

Pigments for a Period Palette  
Originally presented on 9/28/01 by Martin FitzJames

I. Introduction:

It is my purpose here to give everyone here a brief overview of various pigments used in our time period. I have been interested in painting for years, since joining the society I have found a wonderful outlet for that interest. I am assuming that most taking this class are illuminators, but since I really enjoy larger work I will be addressing that as well.

II. Safety

If I can stress one subject more than others that would be SAFETY SAFETY SAFETY!!! Most if not all period pigments are extremely poisonous, even to the touch. With a few routine safety precautions, you can greatly minimize any danger from these substance and therefore live much longer than your period counterparts.

- A. Open Cuts: If you have any open cuts on your hands or arms PLEASE make sure they are covered.
- B. Hands: Hands should be covered at all times when using period pigments. This can be done with something as simple as latex surgical gloves, which are cheap and don't mess up your feel with the brush noticeably.
- C. Mouth and Nose: The mouth and nose should be covered with an NIOSH N95 dust mask, either a disposable one or a re-useable one with disposable filters. This is important because the N95 is rated for lead.
- D. Eyes: Eyes should also be covered with safety goggles. This is most important when mixing the pigments.
- E. A Word on Period Sources: Perhaps the best period source for the painter is *Il Libro dell'Arte* by Cennino D'Andrea Cennini it is available both from Dover translated by Daniel Thompson, and online at <http://www.noteaccess.com/Texts/index.htm>. One

caveat with this book, as mentioned in the introduction the later chapters were added out of period, so shouldn't be used as documentation. I would also like to warn people from over using Theophilus' *On Divers Arts*. Much of the information in the book is very good, unfortunately he also appears to have been very gullible, and not everything in his book is to be trusted.

## F. Mediums

I am not going to talk over much about the various mediums used in period, but I will mention them briefly. So far the best definition I have gotten for a medium is "Wet material added to paint to adhere it to a ground" (Turner 2001)

- A. Tempera: This is the use of egg yolks to bind the paint. This method dries quickly and produces rich colors.
- B. Glair: more difficult to mix in the early stages than tempera, this is a wonderful medium dries relatively quickly and produces nice clear colors
- C. Oil: Use of oil mostly linseed has been documented to the early Renaissance, it is a wonderful medium for larger projects or ones where a more even tone is desired, but not for paper.
- D. Gum Arabic: Medieval watercolor, more transparent than some others. Largely replaced Glair in book arts.

## V. Colors

### VI. Whites

1. Lead White: The best period white is white lead. It is a wonderful opaque color that can be brushed on very evenly. The one possible failure of it is that under certain conditions it can blacken over time, hence several "Black Madonna" paintings usually a coating of glair or other protective coating will stop this.

2. Bone White: Mostly used to mix with other colors. Especially when preparing paper for drawing.

3. Gypsum/Chalk: Often used when Lead cannot.

3. Non-Period Substitutes: Both Titanium and Zinc are used commonly now for white paint. If you have to use a non-period color I would suggest Titanium it is closer in appearance to Lead and avoids Zinc's many defects.

#### VII. Blacks

1. Ivory Black: was used in antiquity, and is a good color with blue highlights, but there is no proof that it was used in period.

2. Lamp Black: An extremely fine grain black used extensively in inks, tough however to mix for paints.

3. Vine Black: Grape vine charcoal used extensively for charcoal drawing and paint, has brown overtones.

#### VIII. Reds

It is enough to state here that there is extreme confusion to the names of the various red pigments. Each is known by many and sometimes conflicting names. The names I give here, are what is truly meant, and I will attempt to clear up confusion you might find in your own reading.

1. Sinopia: Traditionally this is a fine red ochre gotten from the around the historical city of Sinope. During our period however it had come to mean any red ochre. An Ochre being an oxide of Iron.

2. Vermilion/Cinnabar: Mercuric Sulfide: Scarlet red color used extensively in painting. The main confusion regarding this color seems to stem from whether it is found naturally **Cinnabar** or refined by combining Mercury and Sulpher **Vermilion**.

- 3: Minnium/Mennige/Orange Lead/Red Lead: Best described as safety orange it is a very common paint used in both illumination and painting. Modern Red Lead is truthfully another color, more like what the Golden Gate is painted with, but they are similar. Cinnabar is occasionally called Minnium, so be careful of that confusion.
3. Lac/Lake/Indian Lake: A good dark red, it has some permanency issues., considered better for painting than illumination.
4. Grain/Kermes: Wonderful pinkish scarlet color made from the dried husks of dead insects. Mostly available from the Balkan region and the Mid-East and because of that hard to impossible to acquire. The New World bug cochineal is a close relative and can be used as a substitute.
- 5.Madder: Pinkish organic red dye refined from two climbing plants, originally from the Mid-East, but cultivated in Spain early.
6. Brazil Wood: Transparent pigment, dark red, used extensively in illumination to provide dark overtones on drapery.
7. Other Organics: Clothlet Colors

#### IX. Earths: Browns and Yellows

With a few notable exceptions most browns and yellows were made from refining various earths. I will not try to list all of the various colors since the list could be exhaustive.

1. Sienna: Nice light brown/tan with yellowish highlights used extensively, both unmixed and with white for skin tones.
2. Burnt Sienna: Dark rich chocolate brown
3. Ochre: As discussed earlier, Ochre's are oxides of iron, and range from bright yellow to red

4. Orpiment: A brilliant true yellow, wonderful for painting or illuminating, Does not mix well with lead paints.

5. Lead-Tin Yellow: A pale yellow used when orpiment could not.

6. Saffron: used as a glair glaze often to brighten reds and greens.

#### X. Greens

1. Terre Verte/Green Earths: Usually a greenish-grey these are used most often as background colors though the German greens are a bit more green.

2. Verdigris: Brilliant Blue green oxidized copper

3. Malachite: roughly ground pigment used extensively especially in illumination.

#### XI. Blues

As with the reds there is some confusion with the naming of blue colors, I am using modern convention for convenience.

1. Azurite: Very similar in chemical composition to Malachite, Azurite is a very common used color in the Medieval/Renaissance Palette. While it lacks the distinction of Lapis it provides the mainstay of blue color for the medieval painter.

2. Lapis Lazuli/Ultramarine: Called The “Queen of Colors” The most valued pigment in the Medieval or modern world. True ultramarine is extremely expensive and difficult to make. It traveled in great quantities to medieval Europe from what is now Afghanistan. The quality of Ultramarine showed marked improvement over time and was probably being refined from its raw state in Europe by the 14<sup>th</sup> Century.

3. Organic Blues: Indigo and Woad, were used often by illuminators as highlights much like Brazil wood was for red tones. It also was used for backgrounds, but was not as highly prized as Azurite and Ultramarine.

#### VI. Suppliers

<http://www.naturalpigments.com> (Only place for toxic pigments)

[www.griffindyeworks.com](http://www.griffindyeworks.com)

<http://www.sinopia.com/>

## VII. Bibliography

Anfuso, Linda. *Compleat Anachronist #43 A Palette of Period Pigments*. Society for Creative Anachronism, Milpitas, c.1989

Cennini Cennino, Ed. By Thompson, Daniel. *The Craftsman's Handbook Il Libro dell'Arte*. Dover Publications, New York

Thompson, Daniel. *The Materials and Techniques of Medieval Painting*. Dover Publications, New York. c.1956

Thompson, Daniel. *The Practice of Tempera Painting Materials and Methods*. Dover Publications, New York. c.1936

Turner, Nancy. *Lecture: In the Company of Spice Traders: Medieval Manuscript Illuminators and Their Painting Materials*. 08/09/01 sponsored by the J. Paul Getty Trust.