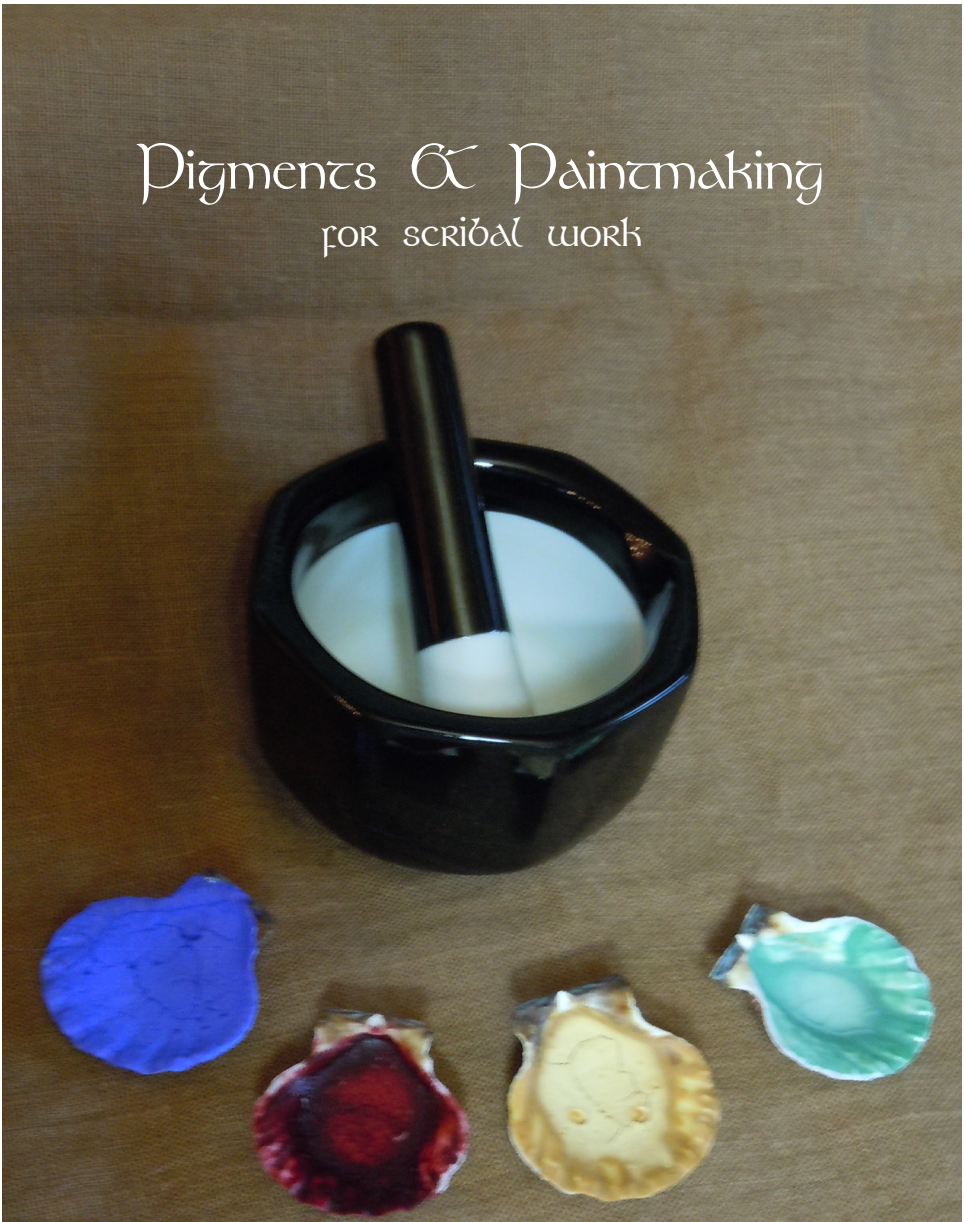
Pigments & Paintmaking

for scribal work



As presented by
ThLady Jorhildr Hrafnkelsdottir
at Winter Wonders
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Safety notice: Gloves and a proper NIOSH-certified dust mask should be worn when handling dry powders. Avoid skin contact and immediately wash your hands. Do not eat or drink when working with pigments.

Pigments used in illumination can be mineral based, organic, or synthetic in origin. Most mineral pigments are simply ground up earth or stone. Colored earths, such as yellow ocher, green earth, and red ocher, were commonly used. Semi-precious stones including malachite, azurite, and lapis lazuli, were crushed, ground and processed into usable pigments.

Organic pigments usually require some chemistry or special processing to make into usable pigment. Various berries, woods, roots, and even spices like saffron and tumeric were used to create pigments. Though I list some of these spices below as colors, be aware that spice must be turned into a lake pigment before being used.

Synthetic pigments involve a different kind of chemistry. White lead and verdigris are examples of synthetic pigments used in the SCA period. Neither process to create these pigments is for the faint of heart and beyond the scope of this handout.

Various Pigments Used in Illuminations

(not a complete listing)

White: White Lead*
Eggshell White
Note: Titanium white, a modern pigment, is an acceptable substitute for toxic white lead.

Black: Lamp Black - made from soot
Vine Black - made from burned vines

Blue: Azurite (very common until synthetic ultramarine was developed)
Ultramarine (Synthetic Lapis)
Indigo

Green: Verdigris* (copper exposed to vinegar fumes)
Terre Verte (green earths)
Malachite (grainy) - Do not grind too fine or the color becomes pale.
Sap Green (made from Buckthorn berries)

Yellow: Orpiment* (Arsenic)
Yellow Ochres
Saffron - fugative - can be used as a glaze
Tumeric - (still have to be processed into a lake pigment)

Red: Cinnabar* (natural) or Vermilion* (man-made with mercury)
Red Ochres
Alzarian Crimson (synthetic Madder)
Brazil wood (also used to make red ink)
Realgar*
Minum* (red/orange lead)

*** = toxic**

Binders

Once you have your pigments, you'll need something to turn them into paint. For illumination, glair and gum arabic are the common binders.

Glair is made by beating egg whites until they form stiff peaks; the stiffer the better. Make sure to use a ceramic bowl to avoid chemical reactions. Cover with plastic wrap and leave overnight. The next day, you'll notice the "foam" will have formed a clear liquid. This liquid is the glair. Carefully drain the liquid away from the foam. You may use old hose to strain the liquid if you feel it is necessary. I store my glair in glass dropper bottles in my refrigerator. The older the glair, the better it works.

A note of caution: glair can be somewhat brittle on a manuscript.

Gum Arabic is a resin readily available at a hobby or art store. Pigment suppliers also carry it in powdered form, which is much cheaper. The powder will have to be hydrated prior to use. Gum Arabic does not have the brittle issue of glair.

Making Paint

Some purchased pigments may need to be ground finer for paint. A textured glass plate and a muller work well for this task. A mortar and pestle can be a bit too large for the quantities used for illuminations.

Once your pigment is properly ground with a muller and glass plate, add a few drops of water to the pigment and grind until you have a creamy paste. I have found that ochres tend to take a lot of water to reach a creamy paste. Some pigments, like malachite and vermilion, are hydrophobic and take a lot of work to create a paste.

Once you have a paste, you're ready to add your binder. Some pigments work better with glair; other with gum arabic. Experimentation is the best way to determine which works best for your given pigment. In some cases, a mixture of the two is effective as well.

Add a few drops of your binder of choice and mix well. Once you believe you have a good consistency, test your paint. If it smudges or cracks when dry, add more binder. Continue this process until the dry paint does not smudge or crack.

Both Gum Arabic and Glair can rehydrate. You can allow your paint to dry, and use water to turn it back into paint, but glair is more difficult to do this with.

Observations and Tidbits

Terre Verte (green earths) were sometimes glazed with Sap Green to enhance their colors.

Egg yolk may be added to red pigments to deepen their color; however this treatment causes a chemical change that prevents the paint from re-hydrating. Do not add the touch of yolk until you are ready to paint.

Books for further reading

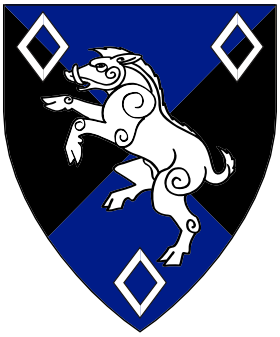
The Materials and Techniques of Medieval Painting by Daniel V. Thompson. Dover publications 1956.

Theophilus On Divers Arts translated by John G. Hawthorne and Cyril Stanley Smith. Dover publications 1963 & 1979.

Der Arte Illuminandi translated by Daniel Varney Thompson and George Heard Hamilton. Oxford university Press, 1933.

Suppliers

www.ancientearthpigments.com
www.limnersguild.com
www.naturalpigments.com
www.kremerpigments.com



The Honorable Lady Jórhildr Hrafnkelsdóttir, C.S.L., O.S.R., O.O.C.
Kingdom of Gleann Abhann · Shire of Blackwood

jorhildr.boaredraven.com jorhildr@boaredraven.com