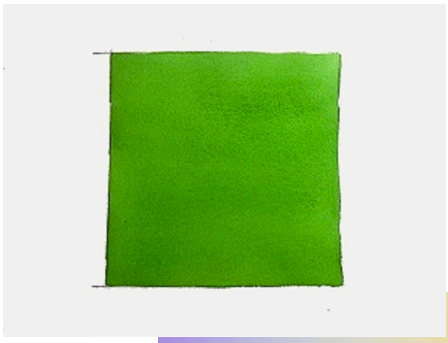
Modern Examples:
- Alizarin Crimson
- Lemon Yellow
- Permanent Rose/Opera Rose
- Viridian
- Prussian Blue

Modern synthetics have really made things difficult. Their formulas can vary wildly and the same color can be both a stain and a granular pigment across competing brands. The source of a pigment is only a general rule for its categorization and is not reliable. When in doubt, play with it and make your own decision.

Watercolor Technique Basics

Glazing
Stacked layers of transparent color. Each layer must dry completely before the next layer is applied. Color is always applied with the lightest color on the bottom layer.

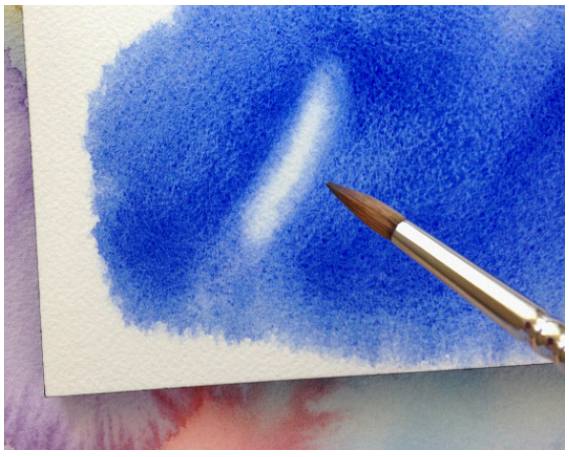
Flat Wash
The goal of a flat wash is for the color to be as flat and even as possible. Organic pigments generally make this easier, and it is easier still with some modern synthetics.



Gradiated Wash.
The goal is to create a smooth transition between two disperate colors. This is also easier with organic pigments, however, it is more important that the colors be similar. If you're insistant for instance on doing an iron oxide wash, you want to pair it with something else that's similarly heavy/ granular. The more dissimilar the pigment bases are, the less likely they are to bleed cleanly into eachother.

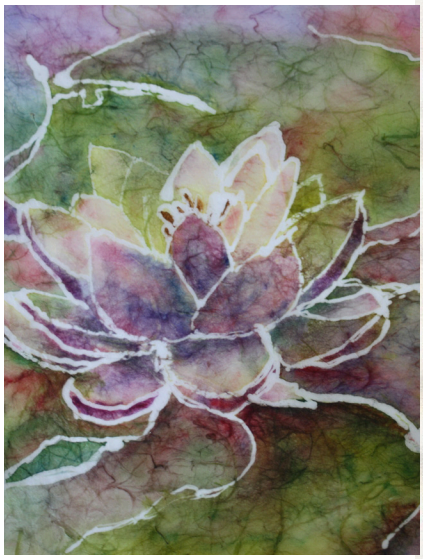
Lifting
When you pick pigment off a page. This works better on hotpress papers, and with mineral based paints. This combination lets the paint sit on the paper, instead of being rapidly and fully absorbed like an organic pigment into cold press.

Lifting can be done wet or dry and can also be done with a brush or with a stamp like a bunched up paper towel.



Resist

Resist:
When a hydro-phobic base is laid down to repell paint. This is traditionally done with wax, (all natural beeswax chapstick works in a pinch). For precision: freeze the wax so it can be sharpened into a clean point.



Masking Fluid:
Is a non-period technique, but can be a good safety net if you're working on something particularly intricate.

Always use masking fluid with a wet brush on dry paper. I recommend not using your nicest brushes with masking fluid (choose a throw away brush). You will also need to stop frequently to clean the brush if you're doing a lot of masking. Try NOT to dip the brush all the way to the ferrel.

The joy of masking fluid is that you can paint down resist to preserve paper white. Unlike a wax resist, when masking fluid is peeled off, the paper can be painted on again.