Regular Baronial Goings On

Please contact the people in charge to confirm these activities.
{Ed. note: See back page for monthly Canton practices}

- **Commons** (Baronial business meeting): Second Wednesday of the month. 7:30PM, Monmouth County Library, 125 Symmes Drive, Manalapan, NJ (off Route 9). The Meeting is open to the public.

- **Archery Practice** is every Sunday at Turkey Swamp Park. Additional practices on Wed., call Rupert, the Archery Marshal, for details at archery@carillion.eastkingdom.org .

- **The Carillion Brewers Guild** will meet the first Wednesday of each month at 7:00 PM at the home of Rupert the Unbalanced (see archery for contact info) in Hamilton Twp. To subscribe to the Carillion Brewers list go to: CarillionBrewers-subscribe@yahoogroups.com

- There is a weekly **Tuesday Night fight practice** at the Forked River Methodist Church from 7:30pm - 11:00pm. If you have any questions please direct them to knightmarshal@carillion.eastkingdom.org.

- Jean & Philip (the Facetious) will hold archery practice at their home on Friday afternoons, beginning at 5pm 'til dark. Please contact them for directions. (Jeanne Berk, Ph.D.) jrberk@blast.net (This is in Settemore Swamp)

Your Stromberg Constant Depression Carburettor and you!

a 10 page dissertation by Lady Mary the Hun

Harumph!!!! You have all been saved from the treatise on "Everything you always wanted to know about Stromberg Carburettors & more". At least for this month. Of course if you really would like to know everything about the Stromberg CD Carburettor, you can always read "Stromberg CD Carburettors Owners Workshop Manual" *by Don Peers* (ISBN #0-85696-300-3) It has a copyright of 1976, but I am SURE you can find it on line somewhere. How can you not appreciate a book that starts off with "A petrol engine, as fitted to a modern car, is an extremely complex mechanism and, for its satisfactory operation, must have the support and co-operation of equally complex ancillary equipment"

A few people e-mailed me (after my not so subtle threat) and asked if they could send in poems, short stories, or if they could submit something even if they don't have a subscription. The answer to all of the above is YES! Since there seems to be some confusion, here are *my* version of **"Da Rulz"** for publication...

¾ 1 - It can't be a personal attack on someone who was born after 1600. Personas were born after this date, so no weasiling out of this by saying, "But it was about Mary the Hun, not Mary Jacobson!" Why you think Henry the VIII was a right git is a perfectly fine article though.

¾ 2 - It has to have a G / PG rating. (PG is pushing it.)

¾ 3 - I reserve the right to edit for content. I will let you know if I do.

¾ 4 - It really ought to have SOMETHING to do with the SCA, the time period before 1600, or something nifty going on in the Barony. (Articles on British Cars & their parts not withstanding if I don't get enough filler!)

¾ 5 - It has to get to me **before** the 20th of the **month before it needs to be published**. (If it is not time sensitive I may hold on to it if there is not enough room.)

¾ 6 - If it is NOT your work, I need to know.

¾ 7 - If it IS your work, I need your permission to post it in BOTH the Clochette AND the E-Clochette. If I don't have permission to put it on-line, the article will be deleted before the E-Clochette is posted to the web. Right now an e-mail stating that I can use the article both in the Clochette & on-line is fine. This may have to change to paper wavers in the future, but for now... (It's OK if you don't want it on-line, just let me know.)

Anyway, those are my criteria. Hopefully you will all be inspired to send me soooooo many articles I won't know what to do! (Hey, I can dream)

Oyez, oyez, blah, blah, blah,…

Unto the Barony of Carillion does Lord Gwalchmai ap Tallan, bell herald for the Barony of Carillion send greetings.

Ah, spring is here and the hearts of the known world turn to hittin' people, pokin' people, and shootin' at stuff! (Oh yeah, and love too.) West Winsor Renfaire is coming up real soon, so get those banners, favors, tabards and other heraldic display out where I can see them. You just might be the first winner of the "Gwalchmai ap Talan heraldic displayer token of heraldic excellence"!!!!

This just in, from the Laurel Sovereign of Arms… Ok, not just in, only two months late at my end. Keger's name and device have passed at Laurel; you can call him now Greicke der Keger. And if you see a fighter bearing "Argent, a wolf's head cabossed sable within a bordure in dented purpure", that's Kegger, so hit him with a stick. I know I'll try. **:o)**
Beer box, err, soap box.
I heard that some of you out there can't get in touch with me and I don't know how that's possible. But here is my e-mail address herald@carillion.eastkingdom.org if any gentles need to contact me. Also I will be at West Winsor Ren Faire and Bearing Arms and available to consult on names and devices.

Question And Answers
Lefty of Forestgate writes "Gwalchmai, my submission was returned by the collage of arms because of color on color, can they do that, do they think it's ugly and won't tell me, or do they just hate me?" Well, I can't tell you if they hate you and it's not a herald's job to tell you that your device is ugly, but you broke a basic rule of heraldry, "The rule of contrast" The rule of contrast states "All Armory must sufficient contrast to allow each element of thedesign to be clearly identifiable at a distance." That means no color on color, or metal on metal. So your "Gules, three grenades sable", got returned. Thank you for the question.

Cant of the month
The answer to last month's cant was "A space heater". If any one wants it explained talk to me. If anyone got it, don't hit me, they only get worse. This month "Per fess argent and sable, a sheep and three wool packs counter changed."

That's all for now,
YIS
Gwalchmai

Fellow Brewers,
Here's the itinerary for the Brew trip on Saturday, May 3
¾ 11:15 We leave here and head to Flemington.
¾ 12:00 We arrive at "The Honey Pot".
¾ 1:00 We leave for the Ship Inn.
¾ 1:30 Lunch at the Ship Inn.
¾ 3:00 Tour of the brewery with Tim, the head brewer.
Please let me know how many are going to have luch so I can make the appropriate reservations. For those who do not wish to eat lunch or buy honey, you may certainly meet up with us at the Ship Inn at 300, but I still need to give Tim the number people to expect. For questions and directions, please contact me privately.
Yours in Service,
Rupert the Unbalanced, Carillion Brewers Guild
Emaildrosen105@aol.com

Period pigments used in painting, a basic overview, emphasis on manuscript painting.

By Mistress kis Marika

So many times we hear about "appropriate period colors" but exactly what colors are period? Modern formulations and names can be different from period ones, different areas provided specific minerals that created "local" color, but could also be brought to an area by traders, some pigments were even created by alchemy. Different pigments were used in different paints and dyes and on different surfaces. Not all colors could be used on the same page due to chemical reactions! Different combinations were considered pleasing to the medieval eye. Different Hughes of a color were obtained from the same mineral or plant depending upon the purity. All of this depends upon the locale, surface, use, and time period. Colors also changed over time. What we are use to seeing is what has survived, not necessarily the most common or best. What is available is the most common not always the beautiful exception that is tucked away in some corner of a vault. Yes there are accepted rules, but I insist that you research them yourself not take anyone elses word on it.

Always use references when drawing as well as putting the color into your pieces. Develop a period eye and make a period choice for your palate as well as the techniques used to lay down the color. Write down what you did, why and from where you got it so you can reference it. The choices you make should reflect your inspiration. The more you do and learn the broader you color palate and the wiser your choices will be.

If you want to be wowed by color just open books of period art and bask in the colors. I cannot imagine how beautiful the colors were so many centuries ago when fresh. Better yet, go to a museum and realize just how poor those color copies are! Don't ask, or assume that colors are not period, do not take any one persons word on the subject. LOOK for yourself. Look at many different examples of one style, then look at different periods within that style, eventually explore many different styles as well as time periods. Look at what inspired the medieval artists and how the styles progressed. You can always find an exception to any rule. Just make sure you know why the rules are being broken!

Mistress Megan ni Laine states that there are over 40 pigments used by painters in the middle ages. Cennini classifies color into seven natural colors, four mineral in nature, three natural but requiring a little "help" with the addition of something else.

Remember the vocabulary/language is important and needs to be defined and used properly. What artists considered natural and primary were different from today's understanding of nature and color. When reading these books it can become confusing. All vocabulary in *italics* is based on the first book in the bibliography. *Natural Pigments* were collected without any obvious chemical change. As opposed to *artificial pigments* which required treatments to obtain the color. Some pigments were hybrids and fell into both categories. *Pigments* were used to color paints as well as inks, opaque ones had body, there were also transparent ones. Ink flowed differently than paint. *Vehicles* were what the pigment was mixed into such as egg for tempera or gum Arabic, a tree sap. It caries and holds or binds the color to the page. A *fugitive* color will fade or change, it is not permanent.

Whether or not you choose to explore chemistry, everything can be brought back to chemistry. Medieval alchemists were the first chemists. Unsuccessful in their pursuit for a way to make gold, they played with the elements, combing them, exploring their properties, and coming up with all sorts of neat things. By doing this they laid the foundation for today's hard science. The modern periodic table is based on observations compiled by these ancient scientists. It has gone through several incarnations, new elements are still being discovered, their presence and properties predicted. Just as each person given a deck of playing cards will organize

them differently and can predict what cards are missing, so do we work with the periodic table of elements. How these elements combine, react and break down is recorded in this table.

The center of the table is labeled transition metals. These metals are more difficult to study as they have multiple oxidation numbers, the way they react depends upon what it is combined with and variation of the element it is. Copper can be blue or green, lead will be white, red, or yellow to name a few of the transition metal based colors. When mixing elements the byproducts can be deadly as well as useful. Unfortunately, when exposed to other elements, the gases they give off, the mediums they are mixed with or placed beside, these elements being unstable can change color or even turn black. This makes using metal based pigments difficult to control, especially when the primary white is lead. The desired color will change with exposure to other elements on the page. Use of metals as panel painting pigments was limited due to exposure to air and light. Closed books were more protected. Many pigments could be used for different purposes; some were strictly used in one discipline, others crossed over.

Vegetable based pigments were easier to work with although finding ways to make them less fragile; more permanent was the key here. Different parts of plants were used for extraction of pigment. Sometimes the color could only be found at specific times of the year, or possibly from specific varieties of the plant family. The conditions, the acid or base properties of the soil, amount of rain, temperature could all made a difference in the color. Color could also be adjusted by mixing an acid, base or other chemical with the pigment. Here again is a reference to chemistry in the science of botany.

A basic knowledge of chemistry is recommended but not necessary, by the time you are done however, it will be inevitable. If you choose to work with period pigments keep a journal, and buy handbooks for reference. The toxicity as well as the reactions have been documented, learn from the masters. Should you choose to make safer substitutions, a knowledge of why as well as how it was done in period and why you chose to make modern substitutions is perfectly acceptable. No one needs to die for his or her art. Medieval art has survived centuries although to bring a person form that time to the modern world and showing them the remnants of their greatness of their era would surely sadden then, much has faded over time.

Black for painting and for ink.

The impressionists added black directly to a color to darken it. In medieval work pure color was often applied in layers, thus to darken a blue, you make enough layers to get the right intensity, starting with a wash that appears to be a light blue, each layer getting consecutively darker, to deepen the blue, then, add a **wash** of black over it, this can also create a shadow or outline something. Colors may not mix well on the palate, the vehicles did not always allow colors to blend pleasingly, the chemical components or the pigments were not always compatible. By layering transparent/translucent washes, allowing them to dry between layers, this will give the depth and colors needed without mudding them. Two colors, layered will blend in the eye; closer inspection will show two separate layers. Mixing colors to get a muddy black (a later technique) gives a different feeling than using true black. Earlier work often did not shadow, was flat in the application of solid colors. Look at your piece, and study the techniques. See how the colors were used and applied.

Creating a black pigment: Talk about recycling. Capturing the soot given off by lamps, lamp black, was a common black pigment, it did not need to be ground, just collected, scraped off the glass surface that was placed above the flame, and could be used with any and all vehicles. Unfortunately it faded to brown with time. The burning of different oils was used to create a variety of lamp blacks of different quality. There were many ways to make black, Cennini recommends, using burned vines, charcoal, creates a

desirable *lean* black, (dry, as opposed to *fat* which is wet, or oily, lean colors were best in most cases) the burned pit of a peach or bones are also a desirable black and I think would be easier to grind than hematite, although more fragile, less archival in today's terminology. This is why some lines appear brown not black as originally laid down when viewing medieval manuscripts.

The technique to create pigments varies some depending upon the raw pigment, but it is generally consistent. Take the raw pigment, breaking it up into smaller pieces, pick out impurities or inferior pigment, place it in a mortar with some water to keep it from scattering, and grind it into the finest dust, the more it is worked the better and richer the color. Take this pigment and place it onto a slab (if using lamp black you will not have to grind it as it is already dust). Continue to work it with water into a paste using your palate knife. Work this for many hours also, the more it is worked the better the color. Add this to your desired vehicle, mix it and allow it to permeate into the vehicle. A touch of earwax will keep the bubbles out when using gum Arabic or egg. Work it to the consistency that works best for your need. Working it well with your knife. Experience and a good master to teach will make you most successful in creating paints.

White to highlight and as a base for adding body to the staining, transparent pigments: White was used in washes to create highlights, as black was to create shadow. It was applied in the same way. Just as a thick line of black could be used to outline, a thick line of white can also be used. The white of choice was made from lead ground with water, it could be mixed with egg yolk (a yellow base) or just the whites with the stringy part removed (glaire). It is more difficult to handle than black but treated in the same way both in painting and preparation. As the primary acceptable white it was used most often. White lead is highly reactive, the choice of what type of pigment to use on the same page was dictated by the use of white lead on that page.

Sheets of Lead turn white when soaked with urine, (urine breaks down to ammonia.) Finding a stable non reactive opaque white was not accomplished in period. Lead white reacted with the air as well as other colors. Most natural whites, mineral based, were highly reactive. Zinc is a byproduct of the creation of brass, zinc (zinctum) is mentioned by Paracelsus in the 1500's although not in reference to pigments. Zinc was not a pigment until after the 1600's.

Gypsum (plaster) is highly reactive and must be processed to be used as paint pigment. Cennini again provides a recipe to "take the fire out" of it and make it more chemically stable. Basically you add the plaster to water and allow the reactive chemicals to leach out, constant but well timed agitation followed by periods of settling over several months. Pour off the contaminated water; the white powder will form nice white cakes of pigment. He also suggests the use of bone as white pigment. Take the specific bones of the fowl that have been sitting below the table, the older the better, put them to fire until they turn white as ash, grind and use as pigment. The eggshells mentioned later, and calcium carbonates could be used but were not as for painting. "a nice pigment but a bit stiff" according to Mappae Clavicula. A stiff paint would be difficult to manipulate.

Grinding metals into powder

Because of the ductile and malleable properties of metals, grinding with mortar and pestle does not create the desired powder effect, unless the metal becomes more brittle when treated to bring out color. To get this effect us salt when grinding, the water soluble, predictable crystalline structure lends itself perfectly for this purpose. When grinding it, the sharp cubes of salt will help cut the metal up into a fine powder and also keep it from being worked back together. No matter how small the salt is the shape is always a cube, perfect for grinding. When the grinding is completed, wash the mixture with water, the salt will dissolve, and wash away or be significantly diluted. The remaining metal powder

settles and is easily strained. The water can be evaporated leaving pure finely ground substance to be used as is or to react with an acid such as vinegar or ammonia to oxidize and bring out a desired color. The more of a surface is exposed the better the color and reaction to other chemicals.

Silver tarnished, tin was often used instead, white metals mixed with or washed with yellows, including egg yolk, would imitate gold. Shiny yellow substances were all acceptable to substitute for gold. Alchemists spent lifetimes searching for ways to make gold from less precious elements. Recipes abound, a favorite, yellow sulfide of tin was created through an elaborate process but does not make a convincing imposter. It at times appears to be more of a bronze powder. (Thompson) silver is used in staining glass; colors from a pale yellow, to rich orangey amber to black can be created. This is baked on not just painted.

Purple: Purple is primarily made from the byproducts of plants. Taking a piece of cloth, dipping it in lime water to produce the proper PH to turn the red to purple, and the repeatedly dipping it and allowing the fabric to saturate and dry super saturates the cloth with color to be used later. The dye called folium comes from the seeds of croton tinctorium, dated to the 14th century (Daniel V. Thompson.) Exposing the cloth to alkaline fumes of ammonia turn it blue. The transparent nature was sought after and explain why this was so popular a pigment. Used exclusively in books they were not light fast, proving to be to be *fugitive* for other types of painting. In panel painting a base of blue with a pink crosshatching over it creates a vibrant purple color in the viewers eye. Mixing Lac and ultramarine blue in equal parts or Indigo and red hematite will also produce purple.

Purple was traditionally made from shellfish. Thompson shows the word is related to the Greek word for whelk. Actual documentation of whelk reds in medieval pigments cannot be found. Possibly it was used early and not documented, the process used sporadically throughout history but not preferred due to the difficulty, labor and nasty byproduct made it less desirable than other methods of obtaining purple. I wonder if shells, containing some magnificent colors may have been used as pigment.

Blue: Blue, was a precious color. Purple was rare, cost a lot and was difficult to obtain, it also faded easily. Thus Ultramarine blue was often used as a royal color. In painting this color was often created from the lapis lazuli stone. Traveling merchants often brought gems and stones from afar to local artisans. If jewelers were local, the cast offs from stone cuttings could be recycled into pigments by artists. This stone as many stones do, come in various shades, specific shades were more desirable than others. Azurite was not a gemstone, thus it was not as accessible, but may have used as a period pigment. Other blue pigments, carbonite of copper, common is glassmaking, cobalt blue, forms of azurite were used in painting pigments, very often in the staining of glass. Some blue pigments have turned green with time and exposure to moisture, a chemical oxidation reaction of the copper.

Time was spent in crushing larger stones into smaller pieces, the size of grains of salt with a hammer. Then the apprentices and students separated the grains by color, tossing away impurities. Talk about Cinderella separating peas from ashes. Then hours upon hours were spent with mortar and pestle grinding these pieces of one specific shade into fine dust. Some stones were too soft to crush stone, like marble, so a bronze tool was recommended for hard elements, marble was fine for softer things like plants or clay. It depended upon the pigment you were grinding as to the material your tool was created from.

Water was often added to keep the dust of precious color from flying away although Cennini states not to do this with lapis. With some exception, the more time you spent grinding a pigment, I am talking hours, the finer the dust, and the better the color. I find that having a specific guide is important, as there are specific considerations to be taken with individual pigments. The resources I have listed are

wonderful, and can be compared and contrasted to modern verses period techniques as well as how each author handled the same pigment. Also, there are many varieties of each color, find the shades and formulas you like best. The general rule does not always apply across the board with all pigments. A good reference is a necessity.

Large amounts of water can be mixed into these pigments, the "stone pigment" will settle, impurities will float, then can be separated in this manor. Any pyrites will sink and will add a depth and sparkle to the paint. The powder must be further washed to bring out the color, Cennini gives a rather lengthy recipe of waxes, lye, turpentine, from pine, and mastic used to bring out the color with very complicated instructions on how to accomplish the task. Azurite can be washed with soap and water. Silica of aluminum is the modern chemical name for man made lapis but the stone contained silica and some other natural impurities that helped make it a period pigment. I would not pay for a necklace of silica of aluminum as I would for lapis. Just as laboratory stones are less precious even if of higher quality than natural stones when buying jewelry, of course industrial uses make the laboratory specimens more valuable than natural in that application.

Blue is expensive, what about a cheaper blue? For this we turn to copper, or more specifically copper ammonia. These were manufactured or artificial. The color was not easy to come to and difficult to make. It was not stable or as permanent as azurite either. Copper sulphate when mixed with ammonia will yield a blue color. Lime, sometimes in the form of egg shells can make the mixture more stable as a pigment. Lime, copper in the form of acetate, verdigris green, and sal ammoniac will create a blue according to Thompson in materials and techniques. As the ammonia is lost, the color turns back to green.

Gum Arabic will make an opaque paint, glair a more transparent one when mixed as the vehicle with lapis pigments. Before adding the pigment to the vehicle, put it on a porphyle slab, with water and work it into a paste, I see this consistency almost as a thick pigment from a tube. At this point the pigment is too fine to damage the stone so a stone can be used. The paste is then well worked, the more you work it with the palate knife on the slab the better.

Reds of many shades: Red is called minium. Note the closeness to the word miniature. The red pigment was used in the adornment of the page, often with small pictures. Time, the confusion of terms and languages soon made the word, once meaning red to mean small. Among illuminators minium still refers to the color.

Red can come from lead, it is a transition metal; it will tarnish, becoming black, and react with other colors and chemicals. Be careful with what you mix it with or use on the same page, and seal the painted surface from the air. It is a poison. The fall of the Roman Empire is often blamed on lead. When using a lead based pigments take precautions and know the dangers to your person.

To make lead red, roast it lightly uncovered. It will turn yellow and eventually red. Again, Cennini gives a wonderful recipe complete with precautions. Mercury sulfide, also known as vermilion could be created, but was more often purchased from an alchemist according to Cennini. Mistress Megan ni Laine de Belle Rive gives a recipe, and strong warnings. Mercury, sulphur and red clay baked lightly covered with a tile until red smoke is seen. She has done it and claims it works well. This color is ground with water and prepared as stated for black. Though it can be made Cennini recommends purchasing it.

Lac is a color made by man, again it is recommended that you purchase it but beware; bad color is fat and contains alum, avoid this type. Lac that is lean, made from gum is preferred. Dry and granular it appears black. It grinds well with water, but again, it needs to be sealed as air will cause the color to fade and change.

There were other red pigments. Hematite stone for one, a very strong stone. This stone was ground with water. Cinnabar

from Spain is also a red pigment. There were many shades of red, purple, orange, and true red. Some were mineral in origin, stone and clay, others vegetable based.

Brazil wood, from Ceylon is also used. Brown when dry, red when wet, boiled with lye it will turn purple red, alum turns it to an orangey red. It must be mixed with ground eggshells, or a chalk: marble dust to make an opaque painting quality.(see white as a pigment or base for stain Madder, a vegetable dye from the roots of plants was also used but needed to be mixed in a base such as mentioned above. The specific recipe can be found in Mappe Clavicula, chapter 189 as per Mistress Megan ni Laine de Belle Rive. Vegetable dyes were often not a first choice to illuminators as they were not as permanent as required for these arts. Pages could be dyed, as could cloth and fiber but a paint needed to be more resilient, and permanent, less fragile or *Fugitive,* and needed to be carried on another opaque pigment with more body if more than a staining was desired. Making your choice of which vegetable dye or pigment to us dependant upon the specific work needing to be done and the other available pigments. Books were not exposed to air and light as panels were, but a page must last, as books were not replaceable.

Green: The mineral malachite is one of those minerals that does not improve with incessant grinding. The modern malachite is not good as a pigment, it becomes colorless when ground, this holds true for emeralds also. In period, malachite was found in veins along side azurite. Called emerald green it must not be confused with gem emeralds. As mentioned with the blues, the color is copper based, and acid will bring out the green. Because air will react with metals, sealing the pigment in an airtight medium such as 'egg' will help make the color stable. It could eventually turn blue if allowed to react with other pigments. It needs to be worked lightly with water and washed often to bring out the color. Terre verte translates to earth green, it works easily with water. The more you work it the better. It is a fat color but recommended all the same for faces and the like. It could be used for gilding also. This color mixes with white lead makes a sage green.

Copper exposed to boiling vinegar creates beautiful verdigris green. It is unstable and must be sealed or fixed in an acid based medium to retain fastness. The quality of the copper is directly related to the color. This is highly reactive with white lead! Exposure to air will bring out a blue. Keep it away form white lead as they will have an untoward reaction. Using an egg yolk makes a beautiful color. Coating the copper with salt and honey creates salt green, copper chloride was also thought to form. Too much honey could allow the green to spread. Copper washed with glycerin and fatty acids (soap) and then washed with vinegar created an English green, Rouen.

Vegetable greens are fugitive unless mordanted with alum or tannin according to A Palate of Period Pigments. Mixing this into a bone or chalk base gave the 'stain' more body and made it appropriate for painting techniques of layering color. You can also dip cloth and make a color cake to use a wet brush on like modern watercolor cakes (as mentioned in purple). These were used often, as they did not react with the white lead. Ripe buckhorn berries create sap green, no binder was needed with this pigment, it is used today. It was made with alum and when evaporated was a stable paint in itself, it could enhance verdigris. Sap green is also made in clothettes like purple and some reds. It is made from Iris. Persians used honeysuckle to make green. Although we know green to be a secondary color medieval painters saw it as a primary color. Even when mixing yellow and indigo to create green it was a primary color.

Yellow: Ocher and umber are natural colors that are found in mountains. Ocher, light and dark, is located in conjunction with other colors called sinoper, terre vert as well as others. (Cennini) Umber can be heated/burnt to create a richer dark er brown. These pigments were found just under the surface, could be exposed with a spade, and lifted out with a knife. Not all the colors were used as pigments although Cennini had attempted to. He found the white *fat,* not suitable

for pigments, it did not hold up. Since the color was not as hard as a stone, grinding it and subsequent working it with palate knife must have been easier. The more this color was worked, the better it became. Giallorino is called artificial, although it is not made by alchemy, it is a mineral created by volcanoes. Hard as a stone, ground and worked with water it is a permanent color, although it is not an easy color to grind and work, like hemmitite, use bronze to grind it, work it well on the slab.

Saffron is a color used by many in the arts. It comes from the stamens of a fall flowering crocus. Place linen on a brick and place the saffron on it. Then place the saffron in a glass of lye, work it up on your slab. It must be kept from the air, mixed with verdigris it makes a wonderful grass color. Thompson describes which saffron is good for use in painting as not all is acceptable. Good saffron allowed to infuse with glair was a cherished yellow for manuscript painting although it has faded through the centuries. Added to green it enhanced the color.

We have discussed that lead turns yellow before it turns red. Yellow lakes or holy yellow were made from Persian berries, weld pigments from berries of Rhamnus (not ripe), buckhorn, was used exclusively in books according to Thompson.

It seems that pigment was obtained in several ways, although the methods to process it and create the paint was relatively similar. The first was to take a colorful substance pulverize it, then suspend it in a vehicle to keep the stuff stuck to the surface and away from the air. Hard substances such as rocks and crystals were broken, impurities removed, then pulverized, washed, and suspended in gum Arabic or egg. Clays and earth were softer and may also be appropriate as pigment to grind and mix into pigment. You could extract a pigment from plant stuff. As in saffron, the dyestuff could be gathered and allowed to permeate the vehicle. In other cases grinding the vegetable or simply boiling drew out the color, the water was then evaporated or the dye was soaked into a cloth to make a block of pure pigment to be mixed with a vehicle. Often transparent, to make it opaque you could mix it with a chalky white base, giving it body, and then vehicle to make the paint. Still further you can react a metal with an acid, base, or heat to create color, pulverize that and suspend that in a vehicle. Of course, you need to be aware of the reactions and fragility of each substance.

Over the centuries the process has not changed much, modern books still outline similar procedures. The pigments can be created in a laboratory as well as mined, toxic substances have been replaced, and reactive pigments have had inert substitutions. Sometimes the substitution all be it less toxic is not as vibrant or beautiful as its medieval predecessor. There are still questions concerning how the ancient alchemists obtained some of the magnificent colors and effects. Some we still cannot reproduce today.

My study of pigments and paints is in its infancy and adds a new dimension to my study of illumination. I wish you an exciting journey also.

Information was found in each of the following, and can be documented back to one source. The period references available for research are the same: primarily Cinnini. I have attempted to reference each bit of information, any omission is strictly accidental and unintentional. I hope this will give you a background and spur your own exploration into this fascinating topic.

BIBLIOGRAPHY:

1. A BRIIEF ENCYCLEPODIA of the MATERIALS AND TECHNIQUES of MANUSCRIPT ILLUMINATION. In Europe before 1650 A.D.
By Master RSvP MCMLXXXIV
copyright c. 1984 by Robert W. trump Potboiler Press 1999
indispensable, especially when reading translations of period manuscripts.

2. A Palette of Period Pigments Mistress Megan ni Laine de Belle Rive,
Wilton, New Hampshire, OL, Interest Press #43 the complete Anachronistic

A good introduction, she has researched the topic, worked with the pigments, and gives a working overview. Her bibliography lists excellent resources.

3. The Craftsman's Handbook "Il Libro dell'Art Cennino d'Andrea Cenni
Translated by DanielV. Thompson, Jr. ISBN 0-486-20054-X
Dover Books

A text book of sorts for medieval artists. It covers how to make pigments, recipes to make the vehicles, things to consider and take note of. All aspects of art, drawing, casting as well as painting, as well as the materials and tools of the trade during medieval times are covered. This copy is translated by Daniel Thompson. **Very useful**

4. THE MATERIALS AND TECHIQUES OF MEDIEVAL PAINTING
Daniel V. Thompson with a foreword by Bernard Berenson
ISBN 0-486-20327-1
Dover Books

after much research he has compiled this book using several resources. This resource covers a large range of time, and several countries. An **excellent overview** on the history of materials and the how and why of their usage.

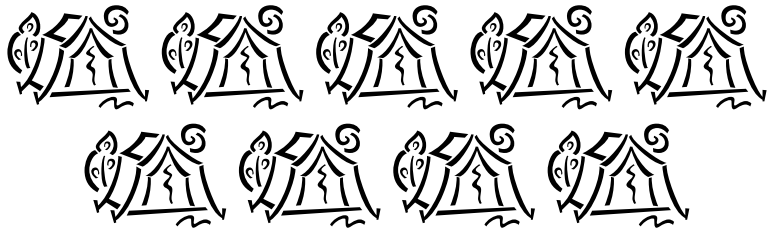
Additional books that I have purchased to use in further research.

5. FORMULAS FOR PAINTERS Robert Massey ISBN 0-8230-1877-6
WATSON- GUPTILL PUBLICATIONS, NEW YORK
Includes addresses of sources of supplies

6. Medieval and Renaissance Treatises on the arts of Painting Original Texts with English Translations. Mrs. Mary P. Merrifield ISBN 0-486-40440-4
Dover Books

Looks to be an excellent resource

To purchase period pigments look up ***John the Artificer*** on the web or at Pennsic War in the church by the food court.



Pennsic News

Also included in this issue were the forms to pre-register for Pennsic. Both the forms for Cooper's Lake & for camping with Carillion. Don't forget, if you are not pre-registered you can not camp with Carillion. Please contact Philip of the Furrowed Fields at philipicus@yahoo.com for details BEFORE JUNE 1!

To register with the Cooper's (BEFORE JUNE 1) go to http://www.cooperslake.com/prereg32.htm
The Carillion pre-registration forms can be found at http://www.carillion.eastkingdom.org/news.html