

Note from the Making and Knowing Project:

This essay was written for “The Art Technological Source,” an 8-week graduate course at the University of Amsterdam offered by Dr. Marjolijn Bol in 2015 and 2016 to students enrolled in an MA program in either Technical Art History or Conservation and Restoration. Students worked on various recipes from BnF Ms. Fr. 640 on the following five topics: 1) tracing and painting on glass, 2) yellow dyes and their applications, 3) dragon’s blood, 4) painters’ varnishes, and 5) sieves.

This is an un-edited student paper that relies on an earlier state of the Making and Knowing Project’s transcription and translation of Ms. Fr. 640. For an updated version of the text, see:

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A most practical approach

The author-practitioner’s attitude regarding the topic of durability

Annotation for BnF Ms. Fr. 640, fols. 10r and 63v: “Scudegrun”

Course: The Art Technological Source
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BnF Ms. Fr. 640, fol. 10r: “Scudegrun”

Transcription [tcn_p010r, 18 March 2016]

<id>p010r_2</id>

<head><m>Scudegrun</m></head>

<ab>Il se faict à <pl>Lyon</pl> avecq du <m>suc de gaulde</m> & de la <m>croye</m> incorporée<lb/> ensemble, ou pour mieulx avecq de la <m>ceruse</m> qui est propre à<lb/> destrempé et à <m>huile</m>.</ab>

Translation [tl_p010r, 18 March 2016]

<id>p010r_2</id>

<head><m>Scudegrun </m></head>

<ab>It is made in <pl>Lyon</pl> from the <m>juice of weld</m> mixed with <m>chalk</m> or better yet with <m>ceruse</m>, which is appropriate for <m>tempera</m> and <m>oil</m>.</ab>

BnF Ms. Fr. 640, fol. 63v: “Scudegrun”

Transcription [tcn_p063v, 18 March 2016]

<id>p063v_3</id>

<head><m>Scudegrun</m></head>

<ab>Se faict avecq de la <m>fleur de genest<m> fort bouillié<lb/> dans de l’<m>eau</m>, y mettant suffisamment de l’<m>alum</m>, puys<lb/> de la <m>ceruse</m>.</ab>

Translation [tl_p063v, 18 March 2016]

<id>p063v_3</id>

<head><m>Scudegrun</m></head>

<ab>It is made with the broom flower well boiled in water, putting in it enough alum, then some ceruse.</ab>

Introduction

On fols. 10r and 63v of BnF Ms. Fr. 640 two recipes can be found for the preparation of a yellow lake pigment called “scudegrun.” Lake pigments are prepared by precipitating a soluble dye onto an insoluble substrate, and are made from the same organic colorants that are used in the textile dying industry.¹ While the recipe on fol. 10r uses weld (*Reseda luteola* L.) as the dyestuff source, the recipe on fol. 63v requires the use of dyer’s broom (*Genista tinctoria* L.) The name scudegrun may be etymologically related to the German “Schüttgrun” and “Schüttgelb,” which are associated with the purgative properties of the buckthorn berry (*Rhamnus cathartica* L.), another colorant used for yellow lakes. It can be assumed that the author-practitioner used scudegrun as a general term for yellow lake pigments, perhaps indicating a certain yellow hue rather than a specific colorant.²

It is well known that yellow lake pigments are fugitive, mainly due to the influence of light. As they were often used in combination with blues to create greens, the fading of yellow lakes has led to significant discoloration in paintings.³ Because of this known problem with yellow lakes, we decided, in addition to our reconstructions of the scudegrun recipes, to investigate the light-aging behavior of the resulting pigments.⁴ We were interested in the overall color change, the differences in fading between the two dyestuff sources, and the differences between pigments with varying levels of chalk in the substrate. The light-aging tests were prepared by combining the pigments with linseed oil, applying them to canvas boards, and covering one half of the test samples with cardboard. The canvas boards were then placed in the window with the samples facing outwards.⁵ However, at the time of writing (two weeks after placing the samples in the window) no color change had yet been observed. Fortunately, a study conducted by David Saunders and Jo Kirby on light-induced color changes in lake pigments can be used to predict the outcomes of the light-aging of scudegrun.⁶ This study found that lakes

¹ For a description of methods for making lake pigments, as well as historical and practical recipes, see: Jo Kirby, Maarten van Bommel, and André Verheeken, *Natural Colorants for Dyeing and Lake Pigments: Practical Recipes and Their Historical Sources* (London: Archetype Publications, 2014).

² See also AnnotationFall2015_KokYi_158v_ColorForGreenLeafs.

³ For examples of paintings affected by the fading of yellow lakes, see: David Saunders and Jo Kirby, “Light-induced Colour Changes in Red and Yellow Lake Pigments,” *National Gallery Technical Bulletin* 15 (1994); Marika Spring and Larry Keith, “Aelbert Cuyp’s *Large Dort*: Colour Change and Conservation,” *National Gallery Technical Bulletin* 30 (2009).

⁴ The reconstruction of the scudegrun recipe on fol. 10r (weld) was carried out by Hedwig Braam, Claire Molgat Laurin, and Rutger Stuivenberg. The reconstruction of the recipe on fol. 63v (dyer’s broom) was executed by Véronique Fehmers, Kayleigh van der Gulik, and Laura Wolfkamp. See field notes for more information on the the reconstructions.

⁵ See Figure 63 in the field notes of the reconstruction of the scudegrun recipe on fol. 63v (dyer’s broom), executed by Véronique Fehmers, Kayleigh van der Gulik and Laura Wolfkamp.

⁶ Saunders and Kirby, “Light-induced Colour Changes,” 81-97.

prepared from weld are less fugitive than those prepared from other yellow dyes.⁷ Additionally, the presence of excess chalk in the substrate leads to a less stable pigment.⁸

It is interesting to note that the author-practitioner does not refer to the poor colorfastness of scudegrun in the recipes on fols. 10r and 63v, nor in the six other recipes in which scudegrun is mentioned.⁹ This is remarkable, because the author-practitioner does appear to be concerned with the durability of the materials and techniques he describes in other recipes.¹⁰ Was the author-practitioner aware of the fading properties of scudegrun? If he was aware of it, why did he not find it worth mentioning? To answer the first question, historical sources will be consulted to discern whether the author-practitioner could have been aware of the fugitivity of yellow lakes. To answer the second question, BnF Ms. Fr. 640 will be studied for recipes in which the author-practitioner does mention the durability of materials and techniques. These recipes will then be compared to the scudegrun recipes. What are the differences and similarities, and what does this tell us about the way the author-practitioner approached the topic of durability?

Knowledge about the fading of yellow lake pigments

Awareness of the fading of yellow lake pigments was widespread in early modern Europe. Nevertheless, it appears that many sixteenth and seventeenth century painters continued to use these lakes for yellow glazes, simply because there was no colorfast pigment available for this purpose.¹¹ The examples described here are drawn from historical sources from the fifteenth through the seventeenth centuries, and from different locations within Europe. The terminology used to describe the fading of yellow lakes is often the same as that used today. Authors speak, for example, of the fading, lightening, and bleaching of colors. Other terms that are frequently used are variants of “to disappear” or “to die.” In combination with current knowledge on the fugitivity of lake pigments, it can be assumed that these terms also refer to the fading of colors.¹²

The Italian painter Cennino Cennini seems to be one of the first to explicitly mention the fading of yellow lakes in his *Libro dell'Arte* (early fifteenth century). The “arzica” of which he

⁷ Ibid., 86.

⁸ Ibid., 89.

⁹ In addition to the recipes on fols. 10r and 63v, scudegrun is mentioned on fols. 63r, 129r, 135r, and 158v. Scudegrun is also mentioned in the French transcription of fol. 56v, but is noted in the translation as [illegible]. The author-practitioner recommends using scudegrun for picture painting, as well as for painting on cast metal objects. In each of these instances, the author-practitioner recommends using scudegrun together with other pigments to create various shades of green and shadow colors.

¹⁰ Examples of recipes in which the author-practitioner comments on the durability of materials and techniques can be found on fols. 3r, 6r, 7r, 9v, 11r, 31r, 31v, 32r, 56v, 58v, 59r, 64r, 65v, 66r, 67r, 64r, 65v, 66r, 100r, and 158v. These recipes will be discussed later in this annotation.

¹¹ M.H. van Eikema Hommes, “Painter’s Methods to Prevent Colour Changes Described in 16th to Early 18th Century Sources on Oil Painting Techniques,” in “Discoloration in Renaissance and Baroque Oil Paintings. Instructions for Painters, Theoretical Concepts, and Scientific Data” (PhD diss., University of Amsterdam, 2002), 31.

¹² Eikema Hommes, “Painter’s Methods to Prevent Colour Changes,” 16.

speaks has been identified as a lake pigment made from weld.¹³ Cennini notes that this color is mainly used by illuminators, and that “[i]t fades in the open.”¹⁴

In the *De Mayerne manuscript* (1620-46), based on conversations with painters throughout Europe, Théodore de Mayerne shows that painters were aware of the poor durability of organic pigments. These pigments include “schietgroen,” and “schitgeel,” which, like the German terms mentioned earlier, are associated with lakes made from buckthorn berries. In one entry he records a method for cleaning an oil painting with soap and water, after which the painting is left in the sun. It is thus recommended to cover the areas where lake pigments are used, in order to protect them from fading.¹⁵ In another entry De Mayerne records that “schietgeel” is sensitive to air and rain: “... it fades, bleaches and decays.”¹⁶

Other sources describe how one could distinguish good from bad quality pigments, based on their fading properties. The Italian painter Gian Batista Volpato, author of the *Volpato manuscript* (late seventeenth century) recommends hanging the colors in the sun, and notes that “if the colors fade they are bad, especially the giallo santo, the lake and the indico.”¹⁷ The Italian “giallo santo” is a name for yellow lake pigments that can be made from various organic sources.¹⁸ The Dutch painter Wilhelm Beurs similarly recommends a method for observing the colorfastness of yellow lakes in his book *De Groote Waereld in 't Kleen Geschildert* (1692): “The best yellow schietgeel is [an] intense yellow; it dies the least after being hung in private or in other stinking places.”¹⁹

These examples suggest that the author-practitioner of BnF Ms. Fr. 640 could indeed have been aware of the fading properties of scudegrun. The historical sources do not only focus on the fading of yellow lakes due to light, but also by water and atmospheric pollution. Contemporary studies into the fading of lake pigments primarily focus on light-induced fading, since this is the

¹³ Mary P. Merrifield, *Medieval and Renaissance Treatises on the Arts of Painting: Original Texts with English Translations* (Mineola, New York: Dover Publications, 1999), cliii.

¹⁴ Cennino Cennini, *The Craftsman's Handbook*, trans. Daniel V. Thompson (New York: Dover, 1933), 30: “A color known as arzica is yellow; and this color is made alchemically, and is but little used. Working with this color is chiefly a matter for illuminators; and it is used more in the neighborhood of Florence than anywhere else. This is a very thin color. It fades in the open; it is not good on the wall; it is all right on panel. It makes a lovely green if you mix in a little azurite and giallorino. Like the other choice colors it wants to be ground with clear water.”

¹⁵ De Mayerne (1620-46), quoted in Eikema Hommes, “Painter's Methods to Prevent Colour Changes,” 30: “[The painting is first cleaned with soap and water or just with water]. It must then be left for an hour or two in the sun. This will lighten the sky and the landscapes in the distance that have been made with smalt, azurite, masticot and lead-white. However, the places with schietgroen and lake will be ruined by the sun and the water. For this reason, these parts of the painting are covered with glued paper. The same applies to the trees and other kinds of green that are made with [a mixture of] schitgeel and masticot.”

¹⁶ Ibid.: “Schietgeel... This colour is even less resistant to the air and rain than [red] lake; it fades, bleaches and decays.”

¹⁷ Gian Batista Volpato, *The Mode to be Observed in Painting*, quoted in Merrifield, *Medieval and Renaissance Treatises on the Arts of Painting*, 744.

¹⁸ Nicholas Eastaugh, Valentine Walsh, Tracey Chaplin and Ruth Siddall, *Pigment Compendium: A Dictionary and Optical Microscopy of Historical Pigments* (Amsterdam: Butterworth-Heinemann, 2008), 174.

¹⁹ Wilhelm Beurs, *De Groote Waereld in 't Kleen Geschildert* (1692), quoted in Eikema Hommes, “Painter's Methods to Prevent Colour Changes,” 28.

main concern in a museum environment.²⁰ Nevertheless, the color changes induced by other sources than light should not be dismissed, as they were almost certainly important to the author-practitioner and his contemporaries.

The author-practitioner's concern with durability

Now that it has been established that the author-practitioner would probably have been aware of the fugitivity of scudegrun, but failed to mention this in his recipes, his approach to the topic of durability will be further investigated. To this end, a selection of recipes from BnF Ms. Fr. 640 will be discussed, in which the author-practitioner does appear to be concerned with the durability of materials and techniques. The discussion will start with recipes on the durability of techniques, then proceed with recipes concerning materials other than pigments, and it will end with those recipes in which the durability of pigments is commented upon. In this way, the discussion of the author-practitioner's concern with durability will start out broadly, and will end with recipes that are most similar to those on scudegrun.

Durability of techniques

There is a number of recipes in which the author-practitioner mentions the relative durability of certain techniques. On fol. 158v he states, for example, that metal casts of green leafs are usually painted with oil colors, "because distemper colors do not stay on." Furthermore, he notes in several recipes concerning oil painting that for the durability of certain colors, it is necessary to apply multiple coats. An example can be found on fol. 64r, where he asserts that "[v]erdigris does not fade, and therefore does not need to be applied twice. But lacquer and other materials, especially flesh tone, need two layers." Similarly, on fols. 65v and 66r the author-practitioner states that colors will fade quickly when only one coat is applied, but that this can be prevented by laying them in twice.

Another interesting set of recipes are those in which the author-practitioner comments on the bad practices exercised by "scribes." The term scribes seems to refer to both letter-painters and more generally mediocre painters. The author-practitioner attempts to warn his audience about the bad practices of these scribes. On fol. 31v, for instance, he mentions that "[s]cribes make darker shades of laque and other colors for clothing with egg yolk, but this is a fraud and does not last. Others glaze rouges de mine and other [colors] that are not beautiful in oil using egg white so that they seem to be done in oil. But humidity damages all that." On fol. 32r the author-practitioner likewise describes an inferior method that "scribes and mediocre painters" use for laying down gold in distemper, which "will be damaged in the rain." Lastly, on fol. 67r he discusses a method that the Germans use for varnishing paper, and states that "[i]t is with this that painters trick the poor peasants, painting their bands of taffeta with this egg white to finish sooner. But the first rain will ruin everything."

Durability of materials other than pigments

²⁰ Saunders and Kirby, "Light-induced Colour Changes," 83.

As becomes clear from the recipes discussed above, the author-practitioner often mentions the resistance of a certain material or technique to rain. This is confirmed by a set of recipes concerning the comparative durability of varnishes. On fol. 3r it is mentioned, for example, that “[m]astic varnish does not resist rain, whereas oil and rosin varnishes do.” Likewise, on fol. 31r the author-practitioner states that “Flanders varnish made with turpentine and its turpentine oil, or with mastic oil, can be taken off and doesn’t subsist in the rain. But that made with white nut oil ... holds in the rain and is very clear and fine and dries quickly.” The last sentence of the recipe on fol. 31r gives an indication to why the water resistance of varnishes might be of importance to the author-practitioner: “... one uses it for painted standards and signs that one carries into the rain.”

More concern about water resistance can be found in recipes on gilding. In these recipes the author-practitioner frequently makes a distinction between matte gold and burnished gold: whereas matte gold lasts in the rain, burnished gold does not. On fol. 6r, the author-practitioner writes, for example: “... and this matte gold so applied lasts in the rain as gilded leadworks and similar things do.” Another recipe on matte gold on fol. 7r states that “[s]uch gold will withstand rain on houses and elsewhere.” Finally, on fol. 66r: “And this matte gold is resistant to the rain provided that you rub it ...” The author-practitioner’s matte gold and burnished gold correspond to the techniques of oil gilding and water gilding, respectively. While water gilding can be burnished to give the gold a high reflectivity, oil gilding cannot, and thus gives a matte result.²¹ As the author-practitioner rightly indicates in these recipes, oil gilding is resistant to water, but water gilding is not.

Durability of pigments

The author-practitioner’s concern with the durability of materials and techniques extends to his recommendations for the appropriate use of certain pigments. He shows, for instance, an awareness of the incompatibility of orpiment and verdigris with other colors. On fol. 65v he notes that “verdigris and other corrosive colors that are strong will in the end fade the colors that are laid in after.” He also warns against the use of verdigris and orpiment in laying down a gold color on fol. 100r: “... grind massicot, mine, and other drying substances, but not vert-de-gris nor orpiment, since they make the gold fade.” The author-practitioner does not only indicate the incompatibility of verdigris and orpiment with other colors, but also gives instructions for preventing discoloration caused by these pigments. On fol. 9v he writes: “But to prevent orpiment from fading [in contact] with other colors and make it compatible with these and to make it dry quickly, a most rare secret is to calcine common salt and grind it together with the orpiment.” Furthermore, on fol. 66r he states that “[y]ou must not touch the coat made with gold with your fingers because it will prevent the verdigris from attacking it.”

²¹ Jill Dunkerton, Harold Osborne and Antonia Boström, “gilding,” *The Oxford Companion to Western Art*, Oxford Art Online, Oxford University Press, accessed March 18, 2016, <http://www.oxfordartonline.com.proxy.uba.uva.nl:2048/subscriber/article/opr/t118/e1042>.

Another pigment that receives the author-practitioner's attention is azure. He dedicates a significant number of recipes to instructions for the preparation of this pigment. These recipes focus on the fact that azure should not be ground too finely, since otherwise it loses its color. Examples of recipes that deal with this problem can be found on fols. 6r, 11r, 56v, 58v, and 59r. On fol. 58v the author-practitioner writes, for instance, that "[e]namel azure must not be ground even with some water for it dies and loses all its color." Likewise, on fol. 59r it is stated that "[a]ny azure must neither be ground nor washed for it loses its color and becomes pale."

The last set of recipes that will be discussed here are those that deal with the durability of red lake pigments. The problems discussed in these recipes come closest to the problems associated with yellow lakes and may thus prove most useful in understanding the author-practitioner's approach to scudegrun. As was mentioned above, on fol. 64r the author-practitioner states that "lacquer ... needs two layers," so that it does not fade. Lacquer is here a translation of the French "laque," which applies to red lakes.²² On fol. 56v the author practitioner notes that "[t]he lacquer and rosette from Ghent and elsewhere lose their color and die in contact with the air." Lacquer is again a translation of "laque," and the untranslated "rosette" may refer to a red lake pigment prepared from brazilwood.²³

Another recipe that mentions the fading properties of red lakes can be found on fol. 6r. Here, the author-practitioner writes that "if you want to set some rouge clair and glaze it, grind some Venice lake on the marble with some walnut oil or linseed oil. Once ground mix some turpentine varnish or spike lavender varnish and apply; on gold, [when applied] with the brush, brazil wood and laque ronde fade away." Venice lake is here a translation of "la laque platte de Venise," brazilwood is a translation of "le bresil," and "la laque ronde" has been left untranslated. On fol. 6r the author-practitioner thus seems to make a distinction between a "flat" variety of red lake originating from Venice, which is of an appropriate quality, and a "round" variety, which fades away. Furthermore, the type of red lake made from brazilwood is also distinguished as being of lesser quality. This confirms the author-practitioner's observation on rosette found on fol. 56v.

Conclusion

From a survey of historical sources from the fifteenth through the seventeenth centuries, it has become clear that the author-practitioner would probably have been aware of the fugitivity of scudegrun. Nevertheless, he does not reveal this knowledge in his recipes. It has also been established that there are other recipes in BnF Ms. Fr. 640, in which the author-practitioner does appear to be concerned with the durability of materials and techniques. How do these other recipes compare to the recipes on scudegrun, and what does this tell us about the author-practitioner's approach to the topic of durability? In almost all recipes discussed above

²² Eastaugh, Walsh, Chaplin and Siddall, *Pigment Compendium*, 221.

²³ "Pigment Glossary," in *Trade in Artists' Materials: Markets and Commerce in Europe to 1700*, ed. Jo Kirby, Susie Nash and Joanna Cannon (London: Archetype Publications, 2010), 455.

the author-practitioner states the ephemerality of materials and techniques, while also giving an alternative that does last. Thus he may recommend a superior material, as he does in the varnish recipes or the recipes on gilding. He may also describe methods for making a less durable material or technique last longer, like he does in the recipes on the preparation of azure, or when he recommends using double coats of paint to prevent colors from fading. Notable exceptions are the recipes on the bad practices of scribes, in which the author-practitioner merely seems to warn against these practices, but does not present an alternative.

It is difficult to pinpoint what distinguishes the scudegrun recipes from those in which the author-practitioner does describe the durability of materials and techniques. Perhaps there was no appropriate alternative that the author-practitioner could recommend as a substitute for these fugitive yellow lakes. As was stated before, it appears that many sixteenth and seventeenth century painters continued to use non-permanent pigments for yellow glazes, merely because there was no colorfast pigment available for this purpose. It can thus be cautiously concluded that the author-practitioner's approach to the topic of durability is a most practical one: he only addresses the ephemerality of materials and techniques if he can offer a suitable alternative or a method of making a less durable material or technique last longer. While the author-practitioner would thus have been aware of the fugitivity of scudegrun, he may have not mentioned this in his recipes, because he could not recommend an alternative pigment or a method of making scudegrun last longer. It would be interesting to investigate whether the author-practitioner's practical attitude with regard to the durability of materials and techniques is representative for his time. This could be a topic for further research.

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