

Not the Painting, But the Paint...

A Study of 15th Century
Paint Materials and Recipes



Presented by the
Shire of Sangre del Sol
as a Group Project

The purpose of this project was three-fold:

1) To create a sample collection of different paint colors from different materials, using egg tempera and glaze bindings on a linen canvas, in the style of a 15th century artist. In addition to this, we also painted a sample image in the center of the samples, to demonstrate use of the paint samples. Our subject of choice was the Sangre Goat.

2) To satisfy the requirements of the Laurel Materials Challenge with as many materials that we could manage, as well as using these materials in multiple and varied ways.

3) To create a project that was actively participated upon by a large portion of the shire populace, in the hopes of encouraging them to create and enter projects in the future, as well as forging a stronger sense of community within our shire.

Please note, this project is not intended to be judged by the artistic merit of the painting. The painting is simply meant to be a sample of paints that we've created, and the paints themselves are the focus of our work.

Shire Members Involved in Project

Lady Rebecca the Goldenhaired

Lord Wolfram mit der Roten Rosen

Lord Dmitri Skomorochov

Lord Robin le Claver

Lord Logan of Loch Ness

Lady Ameliana le Claver

Anakhet al-Badawiyya

Gyda of Mora

Devin the Ogre

Lucina Agliardi

Eadaoin inghean Eamonn

Cedric the Wounder

Material	Material Type	Use	Origin	Reference
Canvas				
Canvas	Linen	Canvas stretched across the frame	Cloth made from flax fibers	Cennini pg. 103 Thompson, pg. 37-38
Frame	Wood	Stretcher frame supporting the canvas	Non-specific tree	
Gesso Glue	Animal Hide	Rabbit-skin glue mixed with chalk to create white paste	Hide from a rabbit	Cennini pg. 70-71 Thompson pg. 32-33
Gesso White	Stone	Chalk mixed with glue to create white paste	Calcite limestone	Cennini pg. 70-71 Thompson pg. 32-33
Brush				
Handle	Wood	Wooden handle of brush	Non-specific tree	
Bristles	Animal Hide	Used for brush tips	Rough hog hair bound together for brushes	
Paint				
Tempera	Egg	Binder for pigments	Chicken egg yolk	Thompson pg. 63-64
Lampblack	Wax (Candle)	Pigment mixed with binder	Soot created from above a candle flame	Cennini pg. 22-23 Thompson pg. 83-85
Vermillion	Stone	Pigment mixed with binder	Cinnabar stone	Cennini pg. 24 Thompson pg. 103-04
Cochineal	Grain *	Pigment mixed with binder	See note below *	Thompson pg. 111-16
Ultramarine	Stone	Pigment mixed with binder	Lapis lazuli stone	Cennini pg. 36-39 Thompson pg. 145-50
Azurite	Stone / Copper	Pigment mixed with binder	Copper ore stone	Cennini pg. 35-36 Thompson pg. 130-35
Indigo	Plant (not part of challenge)	Pigment mixed with binder	Indigo plant	Thompson pg. 135
Verdigris	Copper	Pigment mixed with binder	Copper acetate	Cennini pg. 33 Thompson pg. 163-68
Malachite	Stone / Copper	Pigment mixed with binder	Copper ore stone	Cennini pg. 31-32 Thompson pg. 160-62
Naples Yellow	Stone	Pigment mixed with binder	Volcanic stone <i>giallullinum</i>	Cennini pg. 28 Thompson pg. 179-80
Orpiment	Stone	Pigment mixed with binder	Arsenic sulphide	Cennini pg. 28-29 Thompson pg. 176-77
Yellow Ochre	Earth (not part of challenge)	Pigment mixed with binder	Earthen clay	Cennini pg. 27-28 Thompson pg. 175-76

* Grain – According to Thompson, the material now known as Cochineal Lake was originally referred to as grain, since it was harvested from oak trees, and called grain after the word *grana*, from the Greek word for berries. The medieval “grain” was actually the dead bodies of the cochineal insect that died when it stung the oak tree. (Thompson, pgs. 111-12)

Paint Materials and Ingredients



Egg - Binder

Thompson pg. 63-64

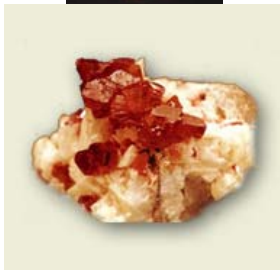
Egg yolk mixed with water and pigment made an excellent binder that was used until mostly replaced by oil painting during the 16th century. Egg yolk dried quickly, and was good for painting layers on top of layers at one time.



Lampblack - Black

Cennini pg. 22-23, Thompson pg. 83-85

Lampblack was made from collecting the fine black soot from a beeswax candle or linseed oil lamp. In addition to the material we had available, we created a small amount ourselves with a beeswax candle to confirm the technique.



Vermillion - Red

Cennini pg. 24, Thompson pg. 103-04

Coming from powdered cinnabar stone, vermilion is a mercury sulfide, and therefore highly toxic. In modern times, vermilion is no longer used due to toxicity.



Cochineal - Purple

Thompson pg. 111-16

This medieval pigment, "grain", was created when the female cochineal insect would sting an oak tree and die on the branch. The dead insects were scraped off the branches, ground up, and used for pigment.



Ultramarine - Blue

Cennini pg. 36-39, Thompson pg. 145-50

Ultramarine pigment was created from ground-up lapis lazuli stone, and was imported as a pigment from Persia before Europeans learned to properly refine the pigment. It was considered the purest blue pigment used.



Azurite - Blue

Cennini pg. 35-36, Thompson pg. 130-35

Another blue shade, ground from the stone known in medieval times simply as azure. Azurite is produced by weathering of copper ore, creating the mineral. Further weathering and exposure lead to the creation of malachite.

Paint Materials and Ingredients



Indigo - Blue

Thompson pg. 135

The indigo pigment came from the indigo plant, known to be in use from the Egyptian pre-history. It was derived from the indigo plant from India, and was imported from the Orient during the Middle Ages.



Verdigris - Green

Cennini pg. 33, Thompson pg. 163-68

Verdigris is a copper acetate, manufactured artificially by exposing copper to vinegar. Verdigris was often made from hanging copper plates over hot vinegar, and collecting the crust, similar to collecting lampblack.



Malachite - Green

Cennini pg. 31-32, Thompson pg. 160-62

Malachite is almost identical to azurite except for the presence of more water in its make-up, giving up a green hue instead of a blue hue. Also like azurite, malachite doesn't mix well with oil, so it went out of fashion.

Naples Yellow - Yellow

Cennini pg. 28, Thompson pg. 179-80

The pigment for Naples Yellow is uncertain, but the origin according to Thompson is that it was a bright yellow stone that came from Naples, a result of the volcanic action near Mt. Vesuvius.

Orpiment - Yellow

Cennini pg. 28-29, Thompson pg. 176-77


Another highly poisonous material, orpiment is an arsenic sulfide, which Cennini claims is artificial, but Thompson says is found in nature. Orpiment was used by artists to portray the truest color of gold.



Yellow Ochre - Yellow

Cennini pg. 27-28, Thompson pg. 175-76

Yellow ochre, like the other ochre colors, is an earth color taken from clay from the mountains. Since ochre was well-known, if not often used, Thompson doesn't have many good medieval references for how it was prepared.

Vermillion	Lampblack	Yellow Ochre	
Cochineal		Orpiment	
Ultramarine		Vermillion Lampblack Orpiment	
Azurite	Indigo	Verdigris	Malachite

Group Painting Workshop #1

For our group project, we divided our projects into two parts. The first part was to understand the egg tempera method of painting, with practice session, while the second workshop was devoted to working with the specific pigments of our project, and putting them on the canvas. The photographs provided show the first workshop (pics 1-31) and the second workshop (pics 32-61).

The first workshop of the project involved separating egg yolks from the rest of the egg, with great emphasis put on making certain that no egg white - or even the membrane around the yolk - made it into the yolk, as it would interfere with the consistency of the binder (pics 1-8). With the leftover egg whites, we turned some of them into glair (another binding agent), to experiment with a similar painting style (pics 19, 28), although we decided not to use glair painting in the final project.

Once the eggs were appropriately separated, we then chose our practice pigment, lampblack, which was both plentiful and cheap, and started mixing our paints (pics 16-18) with a straight combination of egg yolk and pigment, nothing else added or needed. Once we have that paint created, we each took sheets of paper and began to practice our skills (pics 20-27). As a final part of this first workshop, we decided to put a small amount of the lampblack on the canvas, adding the corner "frames" so we could see the paint as it would appear on the project (pic 29).

Group Painting Workshop #2

The second workshop of the project had the shire again separating eggs from yolks to prepare the binding material, and then we worked on the subject of the project, that being the mysterious Sangre Goat, done in heraldic style in the shire colors or red and black. Various shire members attempted to draw various goat images (pics 32-34), with Lady Ameliana doing the sketch on the canvas for painting (pic 35).

While the artwork was being prepared, Lady Rebecca began work on mixing the pigments into our painting tray, a small amount of each pigment being used (pics 37-40), and larger amounts of lampblack and vermilion for the Sangre Goat (pic 36). For the sake of caution, Lady Rebecca made sure to personally mix all of the pigments, since she was experienced in their use and dangers.

Once the sketch and the paints were ready, it was time for everyone involved to start taking turns painting, with several of us working on the Sangre Goat (pics 41-48), followed by each person choosing a color from the pigment selections to paint a sample (pics 49-59). Finally, we had a completed sample canvas, from the original sketch of the Sangre Goat (pic 60), to the finished project (pic 61). Since this was intended as a sample painting, not a finished piece of art, we chose not to varnish it, since practice pieces in period wouldn't have been intended to be kept.

Bibliography

- 1) Cennini, Cennino D'Andrea (translated by Daniel V. Thompson)
"Il Libro dell' Arte" (The Craftsman's Handbook)
Dover Publications Inc., New York, New York
© 1960

Cennini was a painter from late 14th - early 15th century Florence, best known for his "Craftsman's Handbook", and instructional guide on how to do any work related to painting and materials. His work is the source of most other studies on Renaissance painting.

- 2) Thompson, Daniel V.
"The Materials and Techniques of Medieval Painting"
Dover Publications Inc., New York, New York
© 1956

Thompson is the most well-known and studied modern scholar on medieval painting, including being the translator for Cennini's Handbook. For this project, we often cross-referenced Cennini's material with Thompson's for clarity.

- 3) Rourke, David (Turlough O'Rourke)
"Techniques of Medieval and Renaissance Painting"
Compleat Anachronist # 127
© 2005 Society for Creative Anachronism

This SCA publication makes a lot of reference to Cennini and Thompson, and was used in this project for emphasis.

- 4) Baldini, Umberto (translated by Mary Fitton)
"La Primavera del Botticelli"
(Primavera: The Restoration of Botticelli's Masterpiece)
Harry N. Abrams Inc., New York, New York
© 1986

Baldini's study of the Primavera painting was used to examine the similarities between Cennini's methods and the actual works of Botticelli (who was also a Florentine artist shortly after Cennini's time).