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

Stols-Witlox, M.J.N.

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

UvA-DARE is a service provided by the library of the University of Amsterdam (http://dare.uva.nl)

Download date: 05 Feb 2020
Table of contents of Volume 1

FOREWORD ............................................................................................................. 14

GENERAL INTRODUCTION .................................................................................. 19

1.1 EARLIER RESEARCH ON PREPARATORY LAYERS FOR OIL PAINTING ................. 20
1.1.1 Research into historic documents ................................................................. 20
1.1.2 The evolution of source research: developments in source research methodology .... 24
1.1.3 Reconstructions for the investigation of preparatory layers .............................. 26
1.1.4 The start of scientific investigations of preparatory layers ............................. 28
1.1.5 From the 1970s onwards: more combinations of recipe research and instrumental analysis .......................................................... 29
1.1.6 The achievements and limitations of previous research ............................... 33
1.2 THE CENTRAL AIMS OF THIS THESIS .......................................................... 35
1.3 RESEARCH METHODOLOGY ........................................................................ 37
1.4 STRUCTURE OF THE DISSERTATION ........................................................ 40

PART I: DESCRIPTION OF THE RECIPE DATASET AND ANALYSIS OF THE RECIPES ............................................................................................................. 43

CHAPTER 2 THE RECIPE COLLECTION, THE AUTHORS AND THE IMPACT OF THE RECIPES ............................................................................................................. 45

2.1 THE ESTABLISHMENT OF THE RECIPE COLLECTION ........................................ 45
2.2 SIZE AND SCOPE OF THE RECIPE COLLECTION ............................................. 46
2.3 THE CHARACTER OF THE SOURCES ................................................................ 53
2.4 THE AUDIENCES OF RECIPE BOOKS .............................................................. 59
2.5 THOUGHTS ON TEXTUAL ANALYSIS ............................................................. 63
2.6 COPIES, REPETITIONS, TRANSLATIONS AND LATER EDITIONS ........................ 64
2.7 CONCLUDING REMARKS ................................................................................ 65

CHAPTER 3 PREPARATORY LAYERS FOR OIL PAINTING; THEIR TERMINOLOGY AND FUNCTION ............................................................................................................. 67

3.1 THE PREPARATORY SYSTEM ............................................................................ 67
3.1.1 The purpose of the preparatory system ......................................................... 71
3.1.2 The size layer ............................................................................................. 72
3.1.3 The ground layers; fillers and pigments ....................................................... 72
3.1.4 Isolation layers .......................................................................................... 73
3.1.5 The ‘Imprimatura’, the ‘primuersel’, the ‘imprimeure’ and the ‘priming’ ............ 74
3.2 APPLICATIONS TO THE REVERSE OF THE SUPPORT ................................... 75
CHAPTER 7  APPLICATION AND TEXTURE ........................ 179

7.1  SIZE APPLICATION METHODS................................................................. 179
  7.1.1  Animal glue...................................................................................... 179
  7.1.2  Flour paste or starch paste .............................................................. 182
  7.1.3  Oil or varnish size application methods ......................................... 182
  7.1.4  Application tools ............................................................................ 182
  7.1.5  Smoothing ...................................................................................... 184
7.2  GROUND LAYER CONSISTENCY AND APPLICATION METHODS ............ 185
  7.2.1  The ground material: consistency of the ground mixture, the degree of pigment and filler dispersion ......................................................... 185
  7.2.2  Panel grounds .................................................................................. 187
  7.2.3  Canvas grounds ............................................................................... 189
  7.2.4  Ground application for copper, stone, paper and board ..................... 192
7.3  LAYER THICKNESS AND TEXTURE IN RELATION TO THE PAINTING SUPPORT 193
  7.3.1  General comments about layer thickness ......................................... 193
  7.3.2  Wooden panels ............................................................................... 194
  7.3.3  Canvas ............................................................................................ 196
7.4  PREPARING THE PRIMED SUPPORT FOR PAINTING ......................... 200
7.5  CONCLUDING REMARKS .................................................................. 202

CHAPTER 8  THE COLOUR OF PREPARATORY LAYERS................................. 203

8.1  GENERAL TRENDS IN GROUND COLOUR, 1550-1900 ................................ 203
8.2  PAINT DEPOSITS IN GROUND PIGMULATION ...................................... 208
8.3  GROUND COLOUR AND SUBJECT .......................................................... 210
8.4  THE TRANSITION TO LIGHTER GROUND COLOURS IN THE LATE EIGHTEENTH CENTURY ................................................................. 213
8.5  GROUND COLOURS IN NINETEENTH CENTURY RECIPE BOOKS ........ 214
8.6  CONCLUDING REMARKS ..................................................................... 216

CHAPTER 9  PROFESSIONAL PRIMERS ....................................................... 219

9.1  DOCUMENTARY EVIDENCE FOR THE EXISTENCE OF PROFESSIONAL PRIMERS ................................................................. 219
9.2  EVIDENCE FOR THE EXISTENCE OF PROFESSIONAL PRIMERS IN HISTORICAL RECIPE BOOKS ......................................................... 221
9.3  ARTIST-PRIMED CANVAS .................................................................... 221
9.4  THE QUALITY OF COMMERCIAL PRIMED CANVAS ............................. 224
9.5  ARTISTS’ MODIFICATIONS OF COMMERICALLY PRIMED CANVAS .......... 227
9.6  INFORMATION ON PREPARATORY LAYERS IN THE WINSOR & NEWTON ARCHIVE ................................................................. 228
9.7  CONCLUDING REMARKS .................................................................... 232

CHAPTER 10  THE AGEING OF PREPARATORY LAYERS ............................... 235

10.1  THE INFLUENCE OF THE SIZE LAYER .................................................. 235
10.2  THE INFLUENCE OF GROUND INGREDIENTS ....................................... 236
  10.2.1  Seventeenth century advice against the use of specific pigments .......... 236
  10.2.2  Problems related to the use of siccatives ......................................... 236
10.2.3 Nineteenth century concerns about the effect of lead white ........................................... 236
10.3 The influence of ground colour .......................................................................................... 238
10.4 The influence of ground absorbency .................................................................................. 244
10.4.1 The stability of aqueous grounds and their role in preventing paint discolouration ...... 244
10.4.2 Doubts about the absorbent qualities of chalk and glue grounds ............................. 249
10.4.3 The absorbency of grounds available commercially in the nineteenth century ......... 251
10.4.4 The influence of ground absorbency on painting technique ..................................... 252
10.4.5 Modifying ground absorbency: isolation layers, combinations of absorbent and non-
absorbent layers and relatively absorbent emulsions ....................................................... 253
10.5 The degradation of oil-based ground layers .................................................................... 255
10.5.1 The importance of a well-dried oil ground for long-term stability ......................... 257
10.6 Protecting the reverse side of the support ........................................................................ 258
10.6.1 Applications to the reverse of the panel ..................................................................... 259
10.6.2 Applications to the reverse of canvas supports ......................................................... 260
10.7 Concluding remarks ......................................................................................................... 261

PART II: RECONSTRUCTION-BASED STUDIES OF RECIPES ................................. 265

INTRODUCTION TO PART II .................................................................................. 267

CHAPTER 11 SIZE LAYERS FOR OIL PAINTING IN WESTERN EUROPEAN
SOURCES (1500-1900). HISTORICAL RECIPES AND RECONSTRUCTIONS ...... 269

11.1 Introduction ....................................................................................................................... 269
11.2 Animal glue as a historic size layer material ................................................................. 269
11.3 Reconstructions of glue size layers for canvas painting .............................................. 270
  11.3.1 Reconstruction details ............................................................................................... 270
  11.3.2 The chemistry of animal glue preparation ............................................................... 271
  11.3.3 Reconstruction results: influence of raw material .................................................. 272
  11.3.4 Reconstruction results: effects of preparation variables ........................................ 272
  11.3.5 Reconstructions: application to canvas ................................................................. 273
11.4 Relationship between recipes and reconstructions ....................................................... 276
11.5 Evaluation ......................................................................................................................... 277

CHAPTER 12 FLOUR PASTE IN RECIPES FOR PREPARATORY LAYERS FOR
OIL PAINTING, 1550-1900 ....................................................................................... 279

12.1 Introduction ....................................................................................................................... 279
12.2 Methodology .................................................................................................................... 280
12.3 Textual analysis of historical recipes that include flour or starch in preparatory layers .... 281
  12.3.1 Ingredients ................................................................................................................ 281
  12.3.2 Historical paste preparation methods ............................................................... 281
12.4 Flour and starch: varieties, production methods and trade ......................................... 282
  12.4.1 Historical descriptions of the type of flour employed ......................................... 282
  12.4.2 Characteristics of historical wheat .......................................................................... 283
  12.4.3 Grain characteristics of wheat and rye ................................................................. 284
  12.4.4 Cereal milling and sieving ....................................................................................... 285
12.5 Historical starch production ........................................................................................... 286
  12.5.1 Historical production methods for wheat and rye starch: from flour or from grains .... 286
  12.5.2 The role of fermentation ......................................................................................... 287
CHAPTER 13  LEAD WHITE: THE IMPLICATIONS OF THE USE OF DIFFERENT QUALITIES OF LEAD WHITE .......................................................... 299

13.1  INTRODUCTION ................................................................. 299
13.2  LEAD WHITE MAKING .................................................... 300
13.3  FACTORS DURING PRODUCTION THAT INFLUENCE LEAD WHITE QUALITY ............................................................ 306
13.4  QUALITIES COMPARED .................................................. 307
13.5  WASHING AND CLEANING OF LEAD WHITE ......................... 308
13.6  ADULTERATION ............................................................. 312
13.7  TERMINOLOGY ............................................................. 313
13.8  LEAD WHITE IN PREPARATORY LAYERS ............................ 318

CHAPTER 14  ‘TO PREPARE WHITE EXCELLENT...’. RECONSTRUCTIONS INVESTIGATING THE INFLUENCE OF WASHING, GRINDING AND DECANTING OF STACK-PROCESS LEAD WHITE ON PIGMENT COMPOSITION AND PARTICLE SIZE .............................................................. 321

14.1  INTRODUCTION ................................................................. 321
14.2  MATERIALS AND METHODS ............................................ 323
14.3  WATER WASHING ........................................................... 324
14.4  VINEGAR GRINDING ....................................................... 325
14.5  EFFECT OF WASHING ON LEAD WHITES IN MIXTURE WITH CALCIUM CARBONATE .................................................. 327
14.6  DECANTING .................................................................... 327
14.7  CONCLUSIONS AND FUTURE RESEARCH ............................. 331

CHAPTER 15  RECONSTRUCTING SEVENTEENTH-CENTURY STREAKY IMPRIMATURA LAYERS USED ON PANEL PAINTINGS ................................................. 333

15.1  INTRODUCTION ................................................................. 333
15.2  TERMINOLOGY ............................................................... 333
15.3  IMPRIMATURAS IN RECIPES AND PREVIOUS ANALYSIS ............ 335
15.4  RECONSTRUCTIONS: PROTOCOL AND EXECUTION ................. 338
15.4.1  The support and build-up of sizing and ground layers ............... 339
15.4.2  Unpigmented isolation layers ........................................ 339
15.4.3  Underdrawing ............................................................ 339
15.4.4  Imprimatura composition ............................................ 340
15.5  OBSERVATIONS AND EVALUATION .................................... 341
15.5.1  Observations on the different imprimatura binders .................. 341
15.5.2  The effect of isolation layers ......................................... 344
15.6  CONCLUSIONS ............................................................... 345
CHAPTER 16    GENERAL CONCLUSIONS ................................................. 349

16.1    THE APPROACH: RECIPE ANALYSIS, RECONSTRUCTIONS, COMPARISON WITH PAINTINGS ................................................. 349
   16.2.1    Recipes for preparatory layers: from a fragmented image to continuity .................................. 350
   16.2.2    Reconstructions for the interpretation of recipes and for comparisons with actual paintings ................. 350

16.2    AUTHORS’ INTENTIONS AND ARTISTS’ MOTIVES ................................................................. 353
   16.2.1    The character of the source and its influence on the type of advice provided ......................... 353
   16.2.2    Recipes as a source of information about artists’ intentions and fears .................................. 354

16.3    RECOMMENDATIONS FOR FURTHER RESEARCH ........................................................................... 356
   16.3.1    A final word .................................................................................................................... 358

ABSTRACT .................................................................................................................. 363

LIST OF TABLES AND FIGURES IN THE MAIN TEXT ................................................. 368

BIBLIOGRAPHY OF SECONDARY LITERATURE .................................................. 374

An annotated bibliography of historical sources is found in Volume 2, Appendix 2.

BIOGRAPHY OF THE AUTHOR ................................................................................. 411