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Historical recipes for preparatory layers for oil paintings in manuals, manuscripts and handbooks in North West Europe, 1550-1900: analysis and reconstructions

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BRITISH CANVAS of the finest quality, and made of PURE FLAX, is used by WINSOR & NEWTON, Limited, in the production of their best Artists' Prepared Canvas.

The space afforded by their large Factory, the extensive plant contained therein, and their staff of trained and skilled workmen, enable them to execute all orders with despatch.

The superior method in the preparation adopted by WINSOR & NEWTON, Limited, materially enhances the quality of their Artists' Canvas.—It is dried slowly and without the aid of artificial means, thus the adhesion of the surface of preparation to the ground of raw Canvas is so intimate and thorough as to preclude the possibility of its peeling up or becoming detached in any way.

ARTISTS' PREPARED CANVAS.

	* F. P. S. P. W. F. P. W. S. P. and R.		TICKER OR TWILL CANVAS.	
	Per Roll of 6 yards.	Per yard.	Per Roll of 6 yards.	Per yard.
	s. d.	s. d.	s. d.	s. d.
27 inches wide	10 6	1 10	13 6	2 4
30 " " " " " "	11 6	2 0	14 6	2 6
36 " " " " " "	13 6	2 4	17 0	3 0
38 " " " " " "	14 6	2 6	18 6	3 3
42 " " " " " "	16 0	2 10	21 0	3 8
45 " " " " " "	19 6	3 5	24 0	4 2
54 " " " " " "	25 0	4 5	29 0	5 0
62 " " " " " "	30 0	5 4	36 0	6 5
74 " " " " " "	36 0	6 5	42 0	7 6
86 " " " " " "	45 0	8 0	52 6	9 6

* F. P., Full or Double Primed; S. P., Single or Half Primed; W. F. P., Full Primed, White Ground; W. S. P., Single Primed, White Ground; R., Roman.

Figure 9.1 Page 13 from an 1897 catalogue of London based supplier of artists materials Winsor & Newton.

Photograph © ColArt International Holdings Ltd

Chapter 9 Professional primers

Canvas is now generally used for painting in oil. It is kept at the artist's colourman's ready primed, of various widths, and but a few hours notice is required to fix it on a frame of any dimensions.

Reeves and sons' amateurs' and artists' companion (1852)¹

What do the authors of historical recipe books reveal about the role of commercial ground preparation, and which aspects attract their attention? These are questions that are addressed in the present chapter. While some previous studies include information about the role of commercially prepared supports,² a general overview of comments in historical sources on the role of commercial ground preparation has not been provided by previous research.

Understanding the role of commercial suppliers helps to evaluate the freedom – or possibly lack of freedom – of artists to influence the material characteristics of their primed support. As the materials and colour of the preparatory system can influence the subsequent technique employed in a painting, knowledge of the role of commercial suppliers helps to further our understanding of choices made by artists during the paint application stage. These choices can contribute to the preservation or degradation of the painting.

As the present chapter will demonstrate, relations between commercial suppliers and artists were not always without strain. Some artists (or authors) wrote that commercial suppliers are more interested in their profit than in supplying a stable, lasting support. Discussions on this topic reveal important information about the factors influencing ground stability and ageing.

9.1 Documentary evidence for the existence of professional primers

Although we might expect that in the sixteenth century artists generally relied on their own workshop for the preparation of their supports, documentary evidence demonstrates that this was not necessarily the case. Abraham (1989) discusses a letter by Dürer, who writes in 1507 that he will send a panel to the 'preparer' ('Zubereiter') in order to have it covered with the ground.

¹ Reeves and sons' amateurs' and artists' companion 1852: 50

² For instance Kirby 1999, Abraham 1989, Duggen 1994, Carlyle 1991 and 2001, Callen 2000, Henny 2000, Hendriks and Geldof 2005

Abraham also found evidence in the Haarlem archives of payments for the preparation of five canvases by a professional primer and mentions the fact that in the seventeenth century in Haarlem, professional primers were included amongst the members of the guild of St Luke.³ Nearly all canvases used for the large ensemble at the *Oranjezaal* in Paleis Huis ten Bosch (1648-52), in which twelve Flemish and Northern Netherlandish painters were involved, were ordered centrally from a professional primer active in Haarlem, François Oliviers. Details on the agreement with the primer have survived in a contract.⁴ By the seventeenth century, the existence of professional primers and dealers in art materials is also recorded in other Dutch cities, as well as in England and in Italy.⁵ Around this time, standardisation with regard to canvas and panel dimensions is documented in North European countries.⁶

Research by Bruquetas-Galán (2002) discusses the activities of professional primers in seventeenth century Spain. Here, some less successful painters made money by priming supports for other painters, sometimes with such frequency that by the middle of the seventeenth century they were called ‘asporejadores de lienzo’, which translates freely as ‘linen preparers’.⁷

Although for ensembles, central ordering of ready primed supports of a similar colour seems logical, this was not necessarily always the case. The canvases of the Rosenborg series in Copenhagen (1618-24) are executed on four differently coloured types of grounds: dark red, orange-brown, light coloured or dark and more course reddish preparations.⁸ The difference in preparation method suggests that the canvases were not centrally primed and then handed out to the different painters, as was the case in the *Oranjezaal*. In some cases, like the chamber painted by Ferdinand Bol for the Nieuwegracht 6 in Utrecht, a difference in the grounds employed within a series of canvases can be related to a gradual development of the concept.⁹ For the Rosenborg series, researchers did not find any indications that the concept developed gradually.

³ Abraham 1989: 31-2. Abraham comments on the interesting fact that the five canvases were primed by a ‘stofferder’. The profession of ‘stofferder’ is associated to the decoration of carved statues. (See Vandamme 1982: 85-6 and Truyen 2000: 88)

⁴ Van Loon et al. 2006: 218-19; Van Gelder 1948-49: 121-2. Unfortunately, no further details are known about Oliviers.

⁵ Henny 2000, Kirby 1999: 27; Haaf 1987: 7; Wallert et al. 1999: 11, Hendriks 2006:77; Van de Wetering 1997: 22.

⁶ See Wadum 1998: 160, Kirby 1999: 20 and Streeton and Wadum 2012: 95 about standardization of panel formats and Bruyn 1979, Van de Wetering 1997: 126, 303-4, note 88 and Kirby 1999: 23-6 for a discussion of standard loom widths and standardization in canvas sizes in the seventeenth century South and North Netherlands.

⁷ Bruquetas-Galán 2002: 314.

⁸ Although paintings in the Rosenborg series are, as Haack Christensen writes, ‘a single commissioned decorative scheme’, four different ground colours are found on the fifteen paintings, all executed on flax canvases: dark red, orange-brown, light coloured, dark and more course red grounds. It is thought that pigments were supplied by the Royal Painting Material Stores. Haack Christensen 2011b: 153-5.

⁹ See Van Eikema Hommes 2012, discussed in Paragraph 8.7 of this dissertation.

9.2 Evidence for the existence of professional primers in historical recipe books

Seventeenth century sources in England, Italy and in France allude to the use of canvases which are primed professionally¹⁰ and certainly the anonymous British *Excellency of the pen and pencil* of 1668 suggests the widespread use of ready-made canvas:

I could teach you how to prime it [the canvas], but it is a moiling work, and besides, it may be bought ready primed cheaper and better than you can do it your self. Few painters (though all can do it) prime it themselves, but buy it ready done.¹¹

Whether professional priming inevitably leads to standardisation during the seventeenth century, may be disputed. The case of the ‘asparejadores de lienzo’, described above, shows that the distance between professional primers and artists was sometimes still very short.

Instrumental analysis of the pigments and binding media employed by a number of travelling artists shows that these artists used local materials and painted on supports prepared according to local tradition. Adaptation to local customs is noted for instance in studies on the works of Peter Paul Rubens, who frequently employed reddish grounds while travelling in Italy, while the canvases he produced in Flanders are usually prepared with a double ground similar in layer build-up and composition to those used by other Antwerp artists.¹² Similar adaptations to local materials and customs have been reported from within the *oeuvre* of Van Scorel, Van Dyck, Poussin and Sweerts.¹³ Whether these examples can be explained by the purchase of ready-primed supports by these artists, if they employed professional (local) primers or if they themselves were influenced by local tradition when they prepared canvases themselves, is unfortunately not certain.

9.3 Artist-primed canvas

Despite the existence of professional primers, Chapter 5 has demonstrated that authors continue to provide recipes for preparatory layers until the end of the period under consideration. This suggests that at least some artists applied their own preparations. Indeed, documentary evidence supports this assumption. Spanish ordinances, written between 1619 and 1620, explain that amongst the first things that painting pupils learn is grinding the colours and preparing supports for painting.¹⁴ Frenchman Lebrun (1635) writes that priming ‘is the work of the boy’, a young apprentice inside the studio.¹⁵ Palomino (1724) has a more distant relationship with the preparation of supports for

¹⁰ Symonds c. 1650-2: 102v describes commercial canvas priming in London, in Purpoole Lane; Volpato c. 1670 (transcribed in Merrifield 1849 (1999): 729) discusses the quality of ready-primed canvas in Italy; French de Piles 1684: 62-3 writes about commercially primed canvas.

¹¹ *Excellency of the pen and pencil* 1668: 92.

¹² Van Hout (unpublished) 2005: 183.

¹³ Duval 1994 (on Poussin); Roy 1999a: 50 (on Van Dyck); Wallert and De Ridder 2002: 39 (on Sweerts); Kirby 2011: 56 (on Van Scorel).

¹⁴ ‘Ordonanzas de los doradores madrileños y pleito con los pintores’, AHN, Consejos, leg.24.783, transcribed in Bruquetas-Galán 2002: 314, 488.

¹⁵ Lebrun 1635 (transcribed in Merrifield 1849 (1999): 770,772).

painting, writing that the artist should know how canvas is prepared so he can order it properly.¹⁶ Even though the artist does not apply the ground himself in this case, this source does provide proof of the close relationship that still exists between artist and supplier.

A reason for artists to keep a keen interest in the preparation of their supports is provided by the Volpato manuscript (c. 1670) in which it is stated that some shops sell bad quality canvas. In the view of the anonymous author, this applies in particular to canvases prepared with flour paste.¹⁷

A number of more recent recipe books provide a second reason for recipe writing to continue at a time when prepared supports are produced commercially. These books, dating from the eighteenth and nineteenth century, identify their intended audiences as artists who live in the country, far away from the city. Such artists would by their location be obliged to learn to paint as an autodidact and to prepare their own materials, with only books to guide them. Although Spanish Hidalgo (1693) is the only seventeenth century author who defines his audience as consisting of those who do not have any other source of information available, it is apparent that similar motives drive other authors. As much is evident in, for instance, the introduction of the treatise by Dutens, published in 1779, who proclaims to be writing for 'citoyens' living far from the big cities, or much later, when Dietrich (1871) explains that he writes for 'gifted dilettants, who lack the opportunity, to be taught by greater artists'.¹⁸ The fact that many of the recipe books discussed in this thesis know several editions and some translations as well, as evidenced in Appendix 2, demonstrates that there is a market for books that include recipes for the preparation of painting materials throughout the period. Some nineteenth century sources discuss how artists may modify commercially prepared supports. This is a third reason for authors to continue providing recipes. Commercially available grounds did not always suit the particular wishes of the artist regarding colour, texture or absorbent qualities (see Paragraph 9.5).

Callen (2000) in her study of French impressionist materials writes that the nineteenth century industrial revolution results in an increased distance between producer and user of painting materials, while the production scale of painting materials increases. She mentions mechanised grinding in particular as a development that allows for increased paint production.¹⁹

Archival research of commercial almanacs and *annuaires de commerce* by Roth-Meyer (2010) on the subject of nineteenth century colourmen active in Paris provides insight on the characteristics of colourmen in such a large city. She finds evidence for the activity of a large number of smaller entrepreneurs who sell artists' supplies, often as small family businesses. The activities of these commercial manufacturers are manifold: they sell artists supplies and tools, restore paintings, some manufacturers are active as editors or

¹⁶ Palomino 1715, 1724, vol. 2 1724: 34-5.

¹⁷ Volpato c. 1670 (transcribed in Merrifield 1849 (1999):729-731). Instead, the Volpato manuscript advises a preparation consisting of an animal glue size layer followed by two layers of earth ('terra da bocali') in linseed oil.

¹⁸ Dietrich 1871: 1.

¹⁹ Callen 2000: 4.

publishers of manuals on oil painting, and the more well established play a role as jurors in *expositions universelles*.²⁰ Whether this situation is exemplary for commercial manufacture in other large European cities is a question for future research. Certainly the Winsor & Newton archive manuscripts, the topic of Paragraph 9.6 below, demonstrate a close relationship with artists. While standard sized supports with different types of priming were offered, orders for individual painters were still taken.²¹ The Winsor & Newton archive manuscripts furthermore document experiments leading towards the introduction of new materials, and shows an interest in a wide range of subjects related to paintings, including their restoration.²²

Callen links the expansion of the market for painting materials that takes place during the nineteenth century in part to the emergence of a new type of 'artist': the amateur painter. She describes the evolution of the middle class, who in the early nineteenth century find themselves with more leisure time at their disposal, look upward in society for inspiration and adopt painting as a past-time.²³ Although some authors consider oil painting a messy business, the number of recipes published for the 'amateur' suggests that oil painting is indeed taken up by many of them. Quoting from the anonymous *Elegant arts for Ladies* [1856]:

many ladies are prejudiced against painting in oils; they think it difficult, dirty, and unhealthy. As to its difficulty, it is nearly as simple, and far more easy to correct when a mistake is made, than watercolour drawing; for while the latter requires the greatest care to keep the *lights* untouched with the brush, in oils they are laid on, and may be extended and altered at pleasure, or the picture entirely painted out and begun afresh. ... As to its being a dirty employment, the reader must consider it is now very different from what it was fifty years ago. There are now so many beautiful contrivances for neatness and expedition, so many things made ready for the artist's hand, which formerly he had to prepare himself, that he has now a comparatively easy task.²⁴

Indeed, the introduction of several new, easily transportable supports, as well as that of the collapsible paint tube, may have played a role in making oil painting more attractive to amateurs.²⁵ Also the convenience of commercially primed canvases draw attention from nineteenth century authors. In 1845, Osborn writes:

canvas is sold at so much the square foot; that which is twilled, or ticking as it is otherwise called, costing fifty per-cent more than the plain. It is kept, ready-primed, in rolls of various width, at the colormen's, who need but a few hours notice to cut it and distend it on the

²⁰ Roth-Meyer 2010.

²¹ Similar relationships between colourman Roberson and his customers were discussed by Carlyle. See Carlyle 1991, vol. 1: 363 and Carlyle 2001: 271.

²² For a reference to restoration, see W&N manuscript '29', 1871-2: 29P009L01.

²³ Callen 2000: 4.

²⁴ *Elegant arts for Ladies* [1856]: 86

²⁵ Callen 2000: 4.

frame to any proportion that may be desired. There are however certain sizes which have obtained for many years among artists, especially for portrait-painting, and these are always kept on hand at the shops, ready-mounted on the frames, or stretchers.²⁶

Besides convenience, production costs may have played a role in the adaption of ready-primed canvas. According to the Susse brothers (1845), commercially prepared canvas is usually cheaper than self-prepared grounds.²⁷

Some of the new, ready-primed supports, such as Academy boards, canvas boards and oil sketching paper, are considered highly suitable for outdoor painting. The *Elegant arts for ladies* (1856) describes their availability and qualities, convenient for amateurs interested in oil painting:

the prepared millboards for painting on, are of all sizes, from 6 inches by 8, to 24 by 20, and the prices are from sixpence to three shillings each. Academy boards are similar, but thinner and cheaper, and may easily be cut to what size you like. Oil sketching paper (which is only drawing-paper covered with two or three coats of paint) is cheaper still, and for first trials is very useful. It must be fastened with drawing-pins to a board when used, or if a very small sketch, it may merely rest on a board or a book. We prefer these boards to canvas, which is dear, and requires to be put on a stretching frame.²⁸

Notwithstanding the praise for these new, probably cheaper supports,²⁹ canvas remains the support most advised for finished paintings during the nineteenth century, especially for professional painters.³⁰

9.4 The quality of commercially primed canvas

No seventeenth or early eighteenth century authors complain about the quality of commercially available supports. However, in the middle of the eighteenth century, Englishman Robert Dossie (1758) expresses concerns about their quality. He writes:

the pieces of canvas prepared by proper primings, are then by painters called cloths. But these cloths, though they are dispensed with in general, because painters think it too

²⁶ Osborn and Bouvier 1845: 114. See Carlyle 1991, vol. 1: 255 and Carlyle 1991, vol. 2: 314-6, Carlyle 2001: 185,447-9 for information on standard sizes available in nineteenth century Britain.

²⁷ Susse 1845: 22.

²⁸ *Elegant arts for ladies* n.d. [1856]: 87.

²⁹ Contradicting the *Elegant arts for Ladies*, Templeton (1845) states that canvas is the least expensive support, at least in comparison to its size. Templeton 1845: 12.

³⁰ Although no research has been conducted into the exact ratio of the use of canvas in comparison to other supports, the collections of nineteenth century paintings in the major European museums show a much larger number of canvas paintings. This trend is also noted in some nineteenth century sources, which state that canvas is the preferred support. Osborn and Bouvier 1845: 114-7 write: 'Canvas is now what may be called the universal subjectile for pictures in oil' *Reeves and sons' amateurs' and artists' companion* 1852: 50: 'Canvas is now generally used for painting in oil'.

much trouble to prime them themselves, and therefore make shift with what the colourmen will afford them, who on their side likewise consult nothing but the cheapest and easiest methods of dispatching their work, are yet at present prepared in a faulty manner in several respects. In the first place, the whole covering is apt to peel and crack off from the cloth, by the improper texture of the under coat, which is formed of size and whiting; and is both too brittle, and too little adhesive, either to the cloth or upper coat, to answer well the purpose. In the second place the oil used in the composition of any paint used on such grounds, is extremely apt to be absorbed or sucked in by them; and consequently to leave the colours, with which it was mixt, destitute in a great degree of what is necessary for their proper temperament. This is called, though improperly, the sinking in of the colours, and is attended with several inconveniencies; particularly, that the effect of the painting appears very imperfectly while the colours are in this state, and deprives the painter, as well as others, of the power of judging properly of the truth of the performance.³¹

Dossie continues to say: 'Whoever therefore would have good cloths, free entirely from this disadvantage, must direct the preparation of them themselves'.³² No such worries are present in the German *Oekonomische Encyclopädie* (vol 76, 1799), published by Krünitz. The entry on canvas painting repeats Félibien's 1676 recipe for a double ground with a layer of red earth followed by a grey, lead white based oil layer and Krünitz writes: 'In France paint sellers offer similarly prepared canvas in several sizes, from one foot to six foot in height and from 9 inch³³ to 4 feet ('Fuß') in width'.³⁴ Also Dutch author Van Leen (c. 1800) describes commercially available canvas without any note of concern regarding its quality. This author states that 'Brabant primed canvas is generally used and available from most sellers of wall hangings in different widths'.³⁵ However Ibbetson (1803), writing in England, is as wary as his countryman Dossie of professionally primed canvas:

the colourmen, to whom everything is left, begin by brushing the cloth over with strong glue, to lay the flue, and prevent its absorbing any oil, as I suppose: then, with stiff paint, the greatest part of which is whiting, they plaster over the glue twice, seldom 3 times; it is then done, when the excise man has stamped it. In a very short space of time, if kept in

³¹ Dossie 1758: 202.

³² Dossie 1758: 203.

³³ The original text uses the word 'Zoll'. According to contemporary dictionaries, 'Zoll' can be translated as inch. See for instance: *Nathan Bailey's Dictionary English-German and German-English, Gänzlich umbearbeitet von D. Johann Anton Fahrenkrieg*, volume 2, German-English, Leipzig and Jena: Friedrich Frommann, 1810 : 766, and Johann Ebers, *New hand-dictionary of the English language for the Germans and of the German language for Englishmen*, vol 1, Halle: Renger, 1800: 952. According to Johann Friedrich Krüger, *Vollständiges Handbuch der Münzen, Masse und Gewichte aller lander der Erde*, Quedlinburg und Leipzig: Gottfr. Basse, 1830: 378, the 'Zoll' can refer both to a tenth or a twelfth of a foot.

³⁴ Krünitz 1799 vol 76: 623-5.

³⁵ Van Leen c. 1800: 18. The fact that they are available from 'wall hanging sellers' implies that the same quality of canvas was employed in interior decoration.

rolls, it gets so brittle, that it would be as easy to unfold a manuscript of Herculaneum as this, without breaking or cracking in ten thousand places. -If the picture be hung in a damp place, it comes off altogether in great flakes; and in time, with the greatest of care, it becomes covered with circular cracks, like network, for which there is no remedy.³⁶

The posthumous 1828 edition of Ibbetson notes that 'the preparation of canvass is now so superior to what it was twenty-five years since, that the student need not feel any apprehension of meeting with it, of most excellent quality, at the shop of any respectable colourmen'.³⁷ Field (1835) also comments on the good quality of colourman-prepared grounds, and states that it would 'require little comparative attention from the artist, beyond such a general knowledge of their proper qualities and effects as may enable him to choose such as are best suited to his purpose'.³⁸ Mogford (1851) in his *Handbook for the preservation of pictures* concludes that:

canvas grounds are produced of such tenacity, durability, and general excellence, as were never before attainable for the purposes of art, and which must materially aid the preservation of modern works executed upon them; they have the most important merit of not being liable to crack, or to peel or tear away from the cloth they are worked on, and, beyond all, damp has but little or no influence upon them.³⁹

While British sources in the 1830s to 1850s seem rather positive about the quality of commercially available canvas,⁴⁰ German author Fernbach in 1834 expresses his worry at the low quality of certain types of canvas preparation. He draws attention to the use of much sugar of lead (lead acetate) in commercial canvas preparation, added with the purpose of speeding up the drying so the canvas can be sold sooner. According to Fernbach, this will lead to lead-acetate crystals on the surface of the canvas, providing the painting with a 'raw' surface, a yellow discoloration that in time turns brown.⁴¹

In later nineteenth century sources, negative remarks are found about commercially prepared canvas. Vibert (1892) considers the quality of commercially prepared canvas dramatically low. The following quote explains why Vibert is worried, in this case about canvas that is commercially prepared with an oil-bound ground:

³⁶ Ibbetson 1803: 11.

³⁷ Ibbetson 1828: 1. The 1828 edition was probably edited by his wife. Carlyle 2001: 308-9.

³⁸ Field 1835: 213.

³⁹ Mogford 1851: 5.

⁴⁰ Carlyle 1991, vol. 1: 255-257 and Carlyle 2001: 185-6 discusses the availability of primed canvas in nineteenth century Britain, including information from the catalogues of London colourmen Winsor and Newton and Reeves and from the bought ledgers of Roberson. Nineteenth century availability of panels and boards is discussed in Carlyle 1991, vol. 1: 258-262 and Carlyle 2001: 187-90, of oil sketching paper in Carlyle 1991, vol. 1: 262-264 and Carlyle 2001: 190-1. Field 1835: 213 comments on the high quality of commercially prepared supports available, as does Mérimée 1839: 219-20, who complains that formerly, the presence of litharge in earth-based grounds would result in a 'sandy' surface, but that nowadays, 'the colourmen, for their own sakes, are excited to prepare their canvasses with more attention, for any negligence in these essential matters would ruin their trade.'

⁴¹ Fernbach 1834: 2-3. Compare with Mérimée 1839: 219-20.

this canvas [=with commercially prepared oil ground, rolled immediately after preparation] is therefore perfect? For the tradesman, yes! But it is yellow, it has a disagreeable odour, and pictures painted on it remain to posterity blackened and cracked. Of course manufacturers do not work for posterity.⁴²

The *Technische Mitteilungen* (1891) also contain remarks on the quality of commercial grounds, in an article by A. Reith titled 'for an improvement of oil paint and painting grounds'. Reith's emphasis is on ground colour and type of filler. 'Very diverse are the grounds offered in the trade', he writes, 'however the ground which is designated as the best by insightful and technically trustworthy men, the white ground, is seldom found'. The author continues to discuss the light-reflecting qualities of white grounds. He describes the advantages of gypsum as a filler for reflective white grounds and finishes his exposé by saying that he wishes that by 'this renewed appeal, the manufacturers would feel motivated to only use gypsum in the preparation of painting grounds, also on canvas'.⁴³ In an 1893 issue, the same *Technische Mitteilungen* pinpoints a different problem associated with the stability of the canvas support, the fact that the quality of most canvases is lower due to the use of acids or acidic starch coatings for warp threads during the weaving process.⁴⁴ The exact consequences of these coatings for the longevity of the painting are, unfortunately, not described.

9.5 Artists' modifications of commercially primed canvas

Recipes provided by Tyrwhitt and McDonald (1868) and by Grace (1881) draw attention to the fact that artists may modify commercially prepared canvas to fit their personal needs.⁴⁵ No pre-nineteenth century written references to the modification of commercially prepared canvas are found. This is interesting, since earlier in this chapter the fact was discussed that commercially prepared canvas is available as early as the seventeenth century. It is conceivable that the advice of Tyrwhitt and McDonald, and of Grace is the result of a growing distance between the artist and the commercial manufacturer.

Tyrwhitt and McDonald (1868) advise the application of an additional ground layer to a commercially prepared canvas in cases when the artist would execute the painting in a single layer or when making an oil sketch. In that case, 'an extra thick coat of warm white' should be applied. 'It will give him [= the artist] good texture to work on -just as important a matter in oils as in water-colour- and it will prevent the colours sinking into the canvas when drying, and make them bear out as brightly as on paper'. This warm white is made

⁴² Vibert 1892: 101-2.

⁴³ *Technische Mitteilungen*, nr 123 (1891): 91-2.

⁴⁴ *Technische Mitteilungen*, nr 162 (1893): 238.

⁴⁵ This is first pointed out by Carlyle 1991, vol. 1: 243; Carlyle 2001: 174-5. The application of additional layers of lead white to a commercial ground has been documented for the Pre-Raphaelite painters Millais, Holman and Rossetti. Townsend et al. 2004: 58, 80-81. Also Impressionist painters modified canvases with additional layers. Callen 2000: 66. G.F. Watts sometimes applied up to four layers in addition to the commercially prepared grounds present on the canvas. Ridge and Townsend 1998: 223-225.

from lead white with small amounts of cadmium or yellow ochre and pink madder. The paint is thinned with a little turpentine. It is applied with a brush and subsequently made even by dabbing with a folded handkerchief, 'but a certain amount of roughness where sky and distance are to come will do rather good than harm'.⁴⁶ Whether the commercial ground in this case is absorbent or non-absorbent is not clear. Grace (1881) specifies the use of absorbent canvas. He advises to only purchase so-called 'half-primed' canvas, prepared with a layer of glue and chalk, since he considers fully primed oil canvases too non-absorbent. Grace reasons that if the oil cannot penetrate and if there is no grain or tooth to hold the paints, the painting will crack at the interface between ground and subsequent paint layers. The half-primed canvas that the artist is advised to purchase must have a fine but rough texture, 'so that in passing your finger over it you feel the tooth', because 'this grain gives a hold to the colour.' On top of this layer, the artist is advised to apply his own oil ground, consisting of a layer of lead white, chalk (2 parts lead white to 1 part chalk), a little linseed oil and some turpentine oil if thinning is required. The linseed oil will 'cement' the particles whereas the turpentine will evaporate, Grace adds. Before painting, the stark whiteness of the ground needs to be softened with a light wash of turpentine-diluted oil paints, containing only yellow ochre in lighter areas and a mixture of yellow ochre and ivory black in other areas.⁴⁷ While Grace advises diluted oil paint for this purpose, Carlyle (1991, 2001) quotes nineteenth century British manuals that describe a toning layer of watercolour paint.⁴⁸

9.6 Information on preparatory layers in the Winsor & Newton archive

The first half of the nineteenth century witnesses the establishment of paint manufacturers like Winsor & Newton in London.⁴⁹ Manuscripts and workshop books preserved in the Winsor & Newton archive create the picture of a company that is open to new discoveries, in particular those which facilitate production and improve product quality. The manuscripts show that Winsor & Newton was interested in innovations for the preparation of supports for painting (Appendix 16). They contain ideas for improvements and describe experiments such as attempts to use 'lac in ammonia',⁵⁰

⁴⁶ Tyrwhitt and McDonald 1868: 338-9. Pink madder is a red lake pigment. Ground texture is the subject of paragraph 6.7.

⁴⁷ Grace 1881: 85-8.

⁴⁸ Carlyle 1991, vol. 1: 285-6. Carlyle 2001: 209-10. Carlyle also describes toning with oil colours. The toning layer advised by Osborn (1845) consists of locally varied warm orange tones. The fact that local colour or intensity variations exist within this layer, makes it an underpainting layer and not a ground layer according to the definitions used in this dissertation. However it is recognized that during sampling this layer could easily be mistaken for a uniform overall layer. Osborn 1845: 275 in Carlyle 1991, vol. 1: 286 or Carlyle 2001: 210.

⁴⁹ Reeves and Sons was established in 1766. http://www.gracesguide.co.uk/Reeves_and_Sons, accessed 29-10-2013. Charles Roberson was established 1810; <http://www.robco.co.uk>, accessed 4-12-11. Winsor and Newton was founded 1832; <http://www.winsornewton.com>, accessed 4-12-11. Schmincke and Co. was founded in 1881, <http://www.schmincke.de>, accessed 13-9-2012. Senellier was established much later, in 1887, <http://www.senellier.fr>, accessed 13-9-2012. Roth-Meyer wrote her PhD dissertation on the many smaller 'marchands de couleur' who were active in nineteenth century Paris. Roth-Meyer 2004. The production of Lefranc in Paris increased a lot when they established a new factory in 1836, with a steam engine to drive the grinding mills. Roy et al. 1990: 36.

⁵⁰ 'Lac' is probably 'shellac'. The fact that the last line of the recipe states that the lac should first be bleached since it is 'rather too brown in colour' fits with this hypothesis. W&N manuscript '17' 1834-55: 17P032L10, 17P033L10. Recipes for a size layer of shellac in ammonia are also described in W&N manuscript 'Omnm Gath No 12 1836-50: 12P012L18 and 12P039L17. Carlyle (1991, 2001) provides a number of references to

possibly with an addition of wax, as a size layer, or for instance a note about the use of 'soap of ammonia' or of borax, orange shellac and water⁵¹ as size layer material instead of animal glue.⁵² Notes dated between 1836 and 1850 discuss the possible suitability of zinc white for ground preparation.⁵³ The machinery is also modern; a number of recipes for the preparation of oil binding media and for varnishes, describe the use of 'high pressure steam cisterns',⁵⁴ and the company considers the possible advantages of the application of 'heated rollers' in canvas preparation (see below).

Although the Winsor & Newton manuscripts demonstrate that quite a large range of recipes and formulations are tested and employed,⁵⁵ as noted in Carlyle et al. (2008), the complexity and variation of the procedures described is not reflected by the company's catalogues.⁵⁶ For instance an 1897 Winsor & Newton catalogue lists the availability of two different qualities of prepared canvas: 'plain single prime' and 'absorbent plain' (See Fig. 9.1 for an example of a page from a Winsor & Newton catalogue).⁵⁷ Nothing is seen of individual differences between recipes or batches even though the manuscripts demonstrate that such differences must have existed. This is a very important point, since it shows that although company catalogues are a valuable source of information, no firm conclusions about manufacturing details should be based on their contents. The conclusion that differently prepared canvases may have been sold under a single name, is confirmed in recent research of Vincent Van Gogh's primed canvas ordered from the Paris

white lac varnish in nineteenth century British recipe books, the first of which is Field, 1835. Field refers to a premium he was awarded in 1827 for developing a method for bleaching lac-varnish. Carlyle finds that references in historical recipe books to the availability and use of bleached lac only appear after Field's publication of 1835. White lac varnish is praised as a stable material, not prone to bloom or crazing. Its application is difficult, since the solvent it contains (alcohol) can quickly affect and dissolve the paint. Carlyle 1991, vol. 1: 120-6; Carlyle 2001: 87-92.

⁵¹ W&N manuscript 'P.09. 1846-1854' 1844-93: 9PP016L01.

⁵² (Harley 1987: 80) writes that by 1928, Winsor and Newton are employing viscose as a size layer for canvas in their more exclusive range called 'Royac primed' canvases. According to Harley, viscose is employed instead of animal glue because 'it would not degenerate in the same way as an aqueous glue size was liable to do', and it would be more dimensionally stable in changing environmental conditions.

⁵³ W&N manuscript 'Omm Gath No 12', 1836-50: 12P031L04. The use of zinc white in grounds is discussed in more detail in Paragraph 10.3.3.

⁵⁴ For instance: W&N manuscript 'Varnish book No. 2, 1850-63: V2P097L01, V2P330L01, V2P376L01.

⁵⁵ Some of the recipes from the manuscripts clearly concern tests or trails, whose success or failure is evaluated in the manuscripts. Other entries have the character of production notes. Some include calculations of the costs and time required, others record and explain variations between different batches or procedures. A good example of this last category of recipes are the entries on the preparation of a canvas ground consisting of several layers ('first colour', 'second colour' and 'third colour') in W&N manuscript 'Varnish book No. 2'. These recipes clearly show that very similar ground mixtures are prepared on a number of occasions, on different days and with slight differences in the composition. For instance the recipe with recipe code V2P361L01, dated 17 May 1866, includes the line: 'This has a larger portion of Drying Jelly in its comp. than the pan prepd - p 340 on account of the difference in the 1st colour oil'. W&N manuscript 'Varnish book No. 2', 1850-1863: V2P338L01, V2P360L01, V2P361L01, V2P376L01, V2P424L01, V2P423L01, V2P444L01, V2P526L01.

Recipes for the preparation of the same type of ground also appeared in W&N manuscript 'P2' 1848-1854: P2P126AL01, P2P126AL16.

⁵⁶ Carlyle et al. 2008a

⁵⁷ Blue sheet of paper 'stock of canvas' in: *Wholesale Catalogue*, London: Winsor & Newton limited, n.d. [1897]: between pages 98-99. The same catalogue lists the availability of 'first' quality and 'second' quality 'single-primed' canvas ('foreign fabric') and 'best quality' prepared millboards and Academy boards. No details are provided in the catalogue about their preparation. <http://www.winsornewton.com/resource-centre/historic-catalogues/>: 98-106, accessed 13-9-2013.

colour merchant Tasset et l'Hôte. Salvant et al. (2013) investigated the grounds of a number of these canvases, ordered by Van Gogh under the name of 'toile ordinaire'. The researchers found that the composition and layer build-up of the canvases demonstrate marked differences, notwithstanding the fact that Van Gogh most likely ordered them all as 'toile ordinaire'.⁵⁸

The observations accompanying some of the Winsor & Newton recipes shed an interesting light on factory procedures.⁵⁹ For example the following observations on the results of boiling a batch of 'first colour for canvass' on October 28, 1856, show how even when a procedure is 'run of the mill', at least according to the number of recipes,⁶⁰ the colourman deals with varying results. The recipe describes the production of a batch of '1st colour oil', a binder for canvas grounds, and then observes:

This [= the procedure] made rather a dark colour to look at in the pan, but it lightens very much on drying in the canvass- and when the proper quantity of 1st Lead colour bottoms is added the tint will do very well.⁶¹

The quote not only demonstrates how individual batches may vary, but also shows the flexible attitude of a colourman, who was clearly willing to give varying products a try.

Another important conclusion that may be drawn from the recipes in the Winsor & Newton manuscripts is that waste products from one process, for instance the deposits found in the vats used for varnish manufacture, are used for other purposes or as an ingredient in other processes.⁶² A note about millboard preparation includes the following comment: 'never use size the least stale for the fronts and use all the bottoms of the mixtures for the backs',⁶³ and in a recipe for millboard grounds it is written that 'the

⁵⁸ Salvant et al. 2013: 182-201. Haswell et al. 2012 examined the composition of grounds of Vincent van Gogh that are known to have come from the same bolt of commercially prepared canvas and conclude that even within a single large canvas, variations in composition may occur.

⁵⁹ These notes are not dissimilar in style and content to the observations recorded in the seventeenth century by Charles Beale (1677, 1681). They show a similar practical and constructive attitude towards variations in the results of preparation processes; batches turned out differently, formulations varied.

⁶⁰ 1st colour oil is mentioned as an ingredient in a number of recipes, for instance in W&N manuscript 'Varnish book No.2' 1850-63: V2P340L01; V2P360L01; V2P361L01; V2P375L01; V2P376L01, V2P423L01, V2P424L01, V2P444L01, V2P521L01; V2P526L01; also in W&N manuscript 'P.04 1836-Private Copy of Processes. Vol 1st' 1834-93: P4P140L01; in W&N manuscript 'P8' 1840-1878: P8P018AL01. It must be noted here, however, that some recipe books are copies of other books. Therefore the actual number of instances will be lower. However, 'varnish book No.2', which records a number of different batches for the preparation of '1st colour', demonstrates clearly that this type of recipe is made a number of times. See Appendix 16 for the full text of the recipes.

⁶¹ Consisting of 'putty' made with raw oil and 'boiled oil foots' [deposit after heating oil with siccatives], thinned with raw oil, heated for a long period (the recipe includes a 'George', who worked 8 ½ days on the mixture, and 'Geale', who spent 6 hours). W&N manuscript 'Varnish book No. 2' 1850-63, recipe date 1856: V2P444L01 .

⁶² The historical overview describes the preparation of a ground for canvas, dated 1871, which uses '1st color oil', prepared from amongst others 'varnish bottoms', the dark deposit found in the vats used for varnish preparation after the liquid, clearer varnish had been poured off. (See for an in-depth analysis of this particular recipe Carlyle et al. 2008: 113-5).

⁶³ W&N manuscript 'A relic of old times 1833 P.01' 183?-1876: REP029L15.

returns' are used in subsequent layers.⁶⁴ No material seems to be wasted. Although it is by no means surprising that a company intending to make a profit tries to find a purpose for all leftovers, this fact is of enormous importance for our understanding of possible differences between professionally primed supports and 'home'-primed supports. It may explain the presence of a larger variety in the quality of ingredients employed in commercially prepared grounds in comparison to artist-prepared supports, although we know at least from some examples that artists are economical with their materials too.⁶⁵

A second difference between commercial manufacture by Winsor & Newton and recipes for small-scale canvas priming inside the artist studio may be found in the length of time that materials or mixtures of materials are kept before they are used. Recipes quoted above, employing the deposits in the varnish vats, include the information that the composition made for canvas preparation, the 'putty', needs to age six to twelve months before use. It needs this time to become more viscous, since otherwise it will stain the backs of the canvases. Besides, ageing also improves its drying properties. The phrase: 'for a batch of cloths take 60 lbs out of the oldest pan in stock', demonstrates that the factory kept a number of pans with 'putty', all waiting until they had rested long enough to be fit for use.⁶⁶ This type of procedure and this scale of manufacture is not discussed in any recipe book that gives advice to artists or amateurs on the home-preparation of canvas.

Besides recipes, the Winsor & Newton manuscripts contain a number of entries calculating the estimated costs of certain processes, calculations including both labour and materials. Such notes include the 'cost of canvass preparing', calculated 'a piece' or 'per yard'⁶⁷ and the costs of preparing certain mixtures used in canvas preparation.⁶⁸

Until the end of the nineteenth century, the Winsor & Newton recipes show that ground preparation was done by hand. It may seem surprising that no machine-prepared grounds were produced, since already in 1829, De Montabert discusses seemingly successful experiments with machine-applied grounds layers:

preparatory layer [has been applied] for canvas with the aid of two cylinders; this method has succeeded, and the colour has been well spread and well adhered to the canvas, of which, at the same time, being flattened by the pressure, the second layer can be omitted.⁶⁹

It appears that machine-applied ground layers did not catch on, at least machine priming does not receive any more attention in historical recipe books until late in the 19th

⁶⁴ W&N manuscript 'A relic of old times 1833 P.01' 183?-1876: REP043L08.

⁶⁵ As seen for instance in the much earlier notes of Beale, who does not discard a batch of primed canvases because their colour has turned out too dark, but decides to use them 'for mens pictures y^t are of pretty swarthy dark complexion.' Beale 1681: 56v in Talley 1981: 287.

⁶⁶ W&N manuscript 'P8' 1840-78: P8P018AL01.

⁶⁷ W&N manuscript '20' 1838-58: 20P009L01.

⁶⁸ In this case, the 'first colour'. W&N manuscript 'P2' 1848-65, recipe date 1834: P2P126AL16.

⁶⁹ De Montabert 1829, vol. 9: 160-1.

century,⁷⁰ even though an entry in the Winsor & Newton manuscripts does reveal that the company is thinking about and experimenting with heated ‘rollers’ in order to flatten and smooth a canvas with a size layer of shellac.⁷¹ In 1892, Standage points out a problem with machine-priming: in machine priming the canvas is not stretched during application of the ground, therefore ‘the cloth will afterwards still stretch considerably, and the surface not being equally elastic is liable to crack’.⁷² The fact that this problem is real, is evident from an earlier dated recipe in manuscript ‘15’ in the Winsor & Newton archive (1843-50). This recipe, a second recipe discussing the possibility of using heated rollers to smooth a canvas covered with shellac dissolved in ammonia as a size layer, suggests that ‘some kind of straining contrivance to pull it [= the canvas] out to its full tension before the heat sets in’, would be required, and that this ‘would be an important step towards preparing canvass by Machinery’.⁷³

9.7 Concluding remarks

The regular appearance of references to commercial preparation in historical sources demonstrates that the role of commercially supplied supports is important during the whole period. And even before 1550, commercial preparers of canvas were active, as evidenced by the fact that Dürer had a panel prepared by a ‘Zubereiter’ in 1507.

While commercially prepared supports were available throughout the period, the continued publication of recipes for preparatory layers confirms the fact that artists remain interested in the execution of preparatory layers. A number of arguments why artists would not fully rely on commercial preparation were found in the sources: recurring complaints by artists about the quality of commercially prepared supports on the one hand confirm their importance, but they also reveal an important reason for artists to apply their own grounds, respectively, to closely oversee the preparation of grounds, since the quality of commercially prepared supports could not always be relied upon. In addition, some sources alluded to the fact that artists’ materials suppliers were active only in larger cities. Thirdly, specific wishes regarding the preparation of the support, such as the lead white in milk employed by Thomas Sully (1809-71), would prompt artists to prepare their own supports.

An important characteristic of the relation between commercial preparation and artist prepared supports is that this is not a ‘black-and-white’ situation. This much is clear from nineteenth century recipes for the modification of commercially prepared canvas.

The chronological overview confirmed a change in the character of commercial preparation, from individuals acting as ‘primuerder’ or ‘primer’ in smaller (work)shops during the seventeenth century to larger companies in the nineteenth century, like Winsor & Newton, that offered ready-primed, standard-sized canvases, panels, paper and board supports. Smaller companies that sold pre-primed supports continued to exist alongside

⁷⁰ (Standage 1892: 77-8) mentions machine-primed canvas in passing, when he writes that ‘much of the foreign [canvas] is coated by machinery’, while ‘the english is generally prepared solely by hand’.

⁷¹ W&N manuscript ‘17’ 1834-55, 17P032L10, 17P033L10.

⁷² Standage 1892: 77-8.

⁷³ W&N manuscript ‘15’ 1843-50: 15P035L01.

the larger companies in the nineteenth century, as demonstrated for Paris by the research of Roth-Meyer (2004).

Descriptions of available dimensions in both seventeenth and nineteenth century sources demonstrate a certain degree of standardisation that is linked to commercial preparation. However it is also shown that commercial preparation did not necessarily lead to complete standardisation, as during the nineteenth century, grounds were still made to order. The manuscripts of Winsor & Newton document how in 1874 grounds were prepared for individual artists, although in this case for a special purpose, photographic printing on canvas: 'Canvass Prepn for Photographic purposes - prepared [to] order for Messr Spencer Sawyer Bird & Co (Autotype Co.) Rathbone Ple. May 74'.⁷⁴ Also the Roberson archive shows that this company took orders for canvas preparation from individual artists. The company prepared different sorts of grounds for Frederic Leighton (in 1881 and 1882, ingredients mentioned are plaster of Paris and 'lac varnish on top'). For John Mellows (in 1888), who according to the note also sometimes prepares his own canvas, Roberson prepared canvas coated 'thickly with one coat of turpentine color to his order'. The comment 'not warrented to stand' indicates that Roberson did not entirely agree with the type of preparation wished for by the artist.⁷⁵

It is interesting to point out that a number of nineteenth century authors had strong connections to professional manufacturers of painting materials. Field was a professional colourmaker, Church advised colourman Roberson on the production of binding media and Blockx was a colourman himself. Notwithstanding his own commercial interest in ready-prepared grounds, Jacques Blockx fils (1882) did include recipes for preparatory layers in his manual.

⁷⁴ W&N manuscript 'P.04 1836- Private Copy of Processes. Vol 1st' 1834-93: P04P110L01. The ingredients of this ground are: gelatine, glycerine and China clay.

⁷⁵ 'Roberson's Recipe book', 1888 in Carlyle 1991, vol. 1: 364 and Carlyle 2001: 271. *See* Carlyle 1991, vol. 2: 5 or Carlyle 2001: 279-80 for information on Roberson's recipe books.